UNIVERSITY OF NAIROBI

College of Architecture and Engineering

School of the Arts and Design

BDS 413: PROJECT PAPER

(Interior Design Specialization)

ARABESQUE PATTERNS AND UNIVERSAL DESIGN IN CREATING AESTHETIC INTERIOR DESIGN AT BERMUDA GARDENS HOTEL.

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B05/44209/2017

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

Submission date: 14th April, 2020

Declaration

I Noormohamed Aisha Abbas, hereby declare that this is my legitimate 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 clearly indicated in a normal standard way.

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

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Signature……Date……

Dedication

I dedicate this paper first and foremost to God Almighty for bringing me this far and never letting me fail throughout the struggle, be it education or life in general.

I also dedicate this paper to my mother and sister for being my backbone and always being there to push me through and encourage me wholeheartedly in my education. I could not have made it this far without both of your support.

I also want to immensely thank my Aunt and cousin for housing me and catering for me all my needs during the course of my University life.

Acknowledgement

I would like to acknowledge the very encouraging and professional role carried out by my supervisor Dr Michael Munene and Dr Lilac Osanjo, the Director School of the Arts and Design, without whose support, guidance and earnest belief in me, this project paper would not have been conceived. The privilege of working under them has extensively influenced my level of knowledge in Design, development and passion in creating Aesthetic Interior Design.

My sincere gratitude goes to all the lecturers of the School of Arts and Design who have taught me and equipped me with the best design knowledge throughout the four years of my University life.

Special thanks go to the Management and entire staff of Bermuda Gardens hotel for their time, their helpful nature by providing me with the necessary information I needed without fail and granting me the permission to use their premises for my research. My gratitude also goes to the respondents who took out time to help me with information.

Lastly, I would love to share my immense gratitude to my fellow classmates, our class representatives, all my close friends and the entire class of 2020, fourth years in supporting and inspiring me throughout the course and helping me in ways I will never forget.

May God bless you all with His unending mercy, love and blessings abundantly.

Abstract

The integration of Arabesque patterns with Universal Design in creating aesthetic interior spaces forms the main theme of this research paper. This paper mainly aims to establish the application of Universal design within the four thematic areas of Interior Design by employing arabesque patterns and other Swahili design features within the design of the Bermuda Gardens hotel. The research will exhaust to find out ways in which the Hospitality industry can be made accessible to all users regardless of age, disability or any other factors.

The world has been witnessing a lot of injustice happening to the disabled, the aged and the visually impaired within all the sectors mainly the hospitality industry. Majority of the hotels, restaurants, cafes and bars are inaccessible to the wheelchair users making them feel alienated from everyone. The field of Interior Design as part of the building sector can play a part in contributing to design accessible built environment through the use of the Universal Design principles.

The research paper will be divided into five chapters. Chapter one will introduce the theme of the study, the problem statement, the study's objectives and research questions, significance and limitations as well as the scope of the study. Chapter two entails a well-researched literature review on Universal Design, Its principles and how UD can be applied within the Interior Design of the Hospitality industry, Swahili design, Arabesque patterns and its features. Chapter three will talk about the research design and methodology used by the researcher to collect, analyse and interpret data of the study. Chapter four will expound on the presentation and findings of the study through qualitative analysis and finally chapter five will be a summary of the findings, the researcher's recommendations on the four main areas of Interior Design for the hotel with inspiration derived from the literature review in chapter two.

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List of Abbreviations

1. UD: Universal Design.
2. WHO: World Health Organization.
3. UN: United Nations.

Definition of Terms

Arabesque-Biomorphic, floral patterns representing the underlying order and unity of nature.

Qur'an- It is the Central religious text of Islam, which Muslims believe to be a revelation from God.

Universal Design- It is the design of buildings, products or environments to make them accessible to all people regardless of age, disability or other factors

Niche- A shallow recess, especially one in a wall to display an ornament

Makuti- It is thatching made from the sun-dried leaves of the coconut palm.

Heena- It is a dye used for temporary body art.

CHAPTER ONE

1.0 INTRODUCTION OF THE RESEARCH

1.1 Introduction

A competitive and global nature of modern business, the flourishing communications technology industry, the international disability movement and the rapidly growing aging and disabled populations all around the world are driving the increased demand for more universally designed products, environments and services. Universal design is an approach to design that increases the potential for developing a better quality of life for a wide range of individuals. It is a design process that enables and empowers a diverse population by improving human performance, health and wellness and social participation (Steinfield and Maisel, 2012). It creates products, systems and environments to be usable as possible by as many people regardless of age, disability or situation. Universal design goes further than barrier-free design or accessible design standards. It is meant to improve all the lives of the people in the built environment. In this philosophy, people of all ages are included, as well as people with or without what our society has determined to be physical disabilities. UD concept offers product and architectural design solutions that should make daily life comfortable for the physically challenged as well as for the physically fit (H.Baucom, J.Grosch, 1996).

African art history has played a very crucial role in modelling the culture and history of the world. Western culture has been a major impact in our society and designers should support local African culture first before adopting the West. Designers should appreciate African culture within their works by applying them into interior design so as to acknowledge their African roots. This study focuses on Swahili art and their arabesque patterns. Swahili design is mainly found along the Coast of East Africa in places such as Mombasa, Lamu and Zanzibar. Islamic art is a branch of the Swahili design which uses Arabesque patterns to embellish wood stone and plaster geometric as well as filial patterns while leaf like designs were the main elements in decimation of all kinds of surfaces and item. Arabesque simply means ‘in the Arab fashion’ in French. Swahili art follows the Islamic rules which include avoiding any imagery of the living in their patterns as it is against their religion.

Islamic art is abstract, but also poetical and gracious since it borrows inspiration from nature. It is woven of soberness and splendor uniting the joyous profusion of vegetation with abstract forms. This admixture of qualities is already to be met with in the Q'uran where the geometry

of the ideas is as it were hidden under the blaze of the forms. Being, if one can so put it, haunted by unity, Islam has also an aspect of the simplicity of the desert, of whiteness and of austerity which, in its art, alternates with the crystalline joy of ornamentation." (Frithjof Schuon,1969).

The hospitality industry is one of the fastest growing sectors in Kenya ranging from hotels, cafes, motels and restaurants. The year 2020 is set to see more design changes and innovations for this industry. As far as hotels are concerned, it's essential for them to meet up tourists and locals expectations in accordance to the design being demanded to attract more visitors and to make their stay worthwhile. It's no surprise that the customers want more aesthetic value and culture. They are in search of a hotel that delivers a unique, comfortable and memorable experience. These changes in trends manifest year on year forcing designers to keep thinking in a more creative level and placing themselves in the customer's position to be able to come up with aesthetically and universally appealing designs. After a thorough research on the hotels present in Nairobi, the site the researcher has undertaken for the study is Bermuda Gardens Hotel, which is located in the quiet neighborhood of Ngara/Parklands area of Nairobi, in a restored colonial house. The use of Arabesque patterns will be applied to this site hand in hand with the design philosophy Universal Design to bring out its aesthetic and functioning value.
For this research, a target population of 50 people is chosen from which a sample population will be chosen through purposive sampling. In terms of methodology, qualitative research will be applied to accomplish the objectives of the study. The researcher will use: observation, face to face interviews, photography and focus groups to collect the necessary data. The collected data will then be analyzed through content and visual analysis and data presentation will be portrayed through tables, pie charts, photographs and narratives.

1.2 Background of the study

The world has a significant number of people with disabilities who lack the luxury of enjoying hospitality services. According to the United Nations (UN) (n.d), the global population of persons with disabilities is more than one billion. More than 1 billion people, or 15% of the world's population, experience some form of disability (WHO, 2011). Also, disability directly affects over two billion people such as spouses, children, and caregivers. Looking at the aged, the global population of people over 65 years of age is expected to double, from 8.5 percent to 17 percent, by 2050, totaling 1.6 billion people. Those with limited mobility**,** the World Health

Organization estimates 75 million people, or 1 percent of the global population, require a wheelchair, with nearly a third of that group unable to access them. Lastly going worldwide, 1.3 billion people, 17 percent of the population, have some form of visual disability (Dillon and Greene, 2019). In the context of universal access and design, the UN report observes that the hospitality industry fails to tap into this potentially massive market because of inaccessible facilities and services.

Further, the tourism and hospitality sector imposes discriminatory policies and practices against individuals with disabilities. Designers all over the world are so focused on creating aesthetic interiors and exteriors that they neglect and forget on the functionality and usability of the spaces. Most of the hotels do not cater for the mobility and functionality of users such as those on wheel chairs, pregnant mothers or mothers with baby strollers and the aged with their walking sticks. The hotels also do not cater facilities for those who are visually impaired such as poor signage and lack of tactile indicators. However, these vices can be transformed into a virtue through the endorsement and implementation of accessible and inclusive hotels.

Tactile amenities and spacious storage are a desire shared by many hotel guests, but making a room beneficial to all, no matter age or ability, is the key to 21st-century hospitality. Recognizing the need to alter rooms and expand services, hotels are making an extra effort to reduce barriers and increase accessibility (Harris, 2018). It is, therefore, crucial to identify the unique needs of different groups of people, followed by the elimination of all obstacles that could hinder such persons from participating and enjoying experiences. 'Design for ALL' should be the newest trend and put on the frontline. We need to make it sound cool like the way it's cool to be 'green'. Designers should question themselves 'Can it become cool to create inclusive environments before it is too late?'

For this particular case study, the interior space in Bermuda Gardens Hotel is very visually unappealing with the cluttered old furniture, poor signage and lack of space for mobility. Insecurity is a common threat because of the faulty door handles, the walls usually appear moist when it rains and the floors are old and dirty. The interiors, furniture, landscape and exhibition of the hotel lack a uniform African theme or attributes. Embracing of African ideas on interiors is greatly being done away in design spaces due to the influence of western culture. There's a need to spread the style in modern contemporary design while simultaneously creating awareness locally. This paper aims to show how the Arabesque patterns derived from Swahili

art and the principles of Universal Design can be applied to design accessible interiors and exteriors of Bermuda Gardens Hotel.

1.3 Problem statement

Bermuda Gardens Hotel has not incorporated any aspects of universal design therefore making it inaccessible to users such as those on wheelchairs, women carrying babies on strollers, the aged and the visually impaired.

1.4 Research Objectives

1.4.1 Main Objective

How principles of Universal design can be applied together with Arabesque patterns to the Interior and exterior spaces of Bermuda Gardens Hotel in a sustainable way to create accessible built environment.

1.4.2 Specific Objectives

- To find out the existing design applied at Bermuda Gardens Hotel.
- To explore the ways in which universal design can be incorporated within the interiors and exteriors of the hotel to improve on accessibility to all users.
- To come up with the desired Arabesque patterns used in Swahili art that will bring out the African feel in the contemporary design world.

1.5 Research Questions

- Has aesthetics and Inclusive Design been put into consideration into the design of Bermuda Gardens Hotel?
- In what ways can Universal Design be applied within the interiors and exteriors of the hotel?
- Which Arabesque patterns used in Swahili art can be adopted to bring out the African feel in the contemporary design world?

1.6 Significance of the Study

Universal Design or inclusive design is a concept which ensures all needs and functionality of all users is catered for in the design of products and services. This study will equip designers the necessary knowledge required in creating accessible interiors and exteriors for all users.

Designers will also register on how to enhance mobility and functionality for the disabled such as those on wheelchairs, aged, mothers with baby strollers and also the visually impaired.

The study will largely benefit the disabled who are usually underprivileged in most instances as they are alienated by the characteristics of the interiors and exteriors of the hotels.

1.7 Limitations of the Study

Constraints of time- Time factor will pose a big threat to the study since the research topic is quite broad and the time allocated is very little compared to the amount of research needed on the philosophy. The researcher will carry out the study in a short span of time hence making it difficult to cover and exhaust all the four thematic areas of interior design.

Lack of resources- There are limited resources when it comes to financially catering for the whole study as the research can get heavy on the researchers pocket due to the constant visits to the site, concept creations and presentation of models and prototypes.

Lack of response- Response rate for this study can be a limiting factor as not all of the targeted subjects give the response the researcher is expecting while some don't even bother giving any feedback at all.

1.8 Scope of the Study

1.8.1 Geographical

Bermuda Garden Hotel is a bed and breakfast, country style hotel situated in Sot Ololol Rd, between Forest Road and Muranga road (off Desai Road), Opposite Gymkhana Sports Ground in Ngara, Nairobi. The Hotel features accommodation, a bar/restaurant, reception area and a garden. The hotel was previously a colonial house which was then transferred into a hotel.

1.8.2 Concept

This study is focused on hotel design and will refer to the concept of Universal Design and Arabesque patterns derived from Swahili art as a source of inspiration while focusing on accessibility for all users within the four thematic areas of Interior Design.

1.8.3 Content

This research study is limited to the primary and secondary sources of data. Primary data will be accessed from the site through data collection methods such as observation, interviews and photographs while secondary data will be retrieved from journals, magazines, books, internet

and scholarly articles and all other materials which will be useful in acquiring information on Universal design and Arabesque patterns.

1.9 Conclusion

This section has provided detailed information on the background of the problem being studied. It has also briefly outlined the problem statement, objectives and research questions that the study aims to investigate. The significance and limitations encountered by the study have been recognized and listed down. This research proposal will concentrate on how universal design can be incorporated together with Arabesque patterns to create accessible and aesthetic spaces within the Bermuda Gardens hotel.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter contains a review of literature concerned with the design philosophy Universal design, its implementation in the hospitality sector such as hotels universally, how to create accessible spaces for all users including the disabled, aged, visually impaired and mothers with strollers, design exemplars for accessible hotels, ways in which universal design has been applied within the landscape, interiors, exhibition and display and furniture design. There's also a review of Swahili art and its various Arabesque patterns, its features and design exemplars for Swahili art within Kenya.

2.2 Universal Design

The term universal design was first used in 1970's and reinterpreted by the American architect Ronald Mace in 1985 (Ostroff, 2001). Since then, universal design has been widely accepted and expressed all over the world, which is also known as, 'inclusive design' and 'design for all' (Story, Mueller & Mace, 1998). In its broadest term, Universal Design (UD) is "design for all people". In 1988, Mace defined it as an approach for creating products and built environments accessible, usable and understandable for everyone (Preiser, 2001). Mace, Hardie & Place (1991) described universal design as follows: "It includes not just people in wheelchairs, but also people with mobility impairments, speech and hearing impairments, cognitive impairments, and with other inabilities that can be occurred over a person's life span" The Centre for Universal Design states that "universal design is the best way to integrate access for everyone into any effort to serve people well in any field" (Story, Mueller & Mace, 1998, p. 127).

Designing for the disabled is about making buildings accessible to and usable by people with disabilities. Universal design is about making buildings safe and convenient for all their users, including people with disabilities (Goldsmith, Selwyn, 1997). Its focus is not specifically on people with disabilities, but all people. The move towards universal design has developed due to the expanding population of people with varying degree of abilities and advancing years, their demands for recognition and desire for independent living. "Universal design" targets all

people at different ages; children, the elderly, the disabled, people with different sizes and forms, sick or injured people and people with discomfort are in this range.

2.2.1 The 7 principles of UD

The 7 principles of Universal Design were developed in 1997 by a group of architects, product designers and environmental design researchers, led by the late Ronald Mace in the North Carolina State University. The purpose of the principles is to guide the design of environments, product and communications. According to the Center for Universal Design in NCSU, the principles may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments. The following principles have been sourced from (Rossetti, 2006):

2.2.1.1 Equitable Use

The design is useful and marketable to people with diverse abilities.

Figure 2.1: Accessible automatic doors (Source: www.verywellhealth.com, 2019).

- It provides the same means of use for all users: identical whenever possible; equivalent when not.
- It avoids segregating or stigmatizing any users.
- Provisions for privacy, security, and safety are equally available to all users.

2.2.1.2 Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

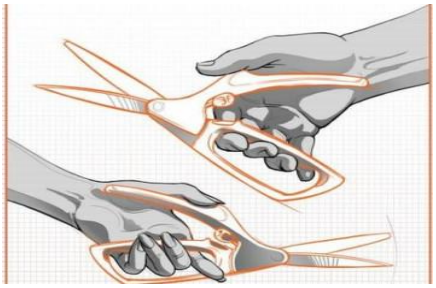

Figure 2.2: Scissors usable by left and right hand (Source: www.millpondporch.com, 2019).

- It provides choice in methods of use.
- It accommodates right or left handed access and use.
- It facilitates the user's accuracy and precision.
- It provides adaptability to the user's pace.

2.2.1.3. Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

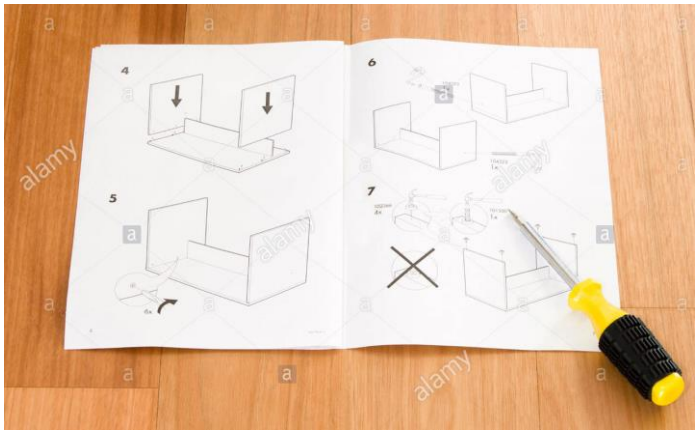

Figure 2.3: Assembly of furniture without written instructions (Source: www.alarmy.com, 2019)

- It eliminates unnecessary complexity.
- It is consistent with user expectations and intuition.
- It accommodates a wide range of literacy and language skills.
- It arranges information consistent with its importance.

• It provides effective prompting and feedback during and after task completion.

2.2.1.4. Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Figure 2.4: Accessible thermostat by people with visual problems (Source: www.eastersealstech.com, 2019).

• It uses different modes (pictorial, verbal, tactile) for redundant presentation of essential information.

• It provides adequate contrast between essential information and its surroundings.

• It maximizes "legibility" of essential information.

• It differentiates elements in ways that can be described (i.e., make it easy to give instructions or directions).

2.2.1.5 Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Figure 2.5: Computer tab with undo option (Source: www.dummies.com, 2019).

• It arranges elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.

• It provides warnings of hazards and errors.

• It provides fail safe features.

2.2.1.6. Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

Figure 2.6: Lever door operated with close hands (Source: www.universaldesign101.weebly.com, 2019).

• It allows user to maintain a neutral body position

• It uses reasonable operating forces.

• It minimizes repetitive actions.

• It minimizes sustained physical effort.

2.2.1.7. Size and Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use, regardless of user's body size, posture, or mobility.

Figure 2.7: Wide subway passage for wheelchair users (Source: www.slideplayer.com, 2019)

- It provides a clear line of sight to important elements for any seated or standing user.
- It makes reaching to all components comfortable for any seated or standing user.
- It accommodates variations in hand and grip size.

2.2.2 Application of UD in Interior Design

Universal Design has proved to be a new source of inspiration for designers in their quests to achieve designs that suits wide range of users. The Universal Design concept is defined as the design of space and applied equipment for most of people with any ability or age, consistent with their needs in the space (Imrie & Hall, 2001; Segherlou & Farzin, 2014). Design professions such as; architecture, interior architecture, landscape design, industrial design and graphic design have to attach importance to create environments and products that derives an accessible design by all user groups. Universal design process is a multi-constraint task due to many user requirements and the complexities caused by the interaction of the requirements in developing design solutions. Since all universal design requirements cannot be equally satisfied, a designer must determine the relative importance and implementation order of each requirement.

Universal design principles are currently being implemented in modern day interior design mostly in designing of public spaces such as hospitals, schools (both the learning style and physical space), libraries, hotels, restaurants and many more. Universal design can be applied to physical interior and exterior spaces to ensure that they are welcoming, comfortable, accessible, attractive, and functional. According to Rahim (2012) and AusAid (2013), there are 4 categories of design requirement which must be considered in designing accessible environment within and between buildings and in outdoor environment.

Table 2. 1 : Design requirement in UD (Source: Rahim (2012).

Table 2: Category of design requirement in Universal Design Requirement Component Sensory	
Requirement	**Component**
Sensory	Tactile warnings, guide ways and information

Outdoor environment	Obstructions, signage, street furniture, pathways, kerb, ramps, pedestrian crossing, alarms
Horizontal areas	Doors, entrances areas and lobbies, corridors, handrails and railings, bridges
Vertical areas	Ramps, lifts and stairs

Specific considerations should be made for furniture and fixtures, usability, entrances and exits, climate, information resources and technology, and safety. The spaces should be able to cater for the needs of both people with and without disabilities to ensure there is no biasness in design. Ease of use and mobility is also taken greatly under consideration as they are two important factors to look for in a space. For example, in a universally designed classroom furniture is adjustable in height and can be easily arranged for different learning activities and groupings. A universally designed facility includes clear directional signs in large, high-contrast print. Another example of UD of physical spaces is doors with sensors that automatically open for individuals carrying packages, those using wheelchairs, the elderly who experience weakness, or parents pushing baby strollers (Burnstahler, 2012).

Good universal design is invisible, hidden or blended into the aesthetic of the design. The clever designer can find ways to make the essential physical elements of universal design contribute to the theme of the design rather than looking like bolted on after thoughts.

2.3 Universally Designed Hotel Requirements

2.3.1 Main entrance

- Entrance should be easy to locate and adequately signposted
- Consider installing automatic or semi-automatic doors.
- Doors should be easily identifiable and contrast visually with the surrounding wall
- The minimum unobstructed width of an entrance doorway should be not less than 800 mm. 850 mm or more is recommended, as more space can be required for a person using a powered wheelchair

- The floor texture immediately next to the door should be different from the surrounding floor texture • There should be a landing of at least 1800mm x 1800mm immediately next to the door (‘A GUIDE TO UNIVERSAL DESIGN,’ n.d, p 9).

Figure 2.8: Automatic accessible door (Source: www.alamy.com, 2019)

2.3.2 Reception

Location of the reception should be such that it is easily identifiable from the entrance. The approach to the reception should be obstacle free. Reception areas and desks should be designed, fitted out and furnished to enable all people to be greeted and directed as required. As reception areas and reception staff are often the first impression about an organization or service, it is important that they are accessible for all, including people with disabilities. Reception desks should be designed and located to be used by people standing and in wheelchairs, and other reception furniture should be position to allow space to maneuver. Some of the main features include;

- A clear maneuvering space at least 1500 mm square should be provided in front of the counter on the receptionist's side and on the visitor's side. 1800 mm square is preferred.
- Height- The counter level should be between 740 mm to 800 mm from the floor. The clear knee space underneath should be at least 700 mm deep and 900 mm wide. Part of the desk should also be at a height suitable for people standing to write, between 950 mm and 1100 mm
- Lighting: – To facilitate lip-reading, lighting should provide even illumination.
- Seating: – Seating should be provided for people who cannot stand for long in a waiting area around reception. A good height for seats or benches is about 480 mm above the floor. Some seating can consist of perch-type seating at height approximately

700 mm above floor level against which visitors can lean or half-sit. They are simple and inexpensive to construct and maintain, and comfortable for people with arthritis or back problems who find it difficult to get up from a low seat (‘Accessible Components for the Built Environment,’ n.d, p. 20).

2.3.3 Restaurant, Bar, Pub and Lounge

All these areas must internally be at one level with adequate circulation space for wheelchairs. All areas of the facility should be accessible, including the buffet and the bar counter. The facility, if not on the principle floor, should be accessible by a guest elevator.

- The furniture should not be fixed but movable, to allow creation of extra space, if required.
- There should be an availability of seats both with and without arm rests.
- Make sure to leave a free passage of minimum 100cm, preferable 120cm between groups of tables and chairs to allow wheelchairs to maneuver easily.
- The seat height should range from 450mm to 475mm. • There should be a clear unobstructed space of 750mm under the table. Fancy table legs can inhibit a close access to the table by persons on wheelchairs.
- Furniture should contrast with the floor and use of heavy patterns should be avoided on the furnishing (‘A GUIDE TO UNIVERSAL DESIGN,’ n.d, p17).

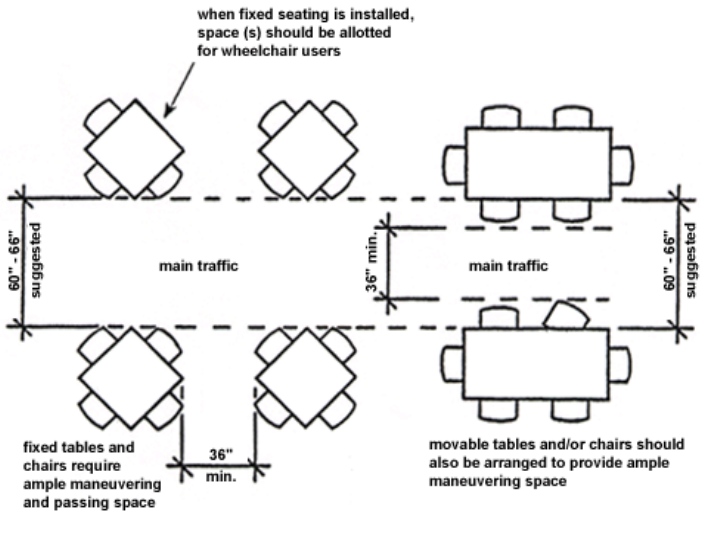

Figure 2.9: Accessible furniture layout (Source:www.pinterest.com, 2019) , Figure 2.10: universal size chair (www.shpock.com, 2019).

2.3.4 Hotel Rooms

Rooms should to be well dimensioned to allow for sufficient space for wheelchair users, a person using crutches or a person relying on an assistant. All fixtures and fittings should be appropriately designed and correctly positioned. Good lighting or natural light, and appropriate acoustics should always be considered. Signposted information of different kinds improves accessibility, usability and orientation. Signposted information of different kinds improves accessibility, usability and orientation.

To enable wheelchair users to see through a window, the lower edge of the glazing should be positioned between 800 mm and 1100 mm from the floor depending on the target users' seat height. Also, natural light should be controllable and adjustable by device such as blinds where possible to suit the needs of the individual ('Accessible Components for the Built Environment,' n.d, p2)

2.3.5 Hotel pathways and Landscape walkways

The design of the path or route to the building from site boundary or from the parking area should be designed and constructed to enable all people to approach, enter and exit the building easily.

Technical requirements: Sufficient width and ensuring pathway is obstacle free (i.e. no protruding objects), continuous, firm, durable, slip resistant, level or adequately ramped with appropriately designed kerbs, tactile surfaces and handrails to prevent falling ('Accessible Components for the Built Environment,' n.d, p6). The pathways should also be well-lit for mobility purposes.

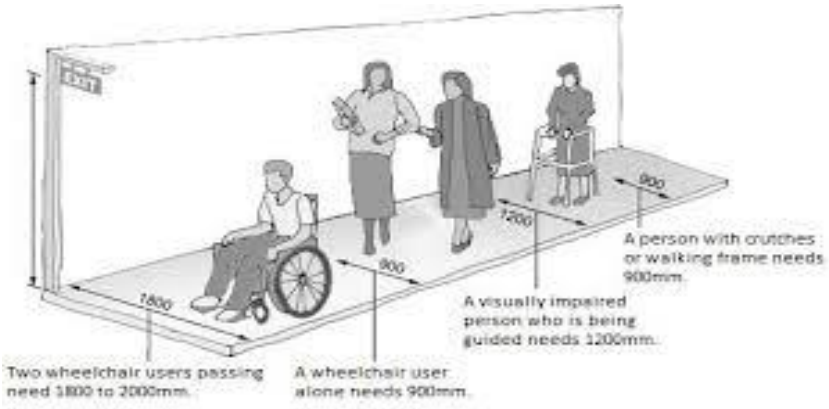

Figure 2.11: Required width of pass way by all users (Source: www.unicefinemergencies.com, 2019).

2.3.6 Outdoor Facilities

The term "Outdoor facilities" embraces a wide range of components in the outdoor environment including benches, signboards, bicycle stands, water supply facilities, playgrounds, etc. Location of outdoor facilities should always allow free passage and the safe use of site amenities ('Accessible Components for the Built Environment,' n.d, p12).

- Outdoor benches should be kept at regular intervals and the measurements include- Seat height 400 mm to 450 mm ,back support height 750 mm to 790 mm and seat depth 400 mm to 450 mm
- Signage: – Signs should be readable and legible for people who have low vision or intellectual impairments with colour contrast and large font size, well-illuminated, clear and readable signs should be placed at a consistent height.
- Way finding and guided paths with other physical support of information (visual, audible and tactile information), signage and symbols

Figure 2.12: Tactile indicators (Source: www.ehmtic2014.com, 2019).

- Well positioned car parking should be reserved with signage, adequate space and level connection to pathway ('Accessible Components for the Built Environment,' n.d, p12, p27, p12, p8).

2.4 Design Exemplars

2.4.1 Scandic hotel by interior architect; Krook and Jader

Scandic is one of the Nordic region's leading hotel chains with 230 hotels in seven countries. Their Hotels for All concept implements principles of Universal Design through improvements in their rooms, restaurants and services that will increase accessibility for all guests. Since 2010, 150 new rooms have been built for visitors with disabilities.

Figure 2.13: Universally designed bathroom, 2019. (Source: www.zeroproject.org, 2019).

Figure 2.14: Universally designed bedroom, 2019. (Source: www.scandichotels.com, 2019).

Figure 2.15: Universally designed reception, 2019. (Source: www.doga.no, 2019).

The Scandic Oslo Airport in Norway shows how to combine modern architecture and design with consideration of universal design: good, consistent quality in the design of products, interiors, architecture and functional solutions, the universal design of a high level is evident in this project. It sets a new standard in the way they have integrated universal design. Here one has, as the only hotel chain today, taken into account the interests of all users in the business strategy. It has been good for vision, hearing and mobility, among other things, the good accessibility, visual alarms, telephone loop, arrangements for the charging of electric wheelchairs and much more. It uses different materials, creates a clear visual outline and has created a design that is acoustically good. The interior also takes into account people with environmental disabilities, that is: asthma, allergies or other sensitivities (Ambrose, 2011).

Scandic's design process is an ongoing, long-term plan for developing existing hotels, building new rooms and training staff members to have a better understanding of accessibility. Some key features on Scandic’s hotels checklist are;

- Height-adjustable bed
- A space of at least 80 cm around the bed
- Vibrating alarm clock and fire alarm available on request
- Hooks placed at different heights so they can be reached from a wheelchair
- Mirror at a suitable height for wheelchair users as well as standing guests
- Handrail on the inside of doors at a height that can be closed from a wheelchair
- No or low thresholds at doorways

- Single-grip mixer tap or automatic tap
- Washbasin placed at a minimum height of 78 cm so a wheelchair will fit under it. The hook, soap and hand towels are also easy to reach
- Hearing loop available for meeting rooms
- The doors are at least 80 cm wide, so that guests can get through with a wheelchair, crutches or a walking frame
- The stage is accessible for wheelchair users. All these features are not designed to look like "special needs" equipment or add-ons. Better accessibility is something that everyone, including able-bodied guests, can benefit from. Scandic hotels are becoming well placed to attract large numbers of disabled people looking for a better hotel experience (Design and Architecture Norway, 2010)

2.4.2 100 Broadview lobby by Quadrangle architects & interiors

Located in Toronto, Canada, 100 Broadview started out as a storage facility that was converted into a commercial rental building. However, the building's entranceway was inaccessible and lacked street presence and visibility. The building's owner chose to give up leasable space to overhaul the entranceway to include a bold design featuring ramps that distinguish the property as a creative hub open to strollers, bicycles and mobility devices. Quadrangle's aim for this design was to upgrade 100 Broadview by embracing the building's potential and history, infusing it with a contemporary spirit that would not only transform it into an attractive, well-designed space, but also a vibrant, neighborhood hub while providing a wise investment in the property for the long-term.

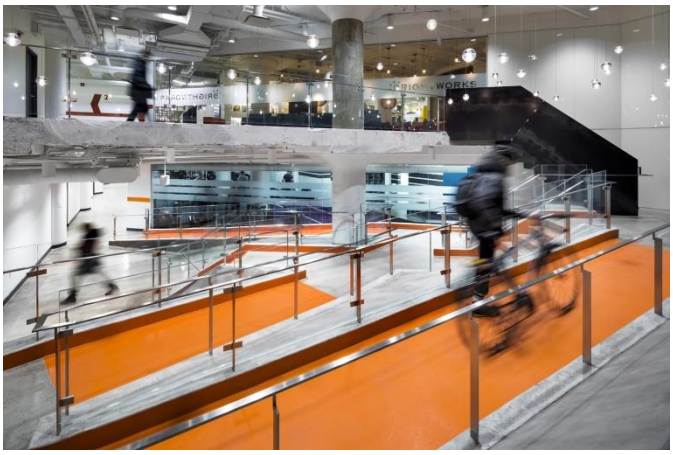

Figure 2.16: Broadview lobby 100 (Source: www.archdaily.com, 2019), Figure 2.17: Signage within the lobby (Source: www.archdaily.com, 2019).

Quadrangle's solution starts with a bright orange sign hanging above the lobby entrance, contrasting with the red brick and grey mortar façade, giving the building an identity and clearly marking the entrance. They designed a concrete ramp that zigzags downwards, drawing users to both the upper and basement levels with a sense of depth and movement. Intersecting the ramp are stairs downwards, marked with orange visibility strips, and a blackened steel staircase with wood treads leads upwards. These elements overlap, creating a textured and grand entrance to the building. This balance of industrial elements, inviting warmth and dynamic colour define an entryway that welcomes creative and innovative thought, as well as congregation and rest (Arch Daily, 2020).

To encourage accessibility, Quadrangle used universal design on various levels to accommodate those with vision loss and all levels of mobility Vibrant, high-contrast pathways and tactile ground surface indicators greet those that enter the lobby, along with a bold, orange feature ramp to accommodate mobility devices of various widths. Quadrangle also included colourful, custom-designed way-finding elements throughout the building's hallways to provide clear navigation and branding throughout the space for those with visual impairments.

2.4.3 Accor Hotels "Smart Room

Accor Hotels operates in around a 100 countries, and has more than 4,800 hotels in its portfolio. Accor Hotels is using technology and design, to redefine the concept of an accessible hotel room. Gone are the clinical, hospital like rooms and in is clever Universal Design to create a stylish and practical solution that treats all guest on an equal footing. It is combined with modern technology to control the room's functions including window blinds, height adjustable beds, lighting and adjustable wardrobes (Travability, 2019).

Figure 2.18: Smart Room Accors Hotel (Source: www.travability.travel.com, 2020)

Taking Universal Design as their main concept, their goal is to inspire the hotel market by introducing a new approach to the PRM room, which is often unoccupied and not very welcoming or warm. The innovations featured in this new smart room include;

- A connected tablet to adjust the light and music (Devialet Phantom loudspeaker) to create the perfect atmosphere, close curtains, tilt the headboard and control audiovisual equipment
- A wardrobe with sliding shelves and rods for easy access to clothes
- LED lighting with footboard motion sensor facilitating movement at night
- A television positioned on a 180° swivel panel
- A bathroom equipped with an easily adjustable showerhead, a folding and adjustable shower seat, a height-adjustable washbasin (70 to 90 cm), designer grab bars doubling as towel rails, etc. (Travability, 2019).

2.5 Swahili Art and Culture

The Swahili people are a Bantu ethnic group and culture found in East Africa, mainly in the coastal region and the islands of Kenya, Tanzania and Mozambique. The Swahili population is around 1.3 million. They are mainly a mixed heritage having mainly African and Arab ethnicities. The Bantu ethnic group is a linguistic group of African people who trace their roots in Southern Nigeria and Cameroon: they are the most populous group in Kenya (70% of the total population). Swahili culture is the culture of the Swahili people living on the east coast of Tanzania, Kenya, and Mozambique as well as on the islands in the area, from Zanzibar to Comoros, who speak Swahili as their native language.

One common heritage shared by countries along the East African Coast is the Swahili language. But, Swahili is more than a language. Indeed it's a way of life that finds expression in language, art, culture, fashion, food, architecture as well as worldview. The word Swahili is almost synonymous with beauty and charm. From the finger licking food, the quaint architecture, the elaborate wood work, the colourful language to the intricate 'henna' patterns on the women's bodies, Swahili never fails to enchant. While it may be difficult to expose the whole spectrum of this culture, embracing and adopting a Swahili style in your home décor can transform your living space with an aura of serenity, sensuality and spirituality.

2.5.1 Swahili Architecture and Interior

One of Coastal area's many glories is its Traditional Swahili Architecture. Lamu's unique stone townhouses, many dating back to the early 18th Century, are celebrated for their intricately carved wooden front doors, imposing entrance porches and shady courtyards, the grandeur and elegance of their interiors and their beautiful decorative stucco plasterwork. Below are some of the common characteristics of Swahili architecture and design found along the Coast of East Africa (Traditional Architecture, 2020).

In Lamu – and all along the East African coast – all houses were constructed of coral limestone. And to this day almost all Lamu houses are still constructed from coral – most usually these days in the form of large 'breezeblocks' which are mined on nearby Manda Island. It is the ideal building material: light, strong and readily available, it improves with time – becoming harder and more homogeneous with exposure to rain and the tropical sun. Of course not every Lamu home can or should be an absolutely traditional and historically accurate stone townhouse – many houses now have *makuti*-thatched roofs (Traditional Architecture, 2020).

Supporting timbers were usually of strong tropical hardwood (today locally-harvested mangrove poles are often used). These beams were laid close together – usually just 8 to 10 inches (20-25 cm) apart – in order to support the heavy roof above. Each beam had a length of 10 to12 feet (3-3.5 metres); and it was the available length of these poles and the heavy weight of the roofs and ceilings they had to carry that determined the planning and design of every building in the region for many centuries. This has been called a 'dimensional straightjacket' to which all built spaces had to conform (Traditional Architecture, 2020).

The most wonderful decorative aspect of a traditional house was its wealth of elaborately carved stucco plasterwork, which grew in richness and complexity the further one entered into the private areas of the house. Traditional carved plasterwork took many varied and beautiful forms. The plasterwork was often particularly ornate – often featuring trifoliate arches similar to those found in the qiblas of local mosques. This plasterwork performed a variety of functions: most importantly it added a sense of perspective, beauty and depth to interiors that might otherwise have seemed very plain and uniform. It was also an important indication of the wealth and standing of the occupants of the house, and the elaborate zidaka niches in particular provided a spectacular backdrop for wedding ceremonies and for the formal viewing of the bride. Niches were also used as storage for the Koran and other religious texts, and for the display of precious Chinese and European porcelain and other ornaments. It is likely too

that the plaster decorations fulfilled other spiritual and religious purposes, and were seen as a way of protecting and purifying the house (Traditional Architecture, 2020).

Geometric designs, as well as floral patterns and leaf abstracts are the main elements in the decoration of all kinds of surfaces and items (Athman, 1996). This is evidenced by the presence of elaborate geometric patterns and motifs of Islamic art, Indian floral patterns and leaf abstracts on textiles, hand-carved doors, furniture, niches, chests, dhows, friezes, accessories and porcelain household items influenced by Persian and Chinese art in Swahili culture. Swahili art and design are primarily geometric which consist of repeated squares and circles which are overlapped to form intricate complex patterns. Swahili art consists of several patterns derived from different places with each having different shapes and forms such as Zanzibari, Siu, Bajuni, Indian and Arabesque.

2.6 Arabesque Patterns

Arabesque patterns which are derived from Islamic art are being used generously in Swahili art. Biomorphic art, (also known as Islimi, nebati, Arabesque) is one of the three distinct disciplines that underpins Islamic art (the other two being Calligraphy and Geometry). Islimi designs are biomorphic, floral patterns representing the underlying order and unity of nature (Williamson, 2008). Arabesque is a pattern of curving lines layered with intertwined elements like vine and leaves and abstract forms that don't resemble anything in nature. These patterns are usually found covering surfaces on buildings like mosques, domes, doors, ceramic tiles and glassware. It has three key elements in their composition;

- The eternal spiral- behind most designs there is a spiral through which motifs and leaves sprout from, this is a composition that consists of the filial patterns. The movement of nature inspires the unbroken flow of the spiral and these do not have hard corners; the curves are sweeping and gentle. The centrifugal movement represents the progression of the creator moving to infinity (Williamson, 2008).

Figure 2.19: Arabesque patterns (Source: www.vectorstock.com, 2019).

- Symmetry and structure – The patterns include a set of spirals drawn on a section which are then reflected and repeated to achieve symmetry which is important to a harmonious piece of art. It exemplifies completeness and perfection and the desire for unity (Williamson, 2008).

Figure 2.20: Symmetrical Lantern Arabesque patterns (Source: www.pinterest.com, 2019).

- Rhythm and balance- Arabesque patterns tessellate around the surface with an even rhythm and texture. Repetition and the heedful even arrangement of the motifs mold the designs in such a way as to appear to vibrate and oscillate evenly, undulating like the sea (Williamson, 2008).

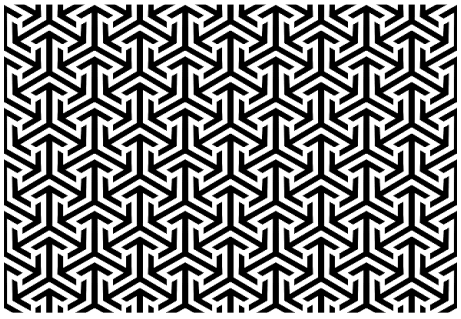

Figure 2.21: Arabesque patterns (Source: www.pinterest.com, 2019),

Figure 2.22: The picture shows Arabesque patterns on Swahili door in Lamu (Source: https://ilselasschuijt.com/contact/, 2019).

2.7 Design Exemplars

2.7.1 Claudio Modola

Claudio Modola is an Expeditionary, part time safari guide, and designer. He spent his time living in the bush and Africa before settling down in his newly renovated family home in Lamu, Kenya. One of Claudio Modola's famous works was the renovation of Peponi hotel in Lamu. Claudio has a vast interior design in this region and he incorporates Swahili art and design on the spaces including the use of Arabesque patterns and arched wall niches. Claudio's firm belief is that life should be endowed with beauty in all its form as possible

Figure 2.23: Peponi Hotel. Image (Source: www.pinterest.com, 2019).

2.7.2 Urko Sanchez

Urko Sanchez is an architect based in Nairobi, Mombasa working along Africa. Born and raised in Madrid, he took an interesting travelling at an early age and came to Lamu for a holiday destination. He instantly fell in love with Lamu. He then studies architecture in Spain and returned back to Lamu and designed several places. He eventually ended up staying in Kenya and making it his home. Urko has designed many houses inspired by Swahili design and he incorporates the stucco and vidaka on the interior walls of his works. Among his works include; Red Pepper House in Lamu, Tudor apartments, Lamu apartments, Gaba House in Lamu and Swahili dreams Apartments in Lamu.

2.7.2.1 His work; Red Pepper house in Lamu

Located on the island of Lamu towards the north end of the town, the plot is immersed in vegetation and bordered by the beach on its southeast slopes. In the Swahili architecture the makuti roof is used as a structure over the roof of the house or detached as a temporary construction (The Majlis Resorts, 2017). The white walls in the interior have been carved out at the top in small squares; each square with a carved out Arabesque pattern. This is the stucco plasterwork on the walls.

Figure 2.24: Red Pepper House, Lamu (Source: www.archidatum.com, 2019).

What's unique about the Swahili way of life is the diversity of its origins. A homogeneous blend of African (Bantu), Persian, Arabic, Indian, Chinese and European cultures, Swahili has

matured into a unique culture that has won admiration world over. In spite of its coastal legacy, Swahili has penetrated not just East Africa's inland but even further ashore. With its idyllic world view, it's no wonder that this culture is attracting droves of domestic and international tourists to the Kenyan, Tanzanian and Zanzibar coasts every year. While an annual visit to these destinations is definitely a rare privilege, bringing Swahili home and living it every day would be nothing short of Nirvana

2.7. 3 The Majlis, Manda Island

The Majlis hotel, a privately owned luxury beach hotel on Manda Island in the Lamu archipelago, off Kenya's Northern Coast, is a perfect blend of local tradition, Swahili culture, Western comforts, and luxury (The Majlis Resorts, 2017). There are rooms and villas while each villa was constructed making use of the archipelago's natural resources, combining white coral blocks with hand-carved timber. The walls of the hotel are intricately carved with arabesque patterns. Particular attention was paid to integrating the villas among the indigenous trees and plants, to enhance and to preserve the beauty of the local surroundings. The rooms are spacious with traditionally high beamed ceilings, large windows and terraces offering spectacular views of the beach, garden, swimming pools and the Indian Ocean. Tastefully designed and decorated with tailored fittings, all rooms evoke the East African heritage with doors and furniture hand-carved according to the local Lamu tradition (Luxury African Safaris, Coast & Luxury African Safaris, n.d)

Figure 2.25: Intricate carved walls of Majlis (Source: www.themajlisresorts.com, 2020), Figure 2.26: Majlis bedroom (Source: www.farandwild.travel, 2020).

Two ocean-fronting bars provide the ideal setting to enjoy a cocktail as the sun sets over the sandy beach. Built using local materials such as casuarinas, reclaimed wood for flooring, mangrove poles, and boasting a makuti thatch ceiling, the open fronted restaurant offers delicious Italian and Swahili inspired menus, created with only the freshest seasonal ingredients

Figure 2.27: The Bar and restaurant at Majlis (Source: www.eatout.co.ke, 2020).

2.8 Design Process

Design process thinking in general is well-defined as a creative and systematic process that engages a person in opportunities to experiment, create and prototype models, gather feedback and redesign (Razzouk, 2012). This process entails a procedure which includes steps to be carried out systematically to achieve a design form. The process involves a series of intensive and iterative steps and decisions which if clearly followed by the designer results into functional designed or redesigned product, service or system optimizing desired qualities such as safety, reliability, aesthetics, user-friendliness, environmental issues, functionality, durability and other costs (Chesaro, 2013).

Design is a creative process that occurs in many settings (Garrett, J, 1991). Having studies this, below are the steps the researcher undertook in redesigning the Bermuda Gardens Hotel.

1. Analyze the situation-Before beginning the design, sort out what problem you are trying to address. The researcher first visited the site and investigated on all the four thematic areas of Interior design to find any problem being faced by any of the users.

2. Write a brief-Write a short statement giving the general outline of the problem to be solved. The researcher jotted down the overall outline of the problem or need on a notebook for further investigation.

3. Research the problem- Sometimes a problem can be solved "straight out of your head," but in most cases you will need to gain some new information and knowledge. Once the problem statement was formulated, the researcher decided to use primary and secondary data to get information on the background of the problem. This includes application of methods of data collection such as face to face interviews with the users who are being affected by the problem; in this case the disabled, mothers and the aged.

4. Write a specification- This detailed description of the problem spells out what the design must achieve and what limitations will affect the final solution. The researcher sat down and came up with the main and specific objectives that she wishes to accomplish within the given period of time for the research. This further led to the birth of the research questions from the objectives and also the limitations the researcher will face undertaking the study. The researcher wrote down all this as his goals and precautions for the study.

5. Work out possible solutions- Combine your ideas with information obtained from your research to suggest several possible design solutions. Sketch several possibilities on paper. The researcher brainstorms his mind for all the possible proposed designs that could cater the needs of all users or eradicate the problem being studied.

6. Select a preferred solution- Decide which solution to develop. Although the chosen solution should, ideally, be the one that best satisfies the specifications, other constraints such as time, cost, or skills may limit the decision. The researcher chooses the best possible solution that will solve the problem and ensure all users will be satisfied.

7. Prepare working drawings and plan ahead- Draw the chosen design including all the details that are important to its construction. Here, all the sketches are drawn from rough to final detailed sketches that are interpretive and legible.

8. Construct a prototype- Make the product. In industry a model is usually built first and the final product is developed from it, but in most classrooms, the model is the final product. The

researcher creates prototypes to be able to test the solution and communicate the idea she was trying to bring out.

9. Test and evaluate the design- Testing is ongoing as the construction progresses, but a final test of the entire system or model proves if the project does the job for which it is designed. Look back at the specifications and check the requirements carefully. The researcher asks herself questions such as: How well does the design function? Does the design look good? Is the product safe to use? Were suitable materials used? How could I have improved on my design?

10. Write a report- The report provides evidence of your work in analysis, planning, designing, carrying out the practical work, evaluating, and communicating. The researcher wrote a project paper that is the documented report which included all the information gotten from the research of the problem.

2.9 Conclusion

Literature review is of utmost importance as it has given a clear picture of the research problem the researcher is working on for the study. It shows the background of that problem from a universal approach to a specific approach that has already been discovered. Review has also helped the researcher in getting inspiration for his/her work through the design champion and exemplars.

CHAPTER 3

3.0 RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The methods section describes actions to be taken to investigate a research problem and the rationale for the application of specific procedures or techniques used to identify, select, process, and analyze information applied to understanding the problem, thereby, allowing the reader to critically evaluate a study's overall validity and reliability (Richard H, 2004). This chapter's aim is to investigate on the problem statement linked to the Bermuda Gardens Hotel so as to tackle the objectives mentioned earlier and acquire answers to the research questions that arose. The researcher will gather the necessary data required through the chosen data collection methods that will be in line with the case study, analyze the data and lastly process the data into useful information through the data presentation methods settled on.

3.2 Research Design

According to Mugenda and Mugenda, a research design is a plan, structure and strategy of investigation so conceived to obtain answers to research questions. This is a procedural plan whereby the researcher adopts in order to answer questions validly (Rukwaro, 2016). The research design defines the case study type, research questions and constitutes the blueprints of data collection methods, the analysis of the data and the data presentation methods. Research design is usually done in two main approaches to investigate on the objectives of the study; qualitative research and quantitative research. The researcher decided to employ qualitative research method to accomplish the goals of the study undertaken. Qualitative research is more open and flexible and incase of any problem, it 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). This methodology includes collection of primary and secondary data that will allow receiving of information from the four thematic areas that is Interior architecture, Landscape, Furniture and Exhibition and Display. The main objective of this research will be to explore Arabesque Swahili patterns and how they can be integrated with Universal design in creating accessible and aesthetic interior and exterior spaces.

3.3 Population

A population is any set of individuals, cases or objects with common characteristics for example all the hotels in Nairobi will be the population according to the researcher. Target population is the entire population, or group, that a researcher is interested in researching and analyzing. A sampling frame is then drawn from this target population. The target population for this study is around 50 subjects which includes the staff and customers of the hotel. Sample population is a subset containing the characteristics of a larger population. Sample population is used for the study and data is obtained from them to represent the whole population. A smaller sample is usually easier and faster to manage although it has a disadvantage in that bigger samples often give more accurate data.

3.4 Sampling

This entails the process of selecting the individuals or case objects for observation and data collection according to a certain procedure. The population is too large to make inferences from hence sampling is carried out which consumes less time and is efficient. Sampling is the process of selecting a number of individuals for a study in such a way that the process of selecting a number of individuals for a study in such a way that the individuals selected represent the large group from which they were selected (Mugenda and Mugenda. 2003).

This research is being conducted using purposive sampling. A purposive sample is a non-probability sample that is selected based on characteristics of a population and the objective of the study. This type of sampling can be very useful in situations when you need to reach a targeted sample quickly, and where sampling for proportionality is not the main concern (Crossman, 2020).Purposeful sampling is generally used in case study research. Case studies are credited for allowing a collection of data from a large number of people and a rapid turnaround in data collection (Creswell, 2003). According to Babbie (1995), it is this capacity for wide application and broad coverage which gives the case study technique its great usefulness. In case study research the researcher selects a sample of respondents from a population and administers a standardized questionnaire to them (Sandeloweski, 2000). And it is possible to collect data from large or small population.

The table drawn out below shows the sample population of Bermuda Gardens Hotel. It indicates the staff, management, customers of the hotel and interior design students each showing the number of individuals chosen as subjects for the study with at total sample of 22 respondents.

Table 3. 1: Sample population for the study (Source: Researchers construct, 2019)

SAMPLE UNIT	NUMBER
Owner	1
manager	1
working staff	3
waiters and waitresses	3
customers/visitors	9
Interior designers	5
Total	**22**

3.5 Data collection Procedures

Data is any facts or information collected for reasoning and analyzing. It is the answer to the research problem. Data collection methods can be divided into three categories: primary, secondary and tertiary. Primary data is data collected from first hand that is data collected by the researcher himself while investigating. Secondary data is any type of data that has already been published in books, newspapers, magazines, journals, online portals etc. and tertiary data summarize or synthesize the research in secondary sources for example, textbooks and reference books. The following paragraphs below talk about the data collection methods that researcher uses to gather data for the study;

3.5.1 Interviews

Interviews is one of the most popular methods of data collection. It involves an interviewer and one or more interviewees where the interviewer is asking the other questions to get answers to the research problem. As Pauline V Young pointed out that the objectives of the interview may be exchange of ideas and experiences, eliciting of information pertaining to a very wide range of data in which the interviewee may wish to rehearse his past, define his present and canvass his future possibilities (Francis, 2012).

Face to face interviews are most appropriate for this study because of the freedom to decide the form and content of the questions to be asked of the respondents, choosing the wording of

the questions, the order and what way to ask them. This process of asking questions can be either very flexible, where the researcher will have the freedom to think about and formulate questions as they come to mind around the issue being investigated during the interview, or inflexible, where the researcher will have to strictly stick to the questions decided beforehand including their wording, sequence and the manner in which they are asked.

Interviews are classified into different categories according to this degree of flexibility and so the researcher will use both structured and open interviews depending on the content being collected and the respondent (Leedy and Ormrod, 2013). Structured or closed interviews are carried out using survey forms while open interviews are when notes are taken down while talking to the respondents. Both types of interviews can be face to face and for this study, face to face interviews deem best as gestures can help in obtaining more information. Open interviews will be dominantly used in this research where the researcher will prepare a list of questions to ask the respondents chosen and write down the information received.

3.5.2 Observation

It is probably the simplest form of data collection. As the name implies, it is a way of collecting data through observing. It is classified as a participatory study, because the researcher has to immerse himself or herself in the setting where the respondents are, while taking notes or recording by using the eye as a witness. Observation is classified in to two; participant observation and non-participant observation. The researcher will take up non-participant observation for this study where there will be learning and observing actual processes without having to get involved with the population under study. The researcher will make detailed notes of what is being observed by only jotting down what is relevant to the study. Advantages of this method include direct access to research facts, high levels of flexibility in terms of application and generating a permanent record of phenomena to be referred to later. The main disadvantage of this method is that the data can be biased if one is not careful (Kumar, 2011).

3.5.3 Photography

Photographs can be communication bridges between strangers that become pathways into unfamiliar, unforeseen environments and subjects (John Collier and Malcom Collier). Photographs provide visual images of experience that challenge the researchers to search for language to describe them. They are also a sincere and unbiased form of collection as they capture the reality and facts of the study and not mind-formed assumptions. Photography will be used to capture diverse spaces of the environment to present a real time visual illustration

of the data. Photography will also serve as a recording tool of the current state of the site of study (Gaskell, 2000). Therefore, the researcher will capture pictures of the site and the conditions of the site area.

3.5.4 Focus groups

It is a form of data collection method in qualitative research in which attitudes, opinions or perceptions towards an issue, product, service or program are explored through a free and open discussion between members of a group and the researcher (Kumar, 2011). The participants of a focus group are selected based on their relevance and relationship to the topic under study. This method will involve the researcher selecting around five interior design students and holding a focus group discussion with them to explore and concentrate on the objectives of the study. Focus groups are very flexible and have high face validity, meaning that it measures what it is intended to measure. It also generates quick results and conduction costs are very low. However, if the discussion is not carefully integrated, one or two of the participants might dominate the whole discussion with their opinions.

3.6 Data Analysis Tools

Data analysis can be elaborated as a process of developing answers to questions through the examination and interpretation of data collected by the researcher. According to Burns and Grove (2011) data collection and data analysis occur simultaneously in qualitative research, as the emerging results may require further data collection. Data is first planned and organized before it is collected, cleaned, and processed then made ready for Analysis. As you manipulate data, you may find you have the exact information you need, or you might need to collect more data. During this phase, you can use data analysis tools and software which will help you to understand, interpret, and derive conclusions based on the requirements. Analyzing is done to the core to make interpretations. After getting all the information, the researcher then interprets it into reports. There is great emphasis that data analysis takes the following procedure:

- Obliteration of any useless data
- Interpretation and clarification of obscure answers
- Sorting out any contradictions in answers given
- Incomplete answers are eradicated.

The analysis tools used by the researcher to analyze the data are content analysis which consists of narrative, interpretive and descriptive analysis. Content analysis is the procedure for categorizing verbal and behavioral data for purpose of classification, summarization and tabulation. Content analysis can be carried out through two levels which is descriptive analysis, which means getting data through describing a photograph and the information that it emits. Interpretive analysis means to interpret what the data meant, like the meaning behind the notes written during observation while narrative analysis deciphers experiences that have been described or said during interviews and focus groups.

The information from the interviews and focus groups will be analyzed through content and narrative analysis and the notes jotted down during observation will be analyzed through interpretive analysis. Photographs will be captured to integrate descriptive analysis which influences the design process and also forms part of the solutions to the research questions in the research.

3.7 Data Presentation Methods

Presentation of data includes the pictorial representation of the data by using graphs, charts, maps and other methods. These methods help in adding the visual aspect to data which makes it much more comfortable and quicker to understand. Data well-presented and executed helps in understanding the results of the research conducted and makes use of already existing studies to obtain new results. The following are the suitable presentation methods for this study:

3.7.1 Tabulation

Tables are devices for presenting data simply i.e. raw data presented in rows and columns. Tabulation condenses a huge amount of data and brings out the distinct pattern realized in the data in an attractive form. Tables are used for small datasets hence are very precise, show all data and take up less space compared to interpreting data in interpretive form .They also enable comparison to be made easily among classes of data. A table has the following contents: a title at the top describing the content of the table; the caption column heading; the subs-row headings; footnote-brief explanatory information about the table, which is not self-evident; units of measurement (Maina, 2012). The tables will represent the data accumulated from the interview guides and focus groups.

3.7.2 Pie chart

It presents data as a percentage of the whole in segments within a circle. The area of each segment depends on the circle. It should not surplus 3-7 categories. Pie chart usually summarize

large amount of data in visual form and are simpler compared to other types of graphs. Data collected from the interviews will be presented using a pie chart to show the variations and similarities among the few individuals that were part of the interview process. The individual observation will also be presented this way.

3.7.3 Photographs

Photographs refers to the use of images to communicate a meaning towards people. They are an ideal method since they are more visual and hence will give clearer information about the case study. Photographs are primary data collection and these will be presented photographically and supported with detailed information to show a clear, comprehensive and pictorial nature and its relevance to this research. The researcher will utilize the photographs to highlight information on the site that may not have been captured and described in writing.

3.7.4 Narrative

This is the situation where the researcher interprets stories that are told within the context of the research and are shared in everyday life. Narratives are a way of understanding human experience through stories that in turn help people better understand the human phenomena and existence. Notes taken down within the focus group meetings and field notes observation method will be analyzed and presented in narrative form.

The way the data is analyzed and presented for any given case study in any given field could be a deal maker or deal breaker as it is what makes people understand the results of the study undertaken.

Table 3. 2: Logical Framework (Source: Researchers construct, 2019)

Objective 1: To find out the existing design applied at Bermuda Gardens Hotel				
Data Needs	**Data Source**	**Data collection tool**	**Analysis method**	**Expected output**
Exploring the current designs at Bermuda Gardens Hotel and analyze if Universal design and any	Owner, Staff, Site.	Interview, Non-participant observation, photography	Narrative analysis, Interpretive analysis, Descriptive analysis	Knowledge about the existing design of Bermuda Gardens Hotel and realizing the problems that need to be solved.

African theme have been applied				
Objective 2: To explore the ways in which universal design can be incorporated within the interiors and exteriors of the hotel to improve on accessibility to all users				
Data Needs	**Data Source**	**Data collection tool**	**Analysis method**	**Expected output**
Design process	Books, Journals, Interior designers	Literature review, Focus group	Content Analysis Narrative analysis.	Knowledge on how to conceptualize a hotel design for the interior and exterior spaces using Universal design to make it accessible.
Objective 3: To come up with the desired Arabesque patterns used in Swahili art that will bring out the African feel in the contemporary design world.				
Data Needs	**Data Source**	**Data collection tool**	**Analysis method**	**Expected output**
Gather data on the various arabesque patterns used within Swahili design	Books, Internet, journals	Literature review	Content analysis	Acquire the specific Arabesque patterns that are desirable in bringing out the African feel.

3.8 Conclusion

The researcher investigated ways in which Arabesque patterns and principles of Universal Design can be integrated in creating an accessible environment. This section focused on obtaining information through the selected data collection methods, analyzing the data and presentation of the data.

CHAPTER FOUR

4.0 SITE ANALYSIS, PRESENTATION AND INTRERPRETATION OF FINDINGS

4.1 Introduction

This chapter will comprise of the analysis, presentation and interpretation of the gathered data. It will start off with analysis of the site which will entail the profile of the site, structure of the site, geographical location, climatic conditions, typography and vegetation cover. The researcher will also give the visual and interpretive analysis of the data collected through photography and observation respectively. The data that will be collected from face to face interviews and focus groups will also be analyzed through narrative analysis followed with presentation of the findings through pie-charts and tables. The researcher will use qualitative analysis to get the necessary data which will be interpreted according to the four thematic areas of Interior design; Landscaping, Interior Architecture, Furniture and Exhibition and display.

4.2 Site Analysis

4.2.1 Profile of the site

Figure 4.1: Bermuda Gardens Hotel Ariel view (Source: www.googlemaps.com, 2020).

Bermuda Gardens Hotel is an affordable bed and breakfast country-style hotel that started in 2007 in Nairobi. The building structure that is presently Bermuda Gardens Hotel was previously a colonial restored house located in a quiet neighborhood. The hotel includes normal and deluxe rooms, a bar/restaurant, reception-office, outdoor garden and terrace. The hotel also offers a full English/Irish or vegetarian breakfast.

4.2.2 Geographical location

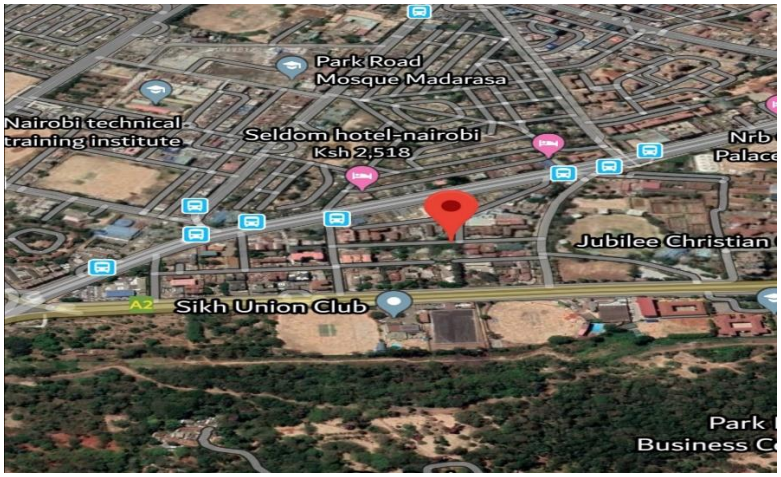

Figure 4.2: Map showing location of Bermuda Gardens Hotel (Source: www.googlemaps.com, 2020).

Bermuda Gardens hotel is located in Soit Ololol Rd, off Desai Ed, Starehe in Nairobi County. It is situated 0.5Km from the centre of Ngara East and the 6Km from Wilson airport which is the nearest airport. It is just opposite the Gymkhana Cricket Club and is accessible to all major sections of the City. The hotel is built on about 1104 square metres land which 46m by 24m.

4.2.3 Hotel structure

Figure 4.3: Bermuda Gardens Hotel (Source: www.bermudahotelnairobi.com, 2020)

Bermuda Gardens hotel is a structure that consists of normal and deluxe guest rooms, a bar/restaurant, reception room and a terrace. The landscape consists of an outdoor garden area facing the restaurant and a parking area with a gatehouse. The researcher covered the

bar/restaurant, reception room and the landscape. The hotel is built with basic building materials such as concrete, natural stone, wood, metal and glass.

4.2.4 Climatic conditions

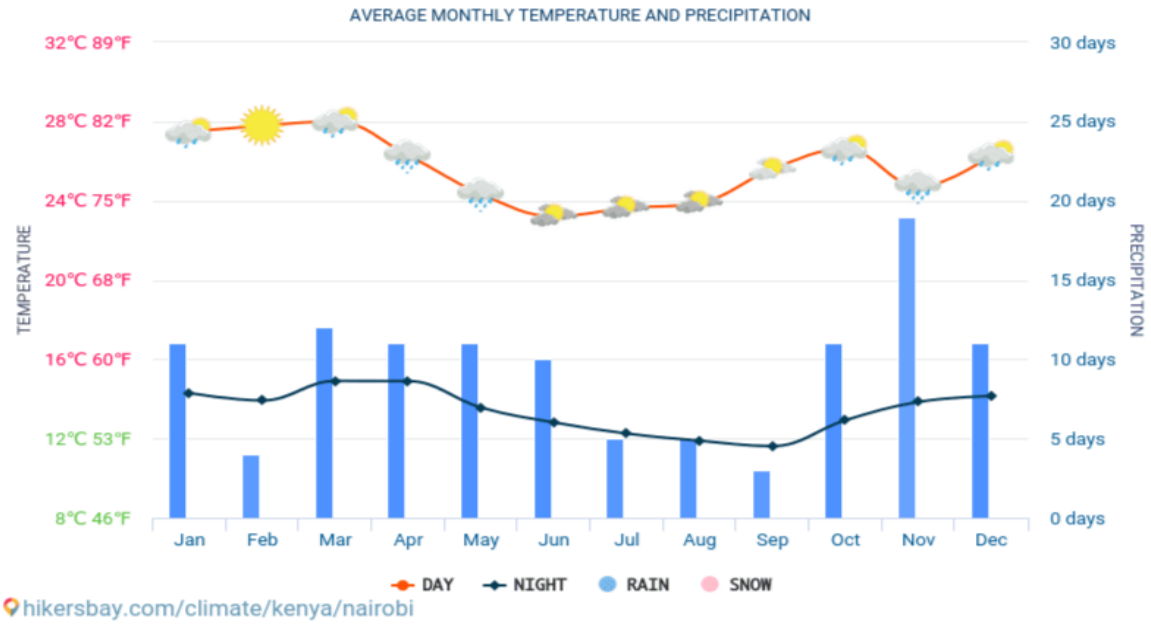

Figure 4.4: A graph showing average temperatures of Nairobi (Source: www.weatherspark.com, 2020).

The Bermuda gardens hotel presumes the climate of Nairobi which is mostly cool throughout the year as shown in the graph. The warm season lasts from around January 24th to March 26th with average daily high temperatures of above 79°F while the cool season lasts from June 4 to August 24, with an average daily high temperature below 73°F (Weather Spark, 2020).

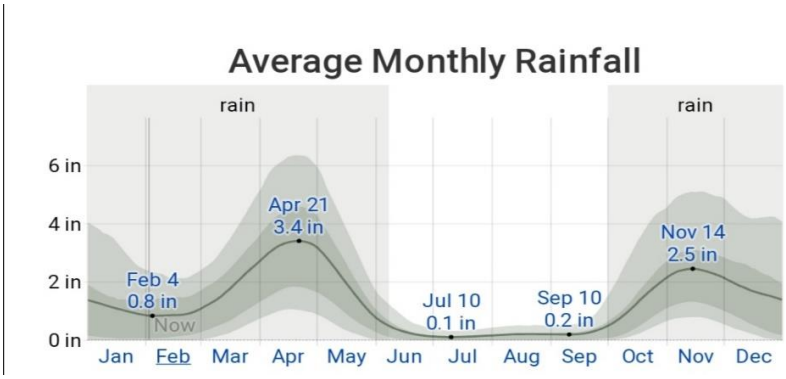

Figure 4.5: A graph showing average rainfall of Nairobi (Source: www.weatherspark.com, 2020)

Nairobi experiences significant seasonal variation in monthly rainfall. The rainy period of the year lasts for 8.2 months, from September 30 to June 7, The most rain falls during the 31 days centered around April 21 .The rainless period of the year lasts for 3.8 months, from June 7 to September 30. The least rain falls around July 10 (Weather Spark, 2020).

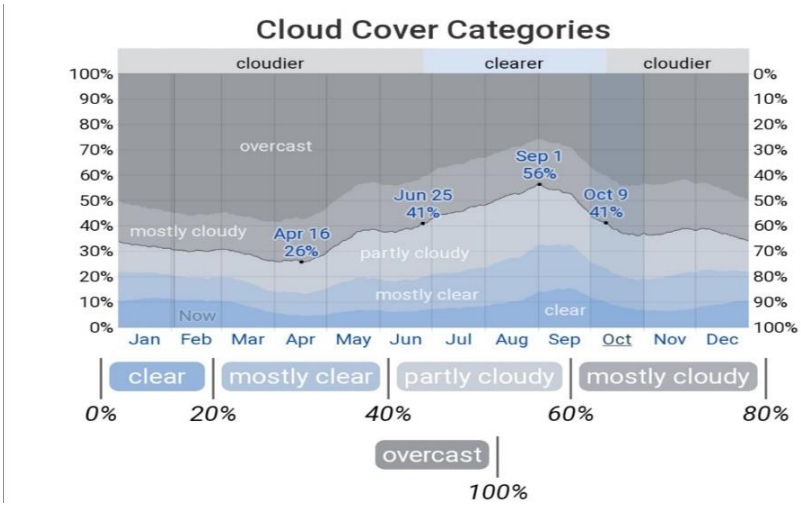

Figure 4.6: A graph showing average cloud cover of Nairobi (Source: www.weatherspark.com, 2020)

In Nairobi, 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 Nairobi begins around June 25 and lasts for 3.5 months, ending around October 9. The cloudier part of the year begins around October 9 and lasts for 8.5 months, ending around June 25 (Weather Spark, 2020).

4.2.5 Topography

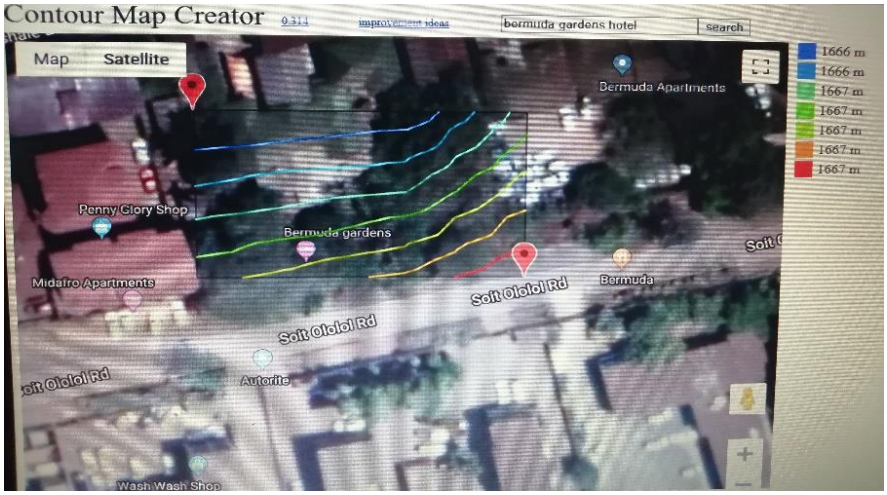

Figure 4.7: Maps showing the contours of Bermuda Gardens Hotel (Source: www.contourmapcreator.com, 2020)

The Bermuda Gardens hotel lies at about 1.26°S and 36.82°E. The site is fairly flat with the site lying 1666m to 16667m above the sea level.

4.2.6 Vegetation

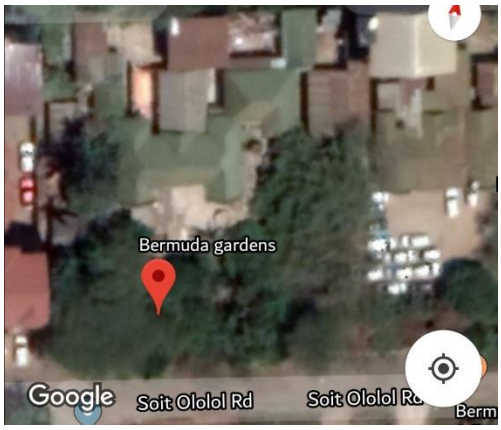

Figure 4.8: Vegetation cover (Source: www.googlemaps.com) and trees at the site (Source: Abbas, 2019)

The vegetation in the site includes trees, plants, shrubs, grass and some potted plants. As seen in figure 4.8, the site is mostly surrounded by the eucalyptus tree and neem tree. The neem tree also known as ‘mwarubaini’ is evergreen hence the site has greenery throughout the year. The major trees and plants found at the landscape area of the site are; neem, eucalyptus, Thika oak, Palm tree, acacia, strawberry plant and Jerusalem flowers.

4.3 Descriptive and Interpretive Analysis Of Existing Design

Descriptive analysis has been employed to analyze photographs and interpretive analysis to analyze the observations made by the researcher during the study of the site. From the data collected within the research period, it is safe to say that Bermuda Gardens hotel has not integrated any aspects of Universal design and hasn't incorporated any use of sustainable material in its design throughout its structure and landscape. It's interior and exterior design is visually unappealing and boring in that it doesn't have a specific theme nor has an African aspect. It has only incorporated some use of Swahili design materials such as the 'Makuti' in the outdoor garden seating.

4.3.1 Landscape Analysis

The landscape consists of the outer landscape and the inner garden area. The outer landscape is accessed from the main gate entrance to the hotel which consists of the gate house, car parking area, trees and potted plants. The inner landscape which is the garden area faces the bar/restaurant and consists of an outdoor seating area, trees, plants, shrubs, grass, a dried up pond and sculptures. The parking area has cabro which is quite damaged and has missing slabs which can cause problems for cars, the guests especially the aged and the disabled.

Figure 4.9: Entrance gate (Source: Abbas, 2019), Figure 4:10: Gatehouse of Bermuda Gardens hotel (Source: Abbas, 2019).


Figure 4.11: Car parking area after entrance (Source: Abbas, 2019), Figure 4.12: Car parking area after entrance (Source: Abbas, 2019)

Bermuda Gardens Hotel's landscape lacks some basic features that are required in hospitality design which include;

4.3.1.1 Lack of proper signage

The landscape lacks proper signage at the entry and within the hotel making it difficult for the visually impaired. The signage at the main gate is quite small and inconspicuous while the building structure doesn't have any signage to show what structure represents what area. The parking area also lack demarcation marks.

4.3.1.2 Cluttered and inaccessible layout

The garden area has cluttered its outdoor seating and a lot of sculptures placed randomly making it inconvenient and inaccessible to some users such as those on wheelchairs and mothers with baby strollers. The area has not incorporated any rails for support for the disabled while the walkways are very narrow.

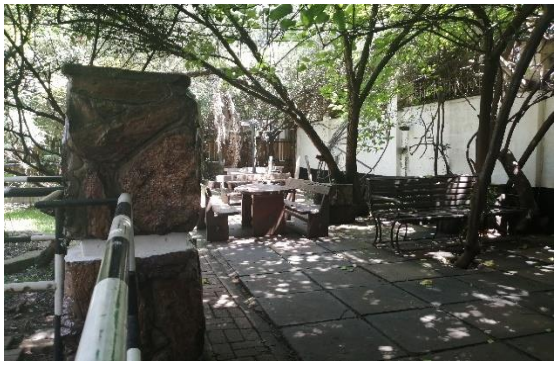


Figure 4.13: Cluttered outdoor seating with wooden benches (Source: Abbas, 2019), Figure 4.14: Makuti shade (Source: Abbas, 2019).

4.3.1.3 Lack of outdoor lighting

The garden area lacks outdoor lighting hence making it inaccessible to use at night while the front landscape consists of only one bulb under one of the trees.

4.3.1.4 Wreckage of present Landscape features.

The garden area's grass is quite damaged while the stone pavers that have the trees planted inside are half broken making it look very unattractive. There is a small pond near the sculptures but it has no water in it giving it an appearance of an ugly hole.

Figure 4.15: Damaged grass area (Source: Abbas, 2019), Figure 4.16: Dried up pond in the garden area (Source: Abbas, 2019).

4.3.1.5 Absence of tactile indicators.

The landscape lacks any tactile indicators to help guide the visually impaired in moving around without any assistance.

4.3.2 Interior Architecture analysis

4.3.2.1 The walls

The interior walls of the restaurant and reception room are made of stoned wall, blue gum wood, mahogany and concrete. There is different textures and different types of wood making it look non uniform. Part of the wall is painted a dirty orange and the stoned wall is damaged in some specific areas making it look unappealing. The walls in the restaurant look plain and old as there is no adornment such as artworks and patterns apart from one piece. The door leading to the restaurant has a faulty handle making it hard to open and there is no railings to support the disabled and aged.



Figure 4.17: Dirty orange painted wall (Source: Abbas, 2019), Figure 4.18: Blue gum wood and stoned wall (Source: Abbas, 2019), Figure 4.19: White painted concrete wall (Source: Abbas, 2019).

4.3.2.2 Ceilings

The interior of the restaurant and reception have a stucco white rough ceiling which is peeling off at some areas due to the moisture from the rain water making it look unappealing. The water is seeping from the top and into the interior hence damaging the ceiling.

Figure 4.20: White stucco ceiling (Source: Abbas, 2019).

4.3.2.3 Flooring

The flooring of the interiors is horizontal mahogany wood. Mahogany wood is a hardwood and quite durable but the wood has become old, dirty and dusty.

Figure 4.21: Mahogany flooring (Source: Abbas, 2019).

4.3.2.4 Lighting

The restaurant and reception have quite many windows in its interior hence there is usually adequate daylight seeping in during the day, however there are only three wooden lamps with fluorescent bulbs to provide light during night time. Also during the day the windows are always covered with light curtains blocking some of the sunlight, which makes it look quite dark and gloomy. This poses a problem for all the users especially those with visual problems.

Figure 4.22: Wooden lamp interior lighting with fluorescent bulb (Source: Abbas, 2019), Figure: 4.23 Glass and wooden windows for natural lighting (Source: Abbas, 2019).

4.3.3 Furniture Analysis

The hotel has a variety of furniture ranging from tables, chairs, sofas, bar stools, reception desks and seating, barrels, coffee tables and exhibition display tables. The materials and design of each furniture is different hence making it look non-uniform and thus losing its harmony and sense of identity. The materials include; mahogany, blue gum, cypress, metal, leather and glass. Most of the furniture are plain and boring without any design making it unaesthetic; some of the sofas have white leather which makes them get dirty faster due to the dust. The other main problem adding to the chaos in its furniture design is the cluttered layout. There is a lot of furniture and some are quite large which cannot be accommodated by the limited space in

the restaurant. This poses a problem of mobility within the area by users such as those on wheelchairs, aged and mothers with baby strollers.

Figure 4.24: Wooden furniture layout in the reception area (Source: Abbas, 2019), Figure 4.25: Wooden furniture and leather sofas within the Bar/restaurant (Source: Abbas, 2019)

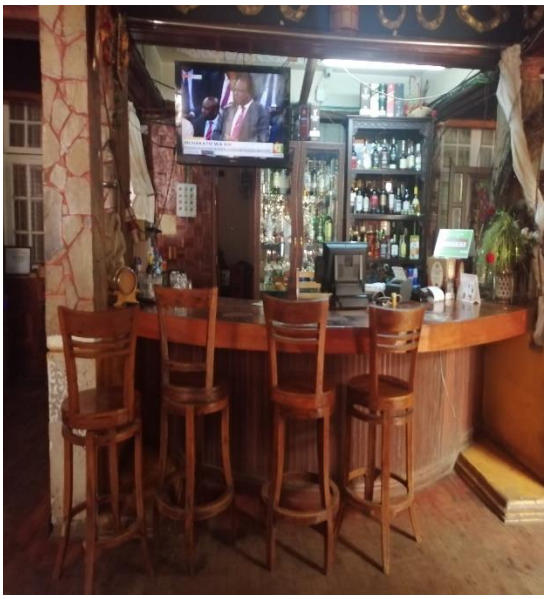

Figure 4.26: Cluttered furniture layout (Source: Abbas, 2019), Figure 4.27: The bar area with the bar stools within the bar/restaurant (Source: Abbas, 2019).

4.3.4 Exhibition and Display analysis

The exhibition and display is present in the reception area. The reception lacks any signage of signifying the place nor does it show any corporate identity of the hotel. The exhibition and display present in the room is a few huge metal barrels holding miniature figurines which is utilizing a lot of space, a piano, some indoor plants, two wall paintings which are quite old,

two small display tables with flower vases and a round reception desk. There is not much exhibition and display giving it a very boring vibe with no identity of the hotel.

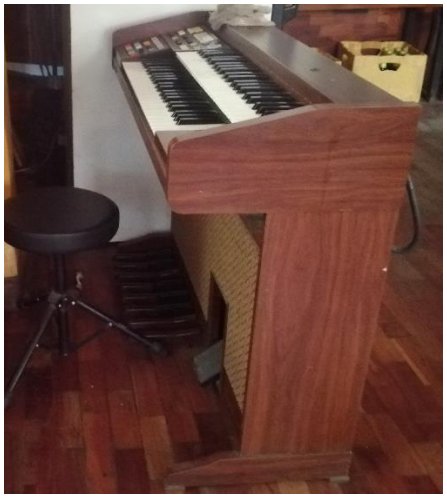


Figure 4.28: Metallic barrels as display (Source: Abbas, 2019), Figure 4.29: Piano unit (Source: Abbas, 2019), Figure 4.30: Wall painting within the reception area (Source: Abbas, 2019).

4.4 Narrative Analysis of Feedback

This method of analysis has been employed to analyze data collected from face to face interviews and focus groups. Having collected data from the face to face interviews and focus groups from the population sample of 22 respondents based on the questions present in the interview guide and focus group guide, the researcher converted the feedback into narrative form. The interview done with the owner of the hotel, Mr. Kaleb, he was inquired about the inspiration or idea behind the design of the hotel and it is evidenced in his feedback that the hotel was not designed with any specific inspiration or theme. A few aspects of Swahili design that is African is applied in its outdoor seating in the landscape such as the 'makuti' but not within the interiors of the hotel while Universal Design is not applied throughout the hotel. This response is assumed to be correct from the data collected through the photographs and non- participant observation and face to face interviews. Around one person from the 22 respondents was able to associate the hotel with an African attribute or theme while none of the 22 respondents could associate the hotel with any specific inspiration or design philosophy. This is further backed up by the response from the focus group consisting5 interior design fresh graduates whose opinion is almost similar after having a look at the photographs of the site. They also concluded that there was no connection of any design inspiration or philosophy in the making of the interior and exterior spaces of the hotel.

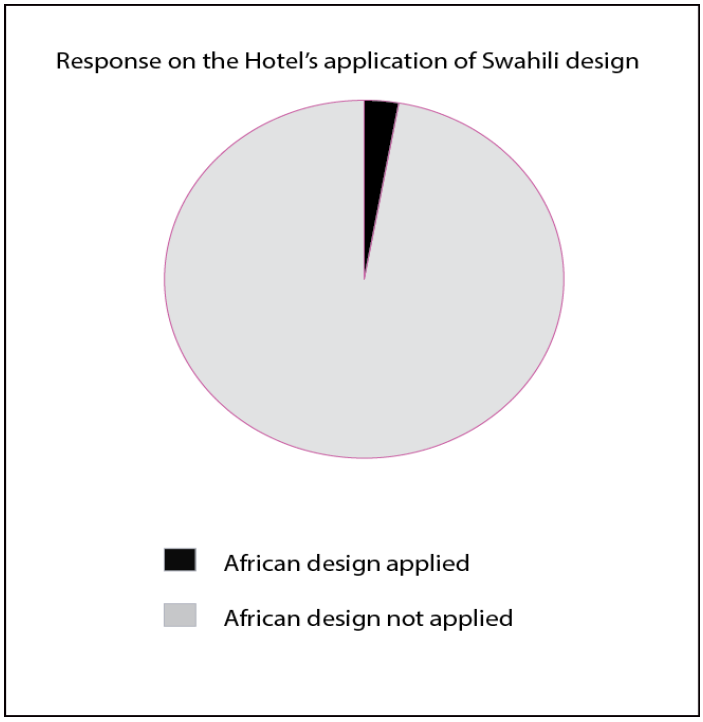

Figure 4.31: Pie-chart illustrating response to Application of Swahili design (Source: Researcher's construct, 2020).

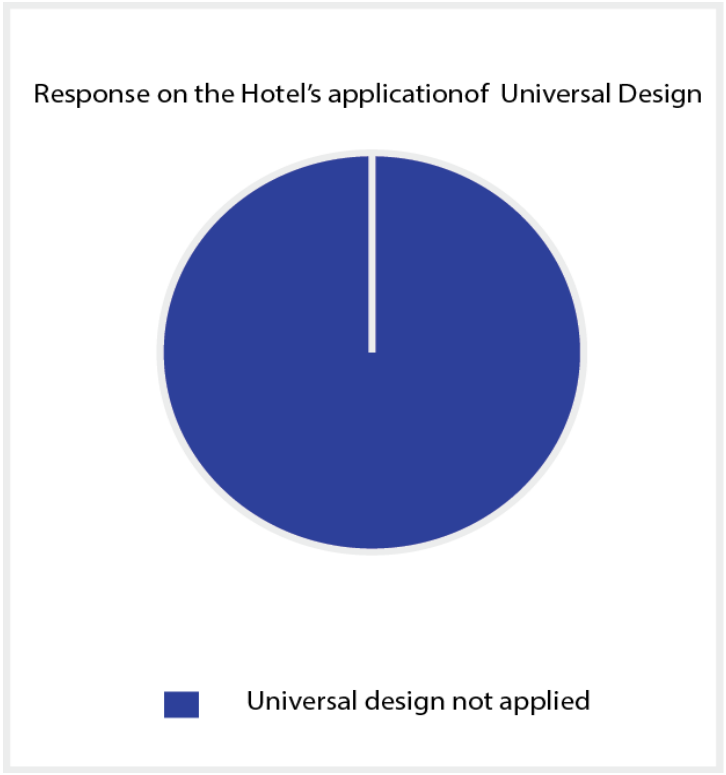

Figure 4.32: Pie-chart illustrating response to application of Universal Design (Source: Researcher's construct, 2020).

The researcher familiarized the respondents with the concept of Universal design, its principles and how a designer can incorporate it within the interiors and exteriors of the hotel to create accessible built environment. The hotel owner and manager were more than happy with the idea since they usually have guests on board that are disabled, the aged and mothers with baby strollers. 13 more respondents joined hands in supporting the idea; among them being 6 staff members and 7 customers of the hotel, three respondent didn't support the idea by justifying himself that Universal Design is not necessary while the rest couldn't absorb the whole concept of Universal Design and hence unsure. The information is shown below in a tabular form:

Table 4. 1: A table illustrating the response to the application of Universal Design (Source: Researchers construct, 2020).

Response on the hotels application of Universal design	
Number of Respondents	Response
15	Support
3	Do not support
4	Maybe

The researcher introduced arabesque patterns derived from Swahili art and Islamic art, showed how it can be integrated within the interiors and exterior spaces images of the desired patterns and the respondents gave their opinion on the use of the desired arabesque patterns as the inspiration of the interior design. The owner was first skeptical about some patterns but in the end supported the idea since it would give an aesthetic appeal to the place and an African theme. 16 more respondents joined hands with the idea of the arabesque patterns and Swahili art, 3 respondents did not support saying the patterns looked too complicated and two were unsure as they thought it might give the place an aesthetic appeal and at the same time be tricky to choose what patterns would suit best. The table below shows the information discussed above:

Table 4. 2: A table illustrating the response to the application of Arabesque patterns (Source: Researchers construct, 2020)

Response on the Hotels application of Arabesque patterns	
Number of respondents	Response
17	Support
3	Do not support
2	Maybe

After bringing in the desired color palette for the exterior and interior spaces which is hues of pastel pink, greys, turquoise and black inspired by the pink sands and stormy sea of Bermuda Island and providing images of interiors that have incorporated such a color palette, the respondents gave in their contribution on the colour palette. The owner supported the idea by saying that it has a balance of bold and pastel colours hence giving a dreamy feeling. 16 more respondents agreed with the idea as it would bring out the aesthetic feel and 3 respondents refused to support the color palette saying that the colours aren't going well together. The pie chart below illustrates the information narrated:

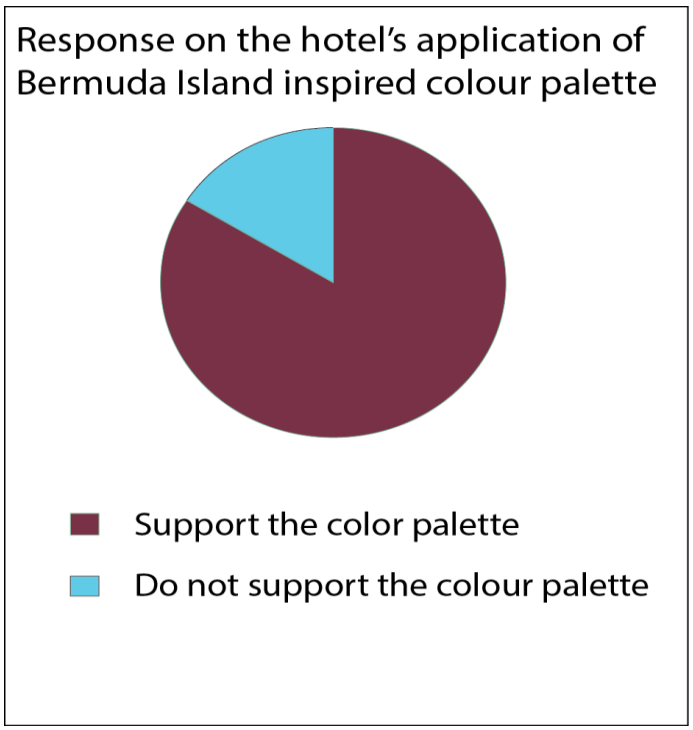

Figure 4.33: Pie-chart illustrating the response to the colour palette (Source: Researchers construct, 2020).

4.5 Conclusion

From the analysis above, it is safe to say that Bermuda Gardens Hotel has not incorporated any specific theme, idea or philosophy in its design. Hotel premises usually receive all kinds of guests hence it is evident that the hotel has many opportunities to incorporate Universal design in its design for creating accessible built environments especially for users such as the disabled, the aged and visually impaired. From the findings, it is also clear that the hotel should embrace Swahili design and its arabesque patterns to bring out the African aesthetics within the interiors and exteriors.

CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter commences with a summary of the findings of the data analyzed in the previous chapter and the recommendations that can be implemented to Bermuda Gardens Hotel. The recommendations shall be discussed according to the four thematic areas of Interior; Landscaping, Interior architecture, furniture and exhibition and display. All data gotten is based on facts established by the researcher after applying the research methodology as stated in the third chapter of this project paper. The following recommendations shall pave a way forward to employ Universal Design that that ensures accessibility of areas and borrow inspiration from the Arabesque patterns of Swahili design. Designing a user-friendly hotel that can be accessible by all users, disabled or not disabled should ensure its comfortable, mobile and usable and the UD features should be blended in well within the hotel so as not to make the disabled users feel inferior. There should be no visual difference and aesthetically pleasing to all.

5.2 Summary of Data Analysis

According to the research conducted, Universal design has been a trending topic of discussion in the design world for the past decades nevertheless, very minimal implementations have been carried out in the built environment. Universal Design is slowly being accepted and appreciated as the worlds percentage of disabled people keeps increasing and hence the need to make accessible environments. Swahili culture and design on the other hand has very beautiful intricate patterns such as arabesque which also gets its inspiration from Islamic art.

Bermuda gardens hotel has not considered Universal Design in its design at large. The interiors have a lot going on, a lot of clutter (cluttered furniture), use of variety of material's creating disharmony within the place. There is a lot of damaged walls and ceilings giving an overall look that is unpleasant to the eye. The landscape lacks UD features such as large and conspicuous signage, tactile pavements and proper layout of seating. The hotel manager was willing to implement UD and the desired arabesque patterns within the hotel premises to create an accessible and aesthetic bed and breakfast hotel. This will help all users enjoy their experience as each user's needs will be catered for.

5.3 Recommendations

The researcher gathered some very valuable and authentic information on Universal design, accessibility, Swahili design and arabesque patterns mainly from secondary sources and how that can be applied in the hospitality industry such as hotels, in order to achieve the objectives of this research study report in the four fields of Interior Design; Interior architecture, furniture, exhibition and display and landscaping.

5.3.1 Interior Architecture

The researcher understands that the first impression in the hospitality industry is everything; it is what a guest takes home with him/her. She wants the bar/restaurant interiors theme to be recognizable; that is Arabesque patterns and some aspects of Swahili design at first glance and if the user can't recognize the patterns then he or she should at least feel like they have entered a totally new African realm. The elements of interior architecture considered are; colour schemes, walls, floors, ceilings and lighting. The following are the recommendations on the elements of the interiors of the restaurant;

5.3.1.1 Colour Scheme

The colour palette will range from pastel pinks to hues of grey, black and turquoise. Since the hotels name is Bermuda, I got inspiration from the pink sandy beaches of Bermuda (an island in the North Atlantic Ocean). The pink hues derived from the sand and coral, the greys and turquoise from the stormy sea will make up the palette.

Figure 5.1: Bermuda inspired colour palette (Source: www.pinterest.com, 2020.

5.3.1.2 Wall treatments

The researcher recommends that all the walls to be made of coral and limestone imitating the Swahili architecture and the columns within the restaurant to be reclaimed oak wood. For the accent wall, use of Swahili metallic finishes to bring out the wall with a wall niche at the centre to place hotel signage. Also, incorporation of stucco plasterwork on the top of the walls with arabesque patterns imitating the Swahili interiors in Lamu

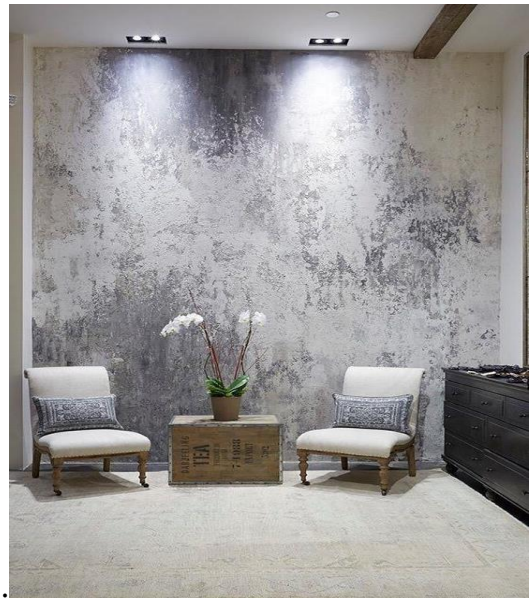
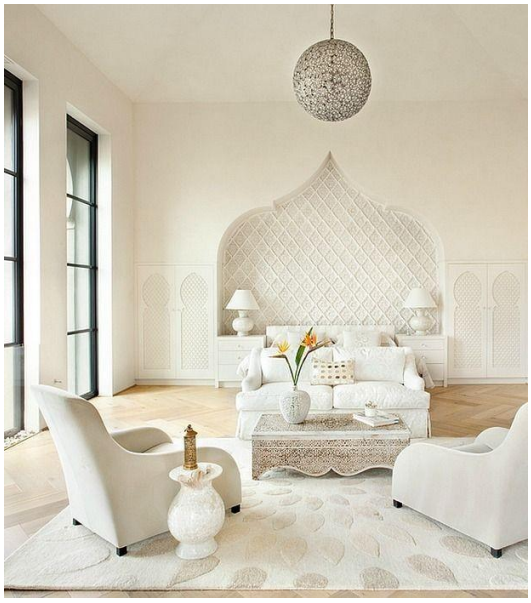

Figure 5.2: Swahili metallic finishes (Source: www.classic-mouldings.com, 2020), Figure 5.3: Wall niche (www.pinterest.com, 2020).

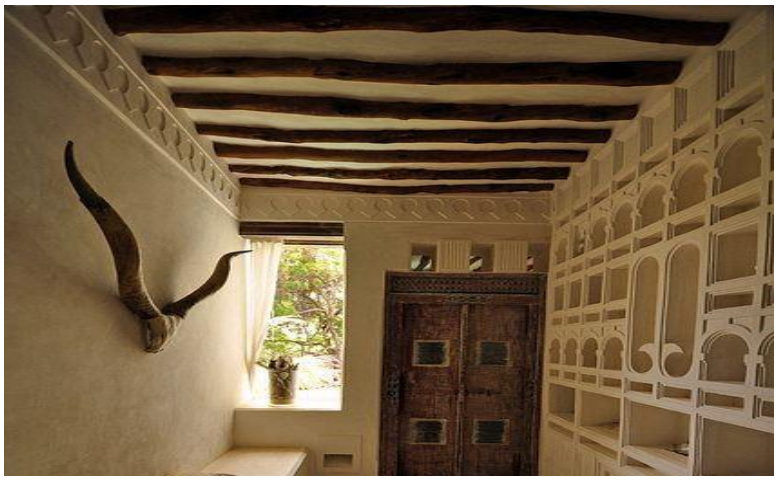

Figure 5.4: Coral stone and limestone wall with stucco plasterwork (Source: www.pinterest.com, 2020)

5.3.1.3 Flooring and ceiling

Grey reclaimed oak wood flooring can be a good option for the restaurant and hotel room area since it is durable and sustainable

Figure 5.5: Reclaimed oak wood flooring (Source: www.pinterest.com, 2020).

The researcher suggests that the present damaged white rough stucco ceiling to be repaired and be supported with turquoise painted bamboo poles as a substitute for mangrove poles since bamboo is a sustainable material. This is usually found in the Swahili houses found along the Coast.

Figure 5.6: African heritage house with mangrove poles in the ceiling (Source: www.africanheritagehouse.info.com, 2020).

5.3.1.4: Lighting

The interior lighting is very dim hence the researcher suggests incorporation of arabesque patterned interior lighting that will be placed at strategic places so as to cater for the mobility of all users such as the visually impaired. The 3D signage and the wall niches will be secured with cove lighting

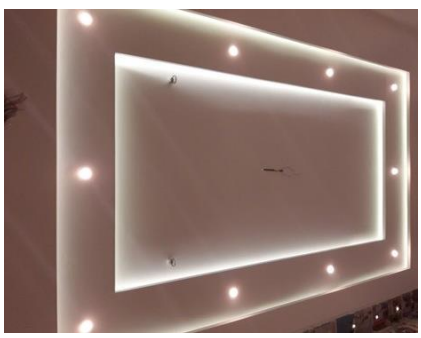

Figure 5.7: Arabesque inspired lighting (Source: www.pinterest.com, 2020), Figure 5.8: Wall cove lighting (, www.indiamart.com, 2020).

5.3.1.5 Doors and windows:

The door- It should be an electric metal and glass sliding door with hand railings on the side to be accessible for the disabled, aged and mothers with baby strollers. The door will also have the right ergonomics in terms of width to cater for all users.

Windows- Use of huge sliding glass windows with an arch shape inspired from the Swahili architecture.

Figure 5.9: Automatic sliding door (Source: www.sychelles.kone.com, 2020), Figure 5.10: Arched window (www.pinterest.com, 2020).

5.3.2 Landscape Design

The landscape of Bermuda Garden Hotel is divided into three, the main entrance consisting of the car parking area, the Garden area facing the restaurant and the terrace area above the restaurant. From the main entrance to the car parking area, a vehicle passageway should be asphalted while the car parking area to be designed as seen in figure 5.11 below with drivable grass permeable pavers since it is less expensive than concrete or asphalt. Tactile pavings to be placed at strategic places to serve the visually impaired.

Figure 5.11: Drivable grass paver (Source: www.pinterest.com, 2020), Figure 5.12: Tactile paving (Source: www.geograph.org.uk ,2020).

Taking inspiration from Arabesque patterns, landscape plants and planters can be manicured so as to take the shape of curved and natural forms as seen in the figure 5.13 below. The researcher suggests introducing of flowering plants, trimmed curved hedges, well-manicured shrubs, fountain and a small pond with a wooden bridge to brighten up the landscape.

Figure 5.13: Curved Planters (Source: www.pinterest.com, 2020).

Figure 5.14: Wooden bridge over pond (Source: www.pinterest.com, 2020), Figure 5.15: Well shaped shrubs and plants (Source: www.pinterest.com, 2020), Figure 5.16: Jacaranda trees (Source: www.pinterest.com, 2020).

Outdoor sitting areas to have wooden gazebos that will have ‘makuti’ thatching to imitate the Swahili architecture. Curved seating design with stuffed printed cushions as another outdoor seating design

Figure 5.17: Outdoor seating design (Source: www.pinterest.com, 2020).

Walkways and pathways to be wide enough and have hand railings to support the disabled and aged. The researcher suggests wooden pellets walkway with wooden hand support and concrete walkways with grass.

Figure 5.18: Wooden pellets walkway (Source: www.alamy.com, 2020), Figure 5.19: Concrete walkway (Source: www.pinterest.com, 2020).

Proper signage that is conspicuous and clear is recommended so that the passers-by can be informed of the hotel in that area which further helps in marketing the hotel.

5.3.3 Furniture Design

The researcher recommends setting the furniture in an orderly manner which improves mobility within the hotel. There should also be enough space left at some tables for wheelchair users and mothers with baby strollers. Reception desks will cater for the wheelchair users and the aged by having a lowered desk and cane holders. The furniture will also have the correct ergonomics to be able to cater all users.

Figure 5.20: Accessible reception desk (Source: www.modernofficefurniture.com, 2020).

The researcher recommends for the furniture to be made using black ebony wood, glass, marble laminate where applicable. For upholstery, pastel pink microfiber material is recommended.

Figure 5.21: Black ebony and glass coffee table (Source: www.sothebyshome.com, 2020), Figure 5.22: Microfiber upholstery (Source: www.topcleaningsecrets.com, 2020), Figure 5.23: Marble laminate desk (Source: www.marbletrend.com, 2020).

By being inspired by Arabesque patterns and Swahili design, the patterns and arches from Swahili design can be used to design the form of the furniture. The researcher suggests making laser cut arabesque patterns on the furniture and arch shapes.

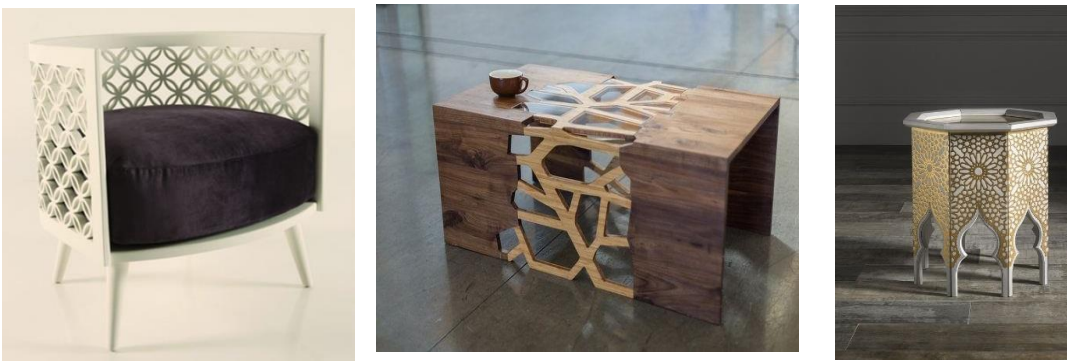

Figure 5.24: Hollow patterns in furniture (Source: www.pinterest.com, 2020).

5.3.4 Exhibition Design

The researcher suggests use of 3D signage placed on an arched wall niche with cove lighting for the exhibition and display at the reception of the hotel to bring out the identity and branding of the hotel. Arabesque inspired hanging lamps to be placed above the reception desk and bar counter area for proper visibility

Figure 5.25: 3D signage (Source: www.pinterest.com, 2020), Figure 5.26: Hanging lamps (Source: www.pinterest.com, 2020)

Introduction of customized display units taking inspiration from arabesque patterns for its form such as magazine racks for the reception and wine racks for the bar area

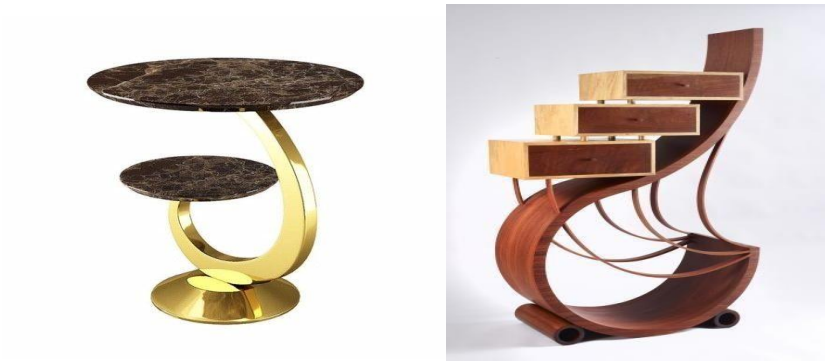

Figure 5.27: Curved display units (Source: www.pinterest.com, 2020).

The researcher introduced wall display units made of wooden pellets shaped to form the letters BMG to stand for the hotels name.

Figure 5.28: Wooden pellets display unit (Source: www.pinterest.com, 2020).

5.4 Recommendation Sketches

5.4.1 Furniture concepts

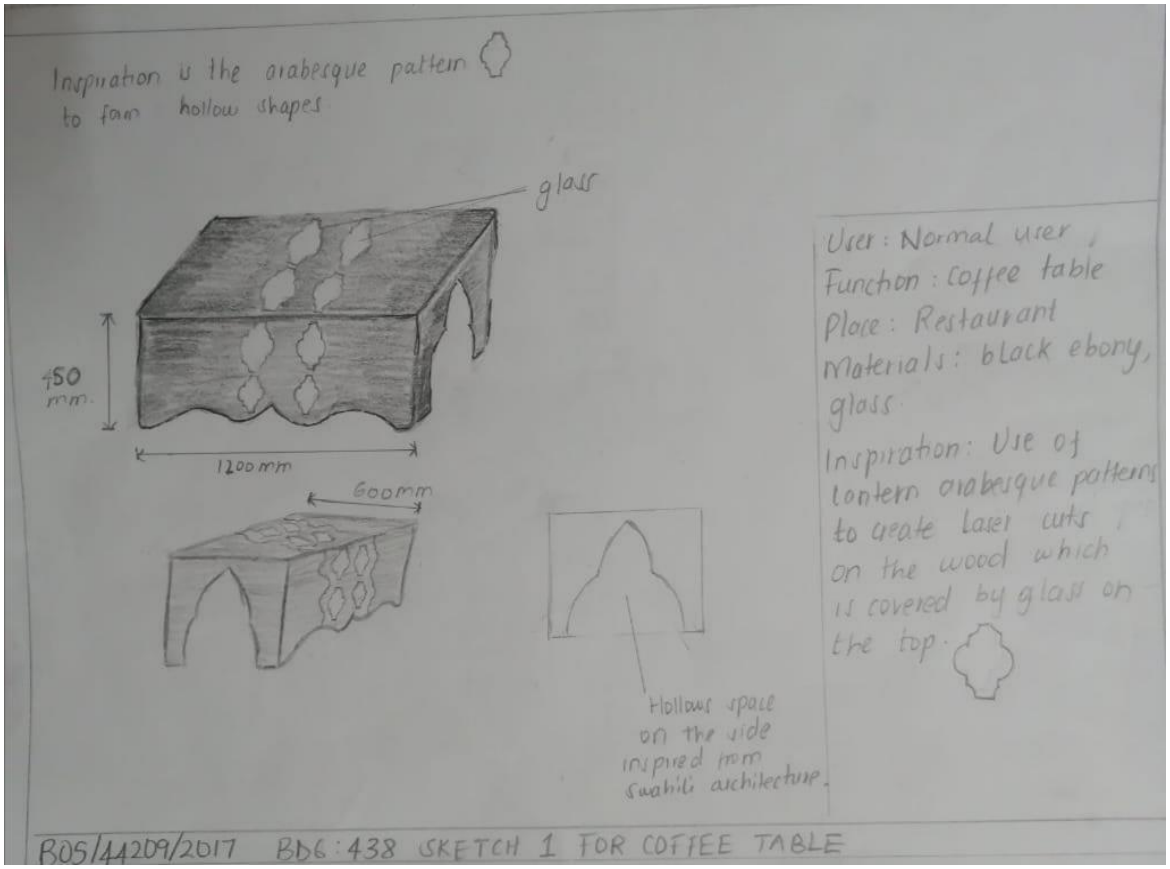

Figure 5.29: Coffee Table sketch inspired by Arabesque patterns and Swahili Arch (Source: Researchers construct, 2020).

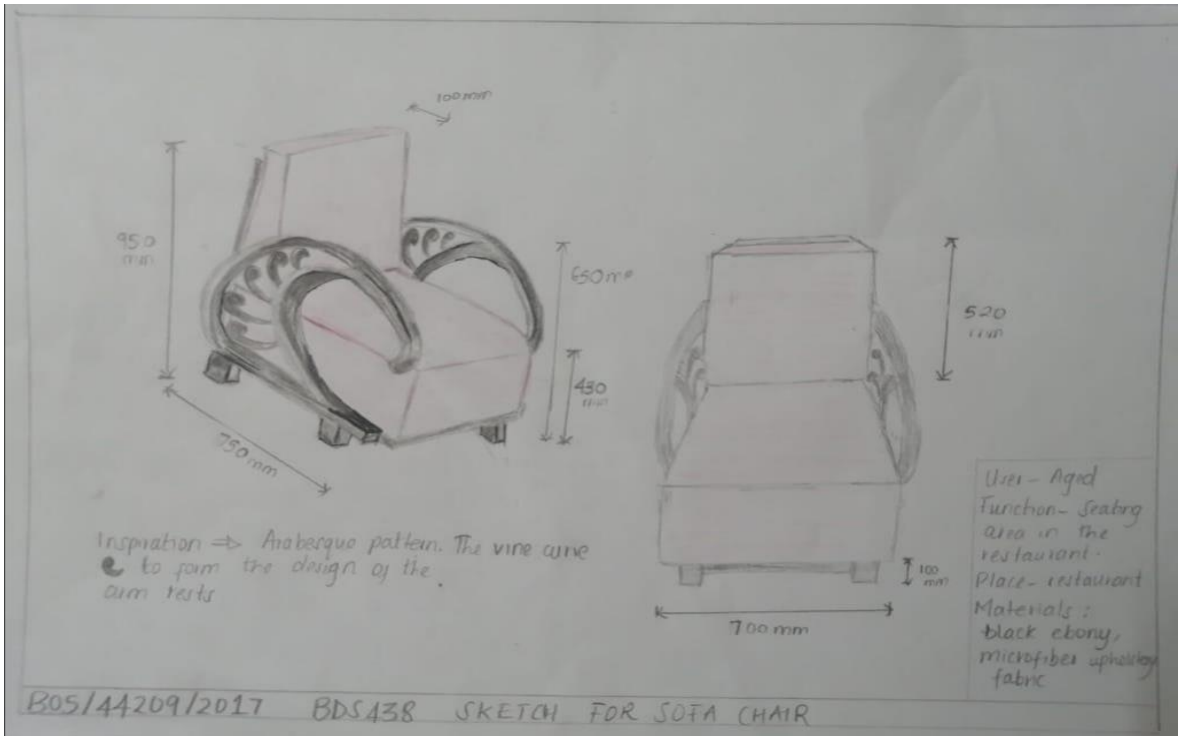

Figure 5.30: Sofa Arm Chair sketch inspired by Arabesque patterns (Source: Researchers construct, 2020).

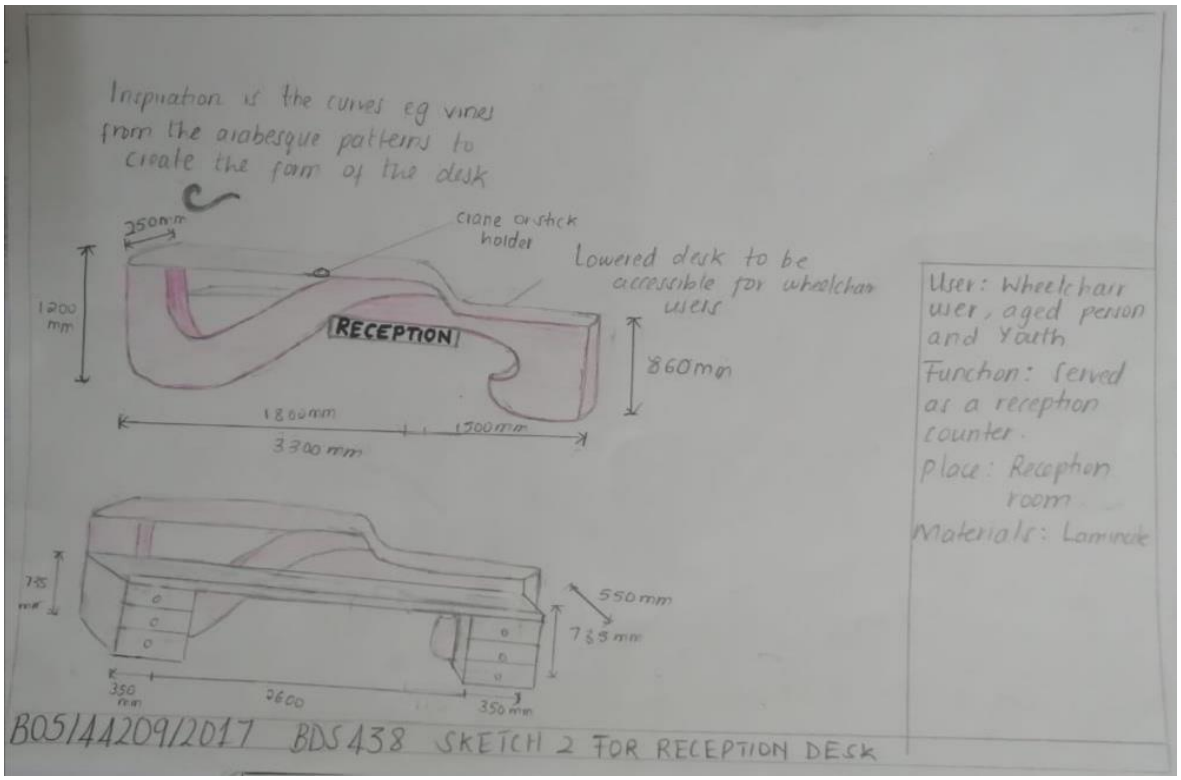

Figure 5.31: Reception Desk sketch inspired from Arabesque pattern (Source: Researchers construct, 2020).

5.4.2 Interior Architecture Concept

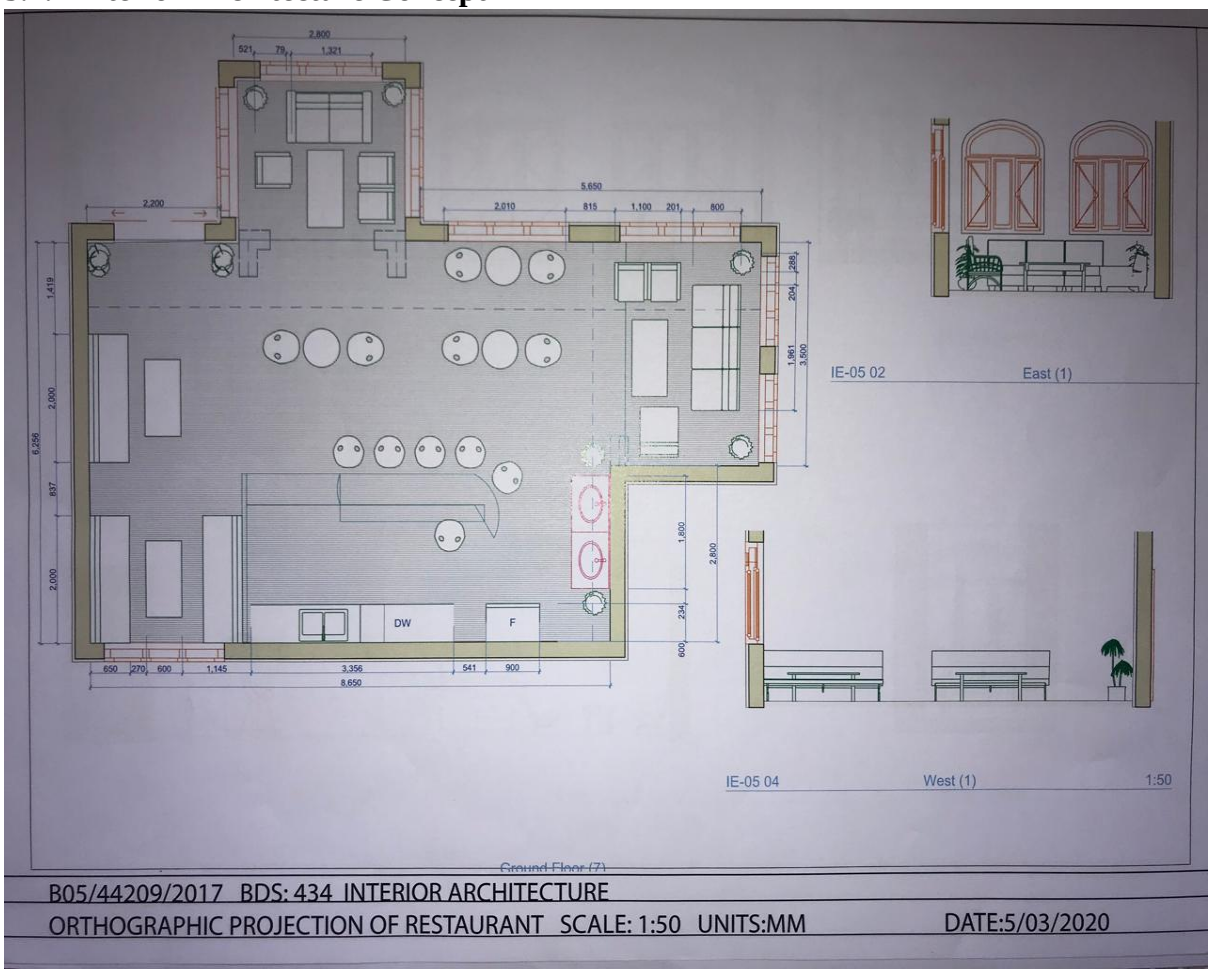

Figure 5.32: Plan for the Interior of Bermuda Gardens hotel restaurant (Source: Researchers construct, 2020).

5.4.3 Exhibition and Display Concept

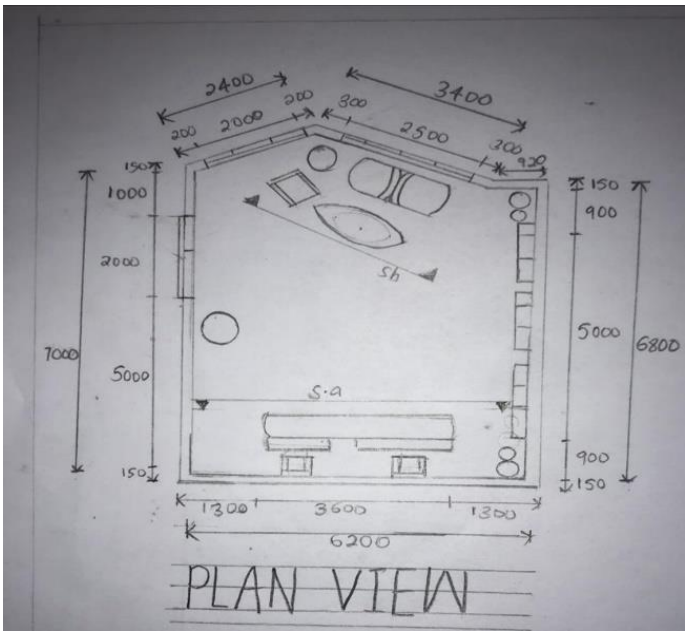

Figure 5.33: Plan for the Exhibition and Display of Bermuda Garden Hotel reception (Source: Researchers construct, 2020).

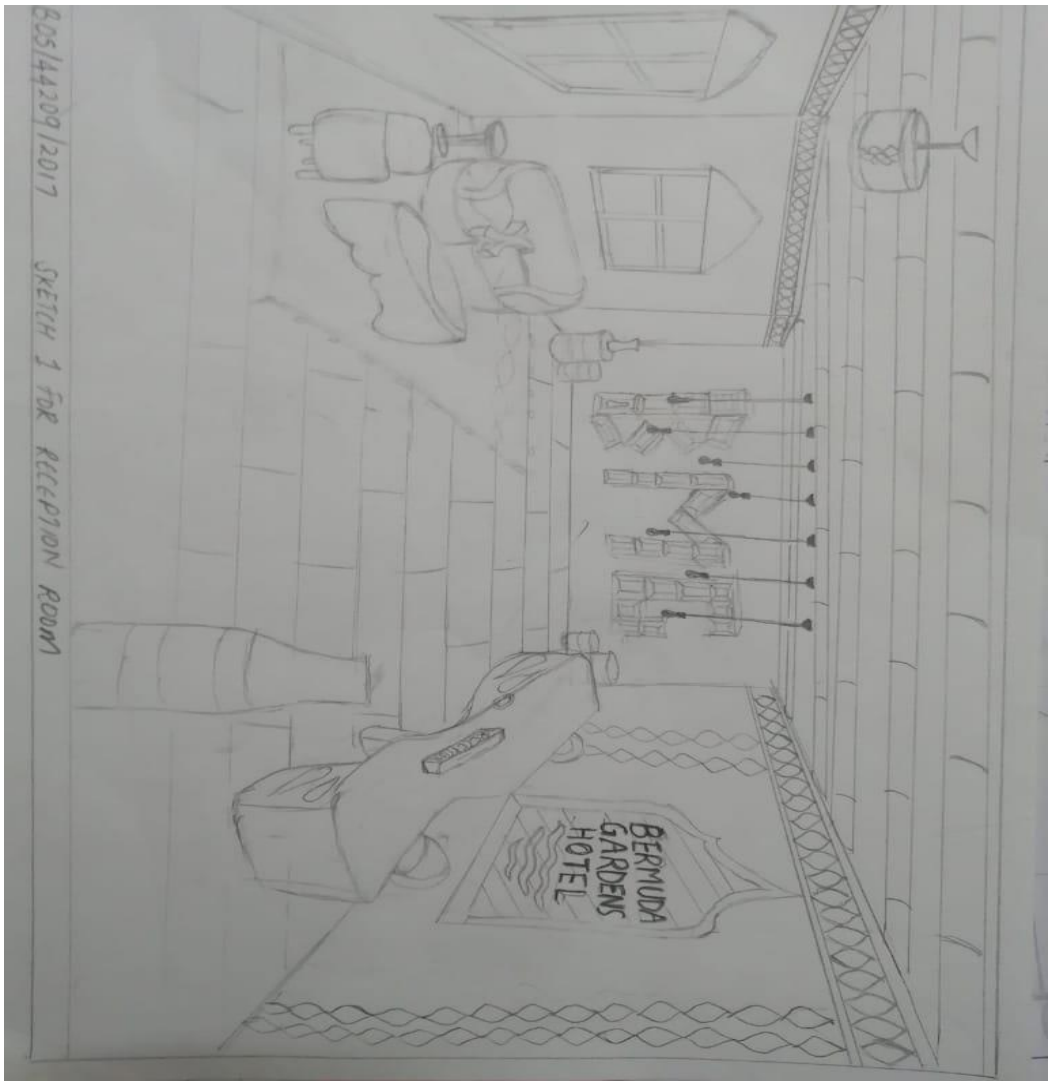

Figure 5.34: Sketch for Exhibition and Display of reception area (Source: researchers construct, 2020).

5.4.4 Landscape concept

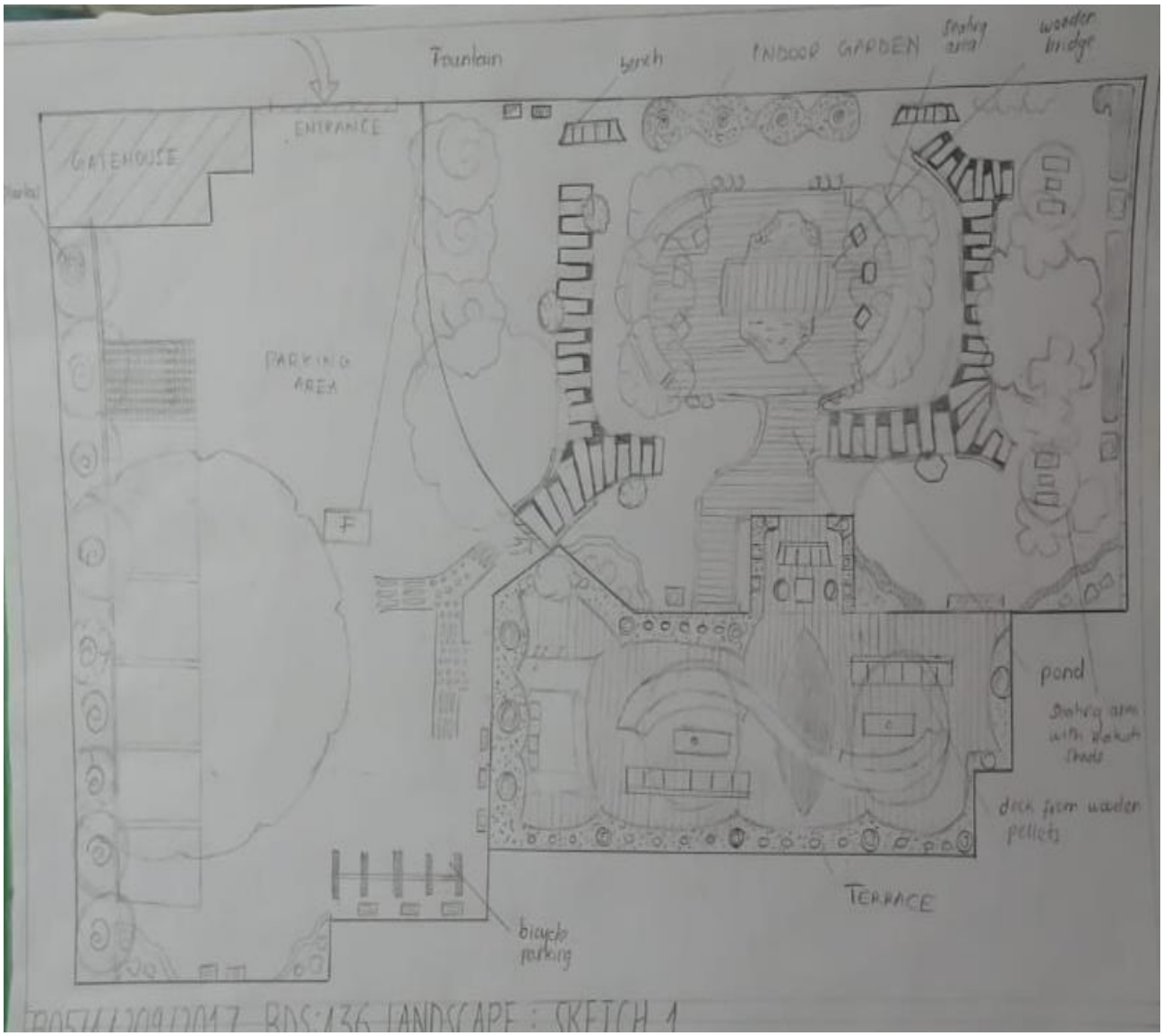

Figure 5.35: Landscape plan sketch for Bermuda Gardens hotel (Source: Researchers construct, 2020).

5.5 Conclusion

There is a great need for the redesign of Bermuda Gardens hotel with respect to the responses received in form of opinions and suggestions. When taking Universal design and African design into consideration, the existing design of the hotel had not applied any of the above mentioned. The respondents have put great emphasis on the execution of the principle Universal design, use of Arabesque patterns and some aspects of Swahili design in its new

design concept so as to make it an accessible hotel to all users and give the hotel an African feel to it.

The researcher discovered that to be the best in the hospitality industry you have to provide the best not only to specific users but to all users so as to promote equality and not just quality.

5.6 Suggestions for further Study

Despite the researcher having covered a lot in terms of researching of data on Universal design and Arabesque patterns, this study does not exploit all the research gaps needed to be covered and presented. The researcher therefore suggests for a more exhaustive research to be carried out to individuals and groups willing to use this research case to add their own studies to it.

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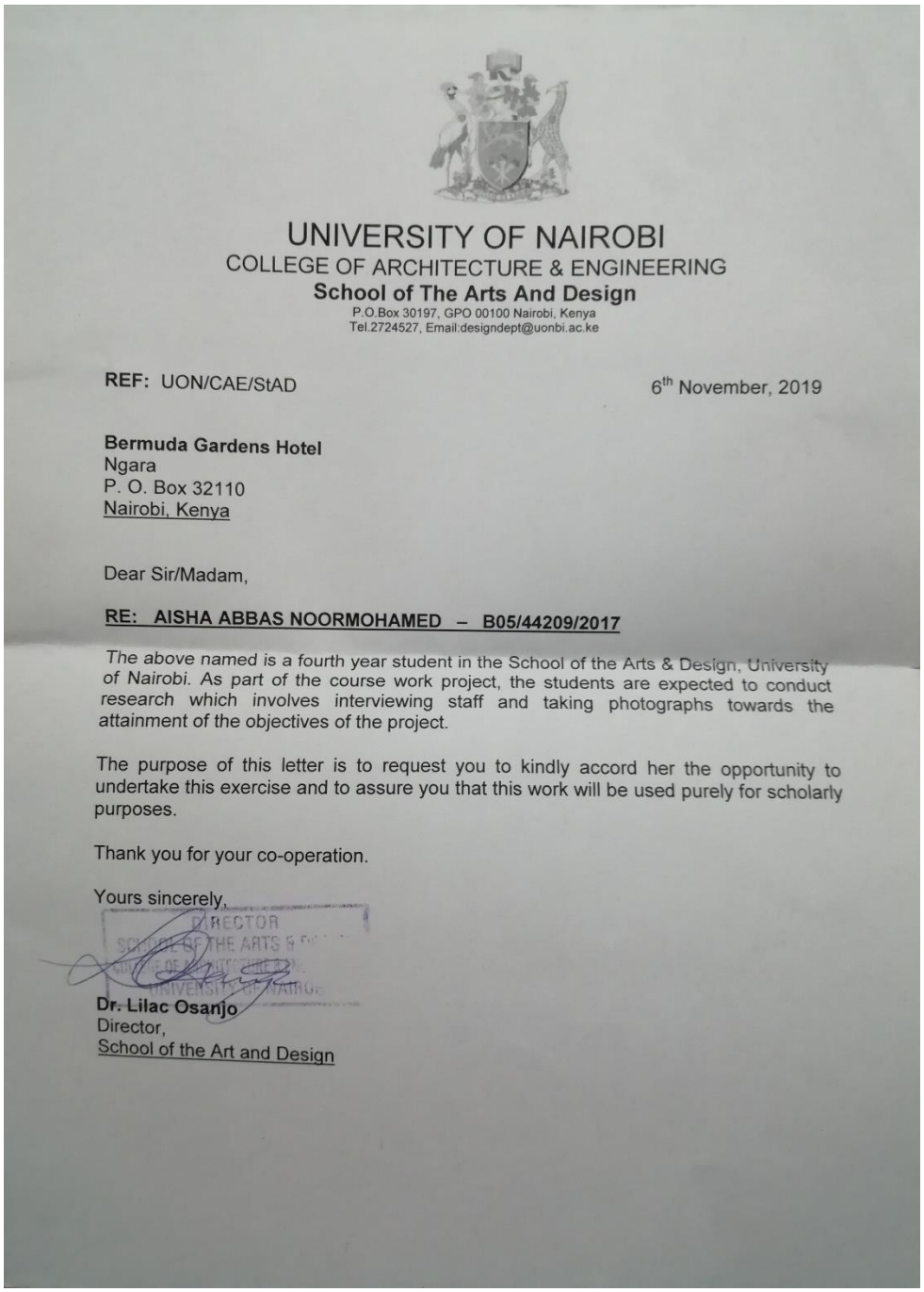
APPENDICES

Appendix 1: Research Site Referral Letter from The Director STAD



UNIVERSITY OF NAIROBI
COLLEGE OF ARCHITECTURE & ENGINEERING
School of The Arts And Design
P.O.Box 30197, GPO 00100 Nairobi, Kenya
Tel.2724527, Email:designdept@uonbi.ac.ke

REF: UON/CAE/StAD

6th November, 2019

Bermuda Gardens Hotel
Ngara
P. O. Box 32110
Nairobi, Kenya

Dear Sir/Madam,

RE: AISHA ABBAS NOORMOHAMED – B05/44209/2017

The above named is a fourth year student in the School of the Arts & Design, University of Nairobi. As part of the course work project, the students are expected to conduct research which involves interviewing staff and taking photographs towards the attainment of the objectives of the project.

The purpose of this letter is to request you to kindly accord her the opportunity to undertake this exercise and to assure you that this work will be used purely for scholarly purposes.

Thank you for your co-operation.

Yours sincerely,

DIRECTOR
SCHOOL OF THE ARTS &
UNIVERSITY OF NAIROBI

Dr. Lilac Osanjo
Director,
School of the Art and Design

Appendix 2: Interview Guide

UNIVERSITY OF NAIROBI

College of Architecture and Engineering

School of the Arts and Design

Section A: Owner

1. What was the inspiration behind the design of Bermuda Garden's Hotel?

2. What is your understanding on Universal Design and has it been applied in the design of Bermuda Garden Hotel?

3. What was the reason behind selection of the current materials of the hotel?

4. After being introduced to Universal Design and Arabesque patterns, would you recommend these two themes in redesigning the hotel?

5. How often do you change the design of the hotel or has it always been the same?

6. Would you reconsider redesigning of Bermuda Garden Hotel by employing Universal Design and Arabesque patterns from the Swahili? If yes, what areas do you think need these the most?

Section B: Customers

1. What is your opinion on the interiors and exterior of Bermuda Garden Hotel?

2. After being introduced to Universal Design and Arabesque patterns, would you recommend these two themes in redesigning the hotel?

3. Have you ever had a problem as far as accessibility is concerned?

4. Which areas of the hotel would you feel like needs to be renovated or redesigned?

5. Do you see any African Art being applied in the design of the hotel? If no, would you suggest the incorporation of Swahili design and its arabesque patterns?

Section C: Manager and working staff

1. What is your take on the current state and design of the hotel?

2. Do any customers complain about accessibility within the hotel? If yes, what areas are inaccessible within the hotel?

3. After being introduced to Universal Design and Arabesque patterns, would you recommend these two themes in redesigning the hotel?

4. What areas of the hotel do you recommend to be designed first?

5. What are your opinions on making the hotel accessible to all users?

Appendix 3: Focus Group Guide

UNIVERSITY OF NAIROBI

College of Architecture and Engineering

School of the Arts and Design

Section A: Interior Design students

1. After viewing some of the photographs of Bermuda Garden Hotel, what are your views on the current design of the interior and exterior spaces?

2. What is your opinion on the current level of accessibility and universal design within the hotel and how can the hotel be made more accessible to all users?

3. What is your suggestion in making the hotel accessible to users such as disabled, aged, mothers with baby strollers and the visually impaired?

4. After a brief introduction to Swahili design, its architecture and interiors, the Arabesque patterns and exemplars of the use of these patterns, do you think Arabesque inspired designs have an opportunity in designing for the hospitality industry?

5. Would you recommend use of Universal Design, Swahili design and its Arabesque patterns in the redesigning of Bermuda Gardens Hotel?

6. Which spaces would you recommend to be designed first?