



**UNIVERSITY OF  
NAIROBI**

COLLEGE OF ARCHITECTURE AND ENGINEERING  
SCHOOL OF THE ARTS AND DESIGN

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BDS 413: PROJECT PAPER  
(Interior Design Specialization)

**ADINKRA SYMBOLS AND UPCYCLING TO DESIGN BEAUTIFUL, ACCESSIBLE  
SPACES FOR YOUNG AND OLD ADULT RESTAURANT FREQUENTERS: CASE  
STUDY OF FREETOWN RECREATION CENTER, RUAL.**

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

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**DECLARATION**

I Topister Wanjiku Kinyua hereby declare that this research is my original work and has not been presented for the award of degree in any other university. All the sources and ideas of other scholars quoted or used, have been indicated and acknowledged by means of complete references.

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## **DEDICATION**

I dedicate this paper to God Almighty for faithfully seeing me through my education, bringing me this far in life.

To my mother, Mrs. Martha Kinyua who has prayed for me ceaselessly, taught me resilience, perseverance, hard work and how to nurture dreams without giving up. Her lessons have so far shaped me.

To my father, Mr. Peter Kinyua who has always shunned laziness and instilled discipline, self-discipline, integrity and responsibility, bringing me up to believe that I could do anything that I set my mind to do.

To my younger brothers Andronicus Kibuchi and Godwill Mwangi who have made my life worthwhile, brought unexplainable joy through life. I hope this paper acts as a source of inspiration to their future professions.

I have nothing but uttermost gratitude for how they have helped me pursue my passion and develop my talents, for being my biggest support system.

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## **ABSTRACT**

Designing is about satisfying a need. While it is important for a designer to address the worldly and widely provided ergonomic instructions and guidelines of design, it is also important to acknowledge that disability is more pervasive than people acknowledge and any individual is perceptible to disability, whether temporary or permanent. Data shows that “10% of the total world’s population, 650 million people, live with a disability” (Munene, 2017). To add to this, 62% of people that dine out encounter physical obstacles (Rossetti, 2009). This goes to suggest that the world has been built for the more abled group of people. Population is growing and designers ought to view every space as usable and accessible.

Products and designs ought to be durable, with minimal and efficient use of energy, with monitored waste management processes. This is an approach the researcher has discussed to render designs more aesthetic as much as they are usable using upcycling methods. With this, the researcher looks to promote creative thinking processes and problem solving opportunities that achieve long term durability and usability.

While Universal Design is a major focus for this study, the researcher incorporates the aesthetic-usability phenomenon. It describes the way in which people perceive more appealing designs as easier to use than less appealing ones, whether they are or not (W Lidwell). The researcher, discovered that there has been no particular effort made to preserve most of African art as none of the indigenous communities that created them coveted the objects as aesthetic accomplishments (Evans, n.d.). However, unveiled African art forms have indicated a significant legacy left behind, the concept of beauty according to the African Culture that had probably not been discovered or realized by the indigenous communities for accomplishment. This concept of beauty in African Philosophy is relational and functional (Ibanga, 2017). This implies that there is simply no beauty for beauty’s sake as per the African culture, in that beauty is considered in terms of good conduct and physical attractiveness. This ideology motivated the researcher into using African symbols (Adinkra symbols of Ghana) in the context of producing aesthetic and usable designs.

The study uses a descriptive research design to show how Freetown Recreation Center seems to have an unmet potential towards Beautiful Universal Design. Qualitative methods have been used to collect primary data from respondents during interviews conducted, participatory observation and documented sources. Quantitative methods have been used in data presentation to showcase findings, arranging them in the form of tables, bar charts and pictograms. Key informants were obtained using a purposive sampling technique because they had specific information required regarding Freetown’s attendance and history. The rest were obtained through a convenience sampling technique, those of who were accessible, present by chance and convenience.

This study has shown that sustainable design provides necessary constraints that render design more engaging and vital for the healthy existence of every living thing. In reference to this information, the study also established that beautiful universal design can be bestowed on an appreciation of African art and design, especially during this era of African Renaissance, with little to no waste and sincere empathy towards the diversity of human beings. In order to improve the state of design at Freetown Recreation Center, the researcher has made recommendations on the four thematic areas of study, furniture design, landscape architecture, interior architecture and exhibition and display, as per the main topic discussed by the researcher, Beautiful Universal Design, using Adinkra Symbols of Ghana and upcycled texture.

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## Chapter 1

### 1.0 INTRODUCTION TO THE STUDY

#### 1.1 OVERVIEW

In the course of time, any space begins to lose its appealing nature and starts to look outdated and old. This could be due to the inability to adapt to the changing times, a lack of understanding of the changing needs of human beings that provide services and positive attitudes accordingly. Restaurants and bars with weary surrounding - worn out flooring, furniture, ignored plantation and more- and less aesthetic design forces guests and eventually frequenters to seek other spaces that exude feelings of affection, loyalty even patience. A redesign of a restaurant to render it more aesthetic and usable at the same time will foster a great deal of positive attitude within people and possibly give it a more competitive edge in the hospitality industry.

This chapter will focus on the main design problems that Freetown Recreation Center encounters, a set of objectives and research questions that will provide a guidance for the whole study as well as a significance of this study, limitations and a scope of the study.

#### 1.2 BACKGROUND OF THE STUDY

Design is fundamental. It however has the world built for the more agile and younger group. We have a variety of age groups using the same space at the same time. Design therefore fails to suit anyone perfectly as designers in most institutions are trained and provided with ergonomic instructions and guidelines for the ‘average’ person or group of people while this ‘group’ fails to exist. Everyone has experienced a disability whether temporary or permanent, identifying us with problems connected to the spaces we reside in and the products we consume. Every individual is however unique and as a group, the human species is quite diverse (Story, Mueller, & Mace, The Universal Design File: Designing for people of all ages and abilities.). To add on, as population grows, and ultimately age, designers need to view every space usable as a place with ease of accessibility. The aesthetic-usability effect is a theory that will be considered, that describes a phenomenon in which people perceive more appealing designs as easier to use than less appealing designs, whether they are or not (W Lidwell). More usable design and less aesthetic products and environments may suffer a lot of unacceptance hence a biased perception formed by the majority.

Africa is the source of spirited design inspiration and intelligent contextual solutions to malignant challenges, and the African art history has played an expressive role in modelling the culture and history of the world. The ancestry of African art has existed long before cataloged history and this lays a foundation of Africa being the source of humankind's history. Despite the above, there is no particular effort made to preserve most of these African art forms as none of the indigenous communities that created them coveted the objects as aesthetic accomplishments. Often their value became slim once their function was met (Evans, n.d.). To add on, colonialists did not give merit to indigenous art as it had earned, therefore African art history was not retained (Evans, n.d.). However, among the unveiled African art forms and collections, there is a diverse legacy left behind on earth beginning from rock drawings through tribal art, body paintings, sculptural masks, symbols and icons, which are all intertwined to different African cultures, often depicting the abundance of the surrounding nature and strong religious belief. This particular study narrows down to African symbolism, mainly using the Adinkra Symbols of the Akan of Ghana. The practice has been perfected since time immemorial thus acts as an inspiration for the researcher to creating aesthetically pleasing interiors.

Reducing the need for use of new non-renewable and renewable raw materials from natural resources is key to our planet's survival. However, the notion of reusing waste material to offer beauty, comfort and luxury is often overlooked especially in the 21<sup>st</sup> century where designers have access and a lot more exposure to techniques in product creation. Machinery is also of no constraint while references, inspirations, techniques and common trends can be referred to with ease. "Interior design (as a form of art and design) is not very environmentally friendly" (Knott, 2013) because old furniture and material like fabric is discarded, making amount of waste of quite enormous after renovations and de-cluttering. Upcycling offers new life and function for these waste materials and more without degrading its original material with which it was made from. As opposed to recycling, the process of "rebirth" does not require any time spent in getting new materials as well as breaking down the original material to render it purposeful, thus saving energy. With these, the researcher hopes to achieve factors of a successful design that might promote creative thinking and problem solving opportunities as well as achieve long term durability.

Research shows that 71% of people dine out at least once a week and 64% of these encounter obstacles at restaurants. To further break it down, 62% encounter physical obstacles while 40% lack enough room between furniture. To add on, 28% of these individuals experience issues with steps at the entrance or within the restaurant and lastly a portion of 20% lack availability of desired seating (Rossetti, 2009). This is due to improper or little to no signage, lack of ramps at entrances or within the restaurant, lack of passenger loading zones at parking lots, slippery floors not suitable to those using canes to move around, poor lighting, narrow pavements, a lack of understanding that seniors need a little bit firmer seating or more light to see than a younger person and more, not to mention a few as observed at site, the Freetown Recreation Center in Ruai. The obstacles are present but are not noticeable because they are not so obvious to the majority.

### 1.3 STATEMENT OF THE PROBLEM

No space is perfect. While this is true, Freetown Recreation Center has displayed quite an amount of flaws in the furniture, flooring, lighting, signage, interior architecture and walkways within the interior space. The center has not, to the greatest ability designed its interiors and facilities to accommodate a variety of users, regardless of size, age or special needs. The ambiance too is very plain, dull and unexciting to any guest that gets through the center's entrances thus suffering a lack of acceptance.

### 1.4 OBJECTIVES OF THE STUDY

#### 1.4.1 Main objective.

To determine the aesthetic and accessibility nature of Freetown Recreation Center interiors and examine its fitness for its young and old frequenters.

#### 1.4.2 Specific objectives.

1. To investigate the nature of spaces and determine its effect to the Center's young and old frequenters.
2. To assess existing design strategies and determine how it affects accessibility, beauty and empathy in the interior design at Freetown Recreation Center.
3. To examine the status of Freetown Recreation Center and assess its influence on design for the disabled.

4. To establish new designs that achieve accessible, beautiful and empathetic qualities for the spaces at Freetown Recreation Center that appeal to its young and old frequenters.

## 1.5 RESEARCH QUESTIONS

### 1.5.1 Overall Research Question.

What is the aesthetic and accessibility nature of Freetown Recreation Center interiors and how is it fit for its young and old frequenters?

### 1.5.2 Specific Research Questions.

1. What is the nature of the interior spaces and how has it affected the center's young and old frequenters?
2. What are the existing design strategies and how do they determine an accessible, beautiful and empathetic interior design at Freetown Recreation Center?
3. What is the status of the Recreation Center and how has it influenced design for the disabled?
4. What are the proposed designs to ensure an accessible, beautiful and empathetic interior space at Freetown Recreation Center?

## 1.6 SIGNIFICANCE OF THE STUDY

This research study aims to improve the nature of the interior spaces and landscapes of Freetown, by mainly improving the aesthetic value and rendering the restaurant/bar more accessible to its frequenters. Secondly, it will foster the creation and re-creation of furniture and exhibition and display units that will be appealing and sustainable, putting into consideration ergonomic design strategies. Comfort and leisure without discrimination are among the guiding principle as design ought to be usable by people of diverse abilities.

The study will also promote aesthetic designs for the interior architecture, landscape architecture, exhibition and display and furniture, which will be achieved by African symbols and their meanings. A positive relationship between the guests and the environment will hopefully be achieved as the researcher has come to believe that beautiful design has a meaning behind it.

Through upcycling, the study promotes ethical design that will encourage other designers to implement sustainable design. To the users, this research study will empower them to

embrace sustainable methods of living as well as an application of the same. Lastly, the research will appreciate the notion that upcycling methods have a beauty of many magnitudes and should not be overlooked.

### 1.7 LIMITATIONS OF THE STUDY

No study is flawless, each has a number of shortcomings that degrade the potential to an extensive research. For this particular research, time is a limited factor, in that the whole research process is to be conducted within four months. Therefore, the estimated number of interviews to be conducted may not be attained.

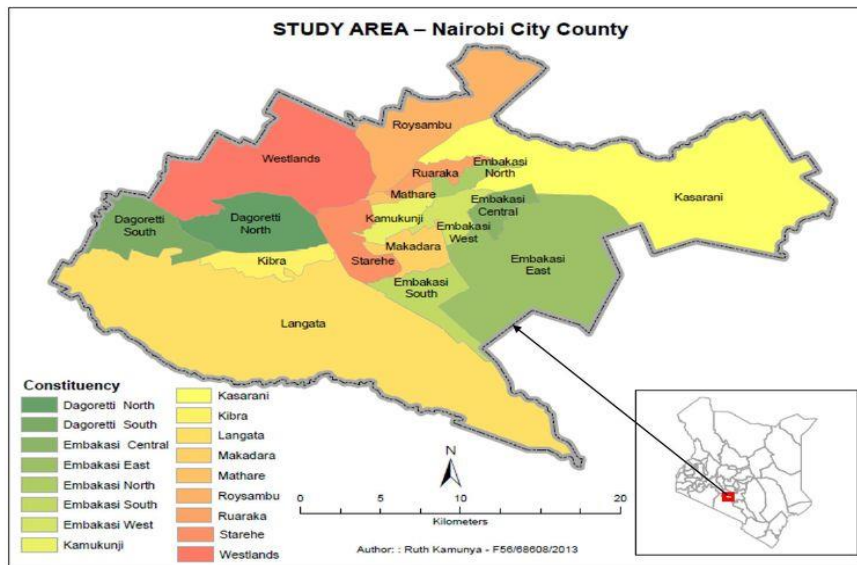
To add on, the unavailability of intended interviewees may be a challenge as most of them will be at their work stations. Their response might as well fail to be comprehensive due to a fear that their work is being scrutinized by unknown persons.

### 1.8 SCOPE OF THE STUDY

#### 1.8.1 Geographical scope

The study will be conducted within Ruai, which is in Kasarani Constituency, Nairobi County, Kenya. Freetown Recreation Center is located along Kangundo Road near a stage called Stage 26.

### Study Area



Study Area – Nairobi City County

Figure 1-1: Nairobi County. Source: docplayer.net



IEBC REVISED KASARANI CONSTITUENCY COUNTY ASSEMBLY WARDS

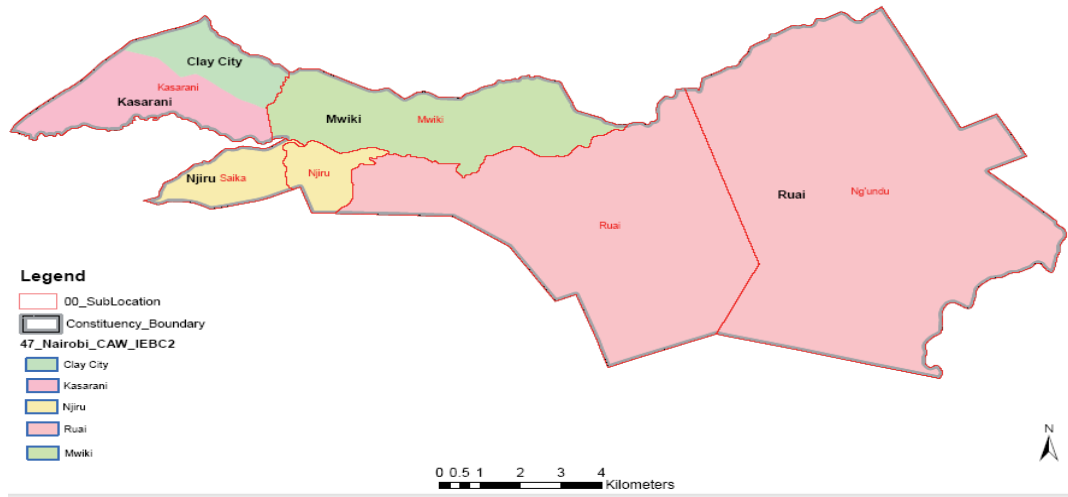


Figure 1-2: Kasarani Constituency. Source: informationcradle.com



Figure 1-3: Freetown Recreation Center. Source: <https://earth.app.goo.gl/3haCWM>

### **1.8.2 Contextual scope.**

This study focuses on application of elements and principles of design by incorporating Universal Design principles, African design and upcycling methods. The target fields to which the above will be applied include; interior architecture, landscape architecture, exhibition and display and furniture to see a favorable redesign of Freetown Recreation Center. Data and exploration of the center will be collected and conducted using qualitative methods.

### **1.8.3 Conceptual scope.**

The main specialization of this study is under interior design, which has been divided into four specific themes that include interior and landscape architecture, exhibition and display and furniture with an infusion of universal design principles, adinkra symbols of Ghana and upcycling methods to develop appealing designs and an accessible environment.

## **1.9 CONCLUSION**

This chapter began with an introduction to the study and a background on which the study leans on. A problem statement was generated leading to a compilation of a set of objectives that derived research questions to be used by the researcher as guidelines that address the study. Afterwards was a significance of the study as well as limitations the researcher faced while conducting the research within the geographical, contextual and conceptual scope outlined.

## Chapter 2

### 2.0 LITERATURE REVIEW

#### 2.1 OVERVIEW

This chapter will have a review of theoretical literature on Universal Design as the major philosophy, two independent variables-African design and sustainability methods, which is upcycling- that will assist the designer to achieve beautiful universal design in the four main themes which are interior architecture, landscape architecture, exhibition and display as well as furniture design. It will also include a previous case study and a design champion whose beliefs provide a justification to the researcher's chosen philosophy. This also applies to the design exemplars that are to be mentioned who have provided inspirations for this project as well as encourage the benefits to an appealing space that generates sustainable design.

#### 2.2 UNIVERSAL DESIGN



*Figure 2-1: accessible road illustration-pedestrian crossing. Source: dreamstime.com*

Disability is more pervasive than people realize. According to current data, around “ 10% of the total world’s population, 650 million people, live with a disability (Munene, 2017) and society has put a correlation between disability and abnormality, stigmatizing the disabled, forcing them to renounce having a disability. This happens because of the recognizable challenges identified with the circumstance. Disability, however, is a familiar and normal part of life which has seemingly encouraged this approach to be an inspiration for good design and not a hurdle. Therefore, Universal Design becomes the process of generating products and built spaces to be operative by all persons, to the greatest degrees

possible, without an obligation for adaptation. It aims to meet the widest range of abilities despite ability, age or life status (C Pilarski, 2013).

### **2.2.1 Evolution of Universal Design.**

Social interpretations and approach to disability have changed rapidly during the past 35 years. The World Health Organization classification system (WHO), has deflected from particularly emphasizing the medical model, which considers disability as a feature of the person, to the social model that understands disability, emanating from an interaction of people with the environment (Ostroff, n.d.). To add on, the assumption that a focus to the demands of diverse persons limits exceptional design, has been rectified when the results of ingenious designers around the world revealed a broad range of applications that content human senses and uplift their spirits while dealing with Universal Design. The approach has therefore gained a growing importance especially after UN CORD's action plan included an action plan that built from Mace's definition of Universal Design (Ostroff, n.d.).

### **2.2.2 Development of Universal Design.**

The design approach began in the architecture field but has been applied extensively in environmental initiatives, hospitality industry, art, healthcare and education. Consequently, the Centre for Universal Design conducted a research and demonstration project that was titled "Studies to Further the Development of Universal Design", and a set of guidelines set, what is now known as the Principles of Universal Design (Story, Principles of Universal Design, n.d.).

The 'guidelines' were to purportedly guide the concept of universal design in an extensive way as well as guide the design process. This would in turn allow chronological evaluation of designs and assist in enlightening both inventors and consumers about the attributes of more usable and functional design solutions (Story, Principles of Universal Design, n.d.).

Authors of the Principles of Universal Design conceptualized two additional levels of detail beyond the principles. If the first level was to be conceptual and the second level was design guidelines, Level 3 would be compliance tests and Level 4 would be design strategies. These principles include:

### **2.2.2.1 PRINCIPLE ONE: Equitable Use.**

The design is advantageous and profitable to people with diverse abilities. It provides similar means of use for all users, which is it should be identical whenever possible and equivalent when not. Designs should make sure to avoid separating or stigmatizing any users. Consequently, provisions for confidentiality and safety are to be equally accessible and appealing to all users.



*Figure 2-2: (handicapped doors) Source: doorcontrolne.com*

### **2.2.2.2 PRINCIPLE TWO: Flexibility in Use.**

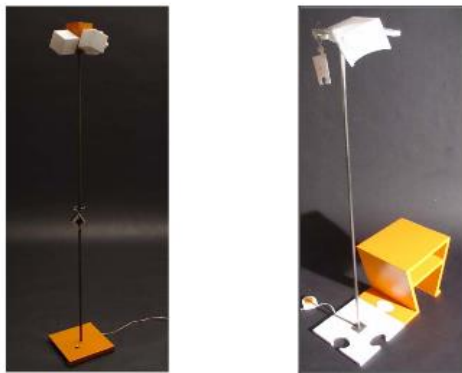
The design creates room for an extensive range of individual preferences and abilities. It provides choice in approach of use as well as accommodates right or left handed access and operation. It facilitates the user's accuracy and precision. The design allows adaptability to a user's pace.



*Figure 2-3: Casta universal design scissors. Source: japanrendshop.com*

### 2.2.2.3 PRINCIPLE THREE: Simple and Intuitive Use.

Application of the design is easy to comprehend, despite a user's past experiences, know-how, language skills, or current focusing levels. It eliminates unnecessary complications and is consistent with a user's anticipations as well as intuition. It homes a wide range of literacy levels and language skills while also arranging information in line with its benefits. It provides effective indications and response during and after a task is executed.



*Figure 2-4: Lamp. L Pederson. Lamp. J Lennard. Source: [www.defsa.org.za](http://www.defsa.org.za)*

### 2.2.2.4 PRINCIPLE FOUR: Perceptible Information.

The design addresses important information adequately to the user, despite the general conditions or a user's sensory capabilities. It uses contrasting techniques whether pictorial, verbal or tangible for superfluous presentation of extremely important information while ensuring an adequate difference between indispensable information and its environments. The design maximizes "legibility" of crucial information as well as differentiate design



*Figure 2-5: paraffin container incorporating braille by K. Golin & C. Fouche. Source: [www.defsa.org.za](http://www.defsa.org.za)*

subjects in well elaborative ways, which is making it effortless to relay specifics or important guidelines. It provides a sense of rapport with a variety of modes or equipment used by persons with sensory limitations.

#### **2.2.2.5 PRINCIPLE FIVE: Tolerance for Error.**

The design subject minimizes hazards and the plausible results of accidental or unperceived actions. It organizes elements to isolate, protect or eliminate danger and errors on frequently used design subjects and the most accessible ones. With tolerance of error, there is providence of warnings of these hazards and errors as well as fail safe features. Lastly, it has a capability of discouraging unconscious action in tasks that lead to grave consequences, an example is the warning dialogue box that appears on a computer screen.



*Figure 2-6: exit sign. Source://universaldesignmeetstheexit.com*

#### **2.2.2.6 PRINCIPLE SIX: Low Physical Effort.**

The design subject acquires features that maximize efficacy and comfort with minimum fatigue. It allows a user to maintain a relaxed body position or posture while also using reasonable operation forces. It minimizes monotonous actions as well as a continuous physical effort. Below is The Universal Bath that has been designed under the universal design principles. Its walls rise and lower around the user thus eliminates strain of getting in and out of the tub.



*Figure 2-7: Universal Bath by D. J Coetzee & P Kleinschmidt. Source: [www.defsa.org.za](http://www.defsa.org.za)*

### **2.2.2.7 PRINCIPLE SEVEN: Size and Space for Approach and Use.**

This principle ensures a required size and circulation space provided for approach, manipulation, and utilization, regardless of user's anthropometrics or mobility. It provides a clear sightline to vital elements and reach to all these components comfortable for any seated or standing user. It also accommodates diverse in hand and grip size on design subjects while also providing adequate space for the use of secondary assistance, for example assistance from devices or personal assistance.



*Figure 2-8: appropriate space for use. Source: [develop.eu](http://develop.eu)*

An application of these principles means that a designer finds a way to meet the needs of a wide range of individuals. This includes correct selection and integration of products or features to create environments that can adapt to a variety of users.

### **2.2.3 Relationship between Inclusive Design, Accessible Design and Universal Design.**

While Accessible Design has the intention of revealing environmental and communication demands of the functional shortcomings of persons with disabilities, Universal Design produces products and spaces that are to be usable by all people, to the greatest extent possible, without the need for adaptation, specialized or adjusted design.



Inclusive Design on the other hand, entails making a product more accessible, focusing on ways with which a designer arrived at that design while Universal Design strongly describes the qualities of a final design, emphasizing the end solution, one that is mostly permanently fixed.

## 2.3 PROFILE OF A WORLD RENOWNED DESIGNER ADVOCATING UNIVERSAL DESIGN: DESIGN CHAMPION

### 2.3.1 TADA0 KAMEI: KEIO PLAZA HOTEL, TOKYO

Tadao is the founder of Nikken Sekkei Limited, an architectural firm in Tokyo, Japan. His philosophy, while designing new spaces is the ability to adapt to changing times, understanding changing needs and providing services accordingly. He has also nurtured the belief of pioneering the cause of social- environmental design, where the projects consider the surrounding context and society. The Keio Plaza Hotel is a series of hotels in Japan, designed by Tadao Kamei. The main and largest one is however in Nishi-Shinjuku district in Shinjuku, Tokyo, Japan. It was opened in 1971 and was deemed Japan's first super-structured hotel and Shinjuku's first skyscraper. The hotel consists of two towers, the first being 178 meters tall, completed in June 1971 and the second one being 138 meters tall, completed in November 1980. It has a total of 1,450 rooms. The Japanese government launched a research activity on wheelchair accessibility in hotels across the country. 19,000 hotels were surveyed through hotel industry organizations to observe the number of rooms that offered sufficient accessibility for the disabled (Universal Accessibility in Meetings, 2018, p. 49).

Keio Plaza Hotel began its Universal Design journey in 1988 when they were selected to host the 16<sup>th</sup> World Congress of Rehabilitation International. In preparation for this, 15 barrier free rooms were created. The hotel has since seen progress and has been accountable for both visually and hearing impaired persons. After renovations, 10 universal design rooms were created in 2002, establishing a universal design public restroom on the 2<sup>nd</sup> floor of the main tower in 2003 and in 2007, established toilet facilities for assistance dogs that belonged to the visually impaired. The hotel, in 2018, renovated the 10 existing Universal Design rooms with an addition of 3 more rooms leading them to having prepared three types of Universal Design rooms for a total of 13 rooms that is the deluxe room, luxury deluxe room and the junior room (Universal Accessibility in Meetings, 2018, p. 49).

Below are design features for:

### 2.3.1.1 Guests with visual disabilities.

The floors are equipped with brighter lighting equipment, high visibility and high contrast carpet designs as well as wallpaper. Entrance to rooms have embossed room number plates to identify the room number assigned. To add on, the hotel staff is well educated and fit to accompany guests to show where emergency exits are located and explain the details of the room layout and facilities.



Figure 2-10: high contrast carpet design



Figure 2-9: embossed room number plates

For the bathroom amenities, rubber bands are placed to distinguish the mini bottles. For example, a bottle of shampoo will have two rubber bands, a bottle of conditioner will have one rubber band and a bottle of body soap will not have any rubber band.



Figure 2-11: bottle with rubber bands

Assistance dogs are allowed and bowls of food and water are provided. A toilet facility is available for the dogs as mentioned above. There is use of high visual contrast, where dark coloring is used for the door chime and the key card sensor against the lighter colored wall paper. The room has Room Function Control Panel that has white letters and pictograms used against the dark backdrop of the control panel. The room phone has high visual contrast as well and large letters are used (for the partially impaired persons).



*Figure 2-12: room function control panel                      toilet facility for assistance dogs*

There is a voice navigation system that includes a portable device that provides auditory information on the room number and the direction of elevators are also provided. The audio broadcast is provided in Japanese and English.



*Figure 2-13: voice navigation portable device*

### **2.3.1.2 Guests with hearing disabilities**

A notice and pictograms are displayed on the monitor when a visitor appears (the door chimes and the sensor knocks), when the room phone rings, when the guest receives a message and in case of an emergency. Room lights and bathroom lights flash to notify guests of any kind of message or notification. The monitors are set in the room and bathroom. There are vibrating cushions placed under the pillows that vibrate in case of a notification or an emergency. The hotel has provided tablet terminals that possess Universal Design Talk that allows guests to communicate with the front desk staff in writing.



*Figure 2-17: bathroom; notification flash lights*



*Figure 2-15: universal design talk: tablet*



*Figure 2-16: notice and pictogram monitor*



*Figure 2-14: vibrating cushion*

### **2.3.1.3 Guests using Wheelchairs.**

The hotel design has provided wide entrances and exits. There are stepped elevators for the abled individuals and ramps for wheelchair users. The lighting is extensive as well as ample circulation space in the lobby and corridors. Doors at the entrances and exits are human sensitive, thus a wheelchair user does not strain to open or close them, hence does not need assistance from another party.

Entrance to rooms are wide that is 85 centimeters width while those of regular rooms have 75 centimeters width. The door is designed to close slowly up to a 60 degree angle, providing the user easy access when entering and leaving the room. There is a room function control panel that has the ability to control lights and electric curtains. The panel includes an outlet to recharge the electric wheelchairs. An Intercom is also present in the room, fixed to the wall that monitors and confirms visitors to the room as well as remotely

unlock the door. The control panel, intercom monitor, switches are all fixed at a height of 110 centimeters from the floor thus reachable.



*Figure 2-19: intercom monitor 110 cm from the floor*



*Figure 2-18: regular room; wide entrance*

Beds are electric adjustable where they provide foot adjustment for more stability and height adjustment that enables getting into and out of the bed safely. There is also a custom designed armchair with electric seat lift function that aids guests when sitting down or moving back into their wheelchairs or even standing up for any normal abled person.



*Figure 2-20: electric adjustable bed*



*Figure 2-26: custom designed electric seat with lift function*



*Figure 2-25: seat lift function that aids guests when sitting and standing up*

The rooms are facilitated with other specially designed furniture with special functions. The underside of writing or study desks is equipped with a lip that enables a user to pull themselves closer to the desk. To make use more convenient, the cabinets are designed to match the height of the users using wheelchairs and designed with guests who have weak grip strength in mind. For handrails, when gripped, they fit the hand perfectly with a comfortable feel of rounded wood. Wardrobe hanger bars are height adjustable.



*Figure 2-23: desk with underside lip*



*Figure 2-24: reachable cabinets*



*Figure 2-22: gripped handrails*



*Figure 2-21: adjustable wall hanger*

Looking into bathroom amenities, the entrance to the bathroom is 80 centimeters wide, with a sloping ramp. There is a 120 centimeter diameter space to turn around, which is the required measurement guideline. The items available for use include; a slip resistant bathtub mat, transfer bench, grab bar, step, bath board and shower chair. Handrails, backrest and special backrest cushion is present to increase the stability of toilet facilities. Lastly, there is enough space to allow bathing while seated in waterproof wheelchairs available on request.



*Figure 2-29: 80 cm wide bathroom entrance*

*Figure 2-28: well-equipped bathroom*



*Figure 2-27: spacious bathroom & waterproof wheelchair*

Keio Plaza Hotel has provided safe and secure environments to ensure all their guests, abled and disabled to have a quality, enjoyable and luxurious time in the hotel. The staff also endeavors to provide extraordinary experiences and spaces for guests to enjoy by

implementing utmost efforts to ensure a safe, secure and comfortable hotel environment for their guests and frequenters.

## 2.4 SUSTAINABLE DEVELOPMENT

Global population exceeded 7 billion people in 2015. There were about 1.6 billion people in the world a century ago and in the 1960's there were about a half of the people there are today. This means that the strain on supply to this growing population also increases in a direct proportion, and resources consequently become scarce. These facts bring us to the term “sustainable development” that was popularized by the Brundtland Commission as well as its concept, and has since been used all over the world when explaining the status of the current unsustainable world and benefits of sustainability. The definition of the term thus is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (Jarvie, n.d.). The basic objectives of sustainable development are to “promote economic and social advancement in ways that avoid environmental degradation, over-exploitation or pollution...” (The Brundtland Report 'Our Common Future' Sustainable Development Goals, 2015).

The Brundtland Report recommended three fundamental components of sustainable development: environmental protection, economic growth and social equity (The Brundtland Report 'Our Common Future' Sustainable Development Goals, 2015). These are worldly referred to as the three pillars of sustainability that put it into perspective. They are mostly depicted through an image that has the three pillars supporting ‘sustainability’.



*Figure 2-30: sustainability pillars. Source: [www.theinclusionsolution.me](http://www.theinclusionsolution.me)*



This paper will focus on environmental sustainability, which is sometimes termed as environmental protection. This is the ability to have responsible interaction with the environment, enabling it to buttress a defined and controlled level of environmental quality that avoids degradation of natural resources while limiting the extraction rates of these resources for an indefinite period of time.

Environmental sustainability has been divided into three main parts, which are widely referred to as the 3Rs. **Reduce** involves sorting out from a pile of material and getting rid of the unimportant material while retaining that which is most important. **Reuse** is a strategy that involves finding new use of the old material because a large amount of it ends up in landfills or creating mountains of dumpsters. **Recycling** is the conversion of waste material to new products, by breaking them down from the original through a physical or chemical process. It usually requires an amount of energy. **Upcycling** is a rare practice in interior design that involves offering new function to material that has been termed as waste, without degrading the original material. This environmental sustainability strategy adds more value to the waste material as the material is usually not broken down as in recycling.

#### **2.4.1 THE UPCYCLING CONCEPT**

V. Lung of One Plus Partnership interior design Company in Hong Kong says that, “as interior designers we waste a lot of material.....” (Knott, 2013) The above statement is true as we can still see designers taking the shortcut and purchasing new furniture and products to fill up space as well as interior designers who may still consider the practice not practical thus conforming to common trends. These common trends require purchase or new material while neglecting the ever piling waste material that has the potential of becoming a treasure in the interior design world.

Upcycling in the current generation is relatively rare, with a majority of upcycling methods visible in works of artists and product designers. A demonstration of the successful practice of upcycling in interior spaces and its positive impacts to the environment is critical to the successful application of concepts of sustainability. Therefore, to render upcycling an achievable practice, all elements affecting the performance of the building’s interior space such as climate, orientation, lighting and economics should be extensively reviewed by

using the Intergrated Design Process. “The Intergrated Design Process asks all the members of the building stakeholder community, and the technical planning, design and construction team to look at the project objectives, and building materials, systems and assemblies from many different perspectives. This approach is a deviation from the typical planning and design process of relying on the expertise of specialists who work in their respective specialties somewhat isolated from each other” (Winchip, 2011).

The Intergrated Design Process is what is needed for successful sustainable designed interior environments (Winchip, 2011). This paper is therefore written with an intention to discuss the use of waste materials through upcycling, to apply environmentally sustainable interior design practice putting into consideration the process mentioned above. The end result should be a functional interior space that is quite distinctive as well as have the ability to prompt conservation and preservation of natural resources.

#### **2.4.1.1 BACKGROUND**

Research on how interior designers utilize environmentally sustainable interior design in their design recommendations has not been conducted. In order to provide a foundation of strategies for sustainable interior design, a study was undertaken to examine the nature of sustainably developed interior design spaces. The approach taken was where a national, Internet based research on Interior Design practitioners was conducted (Kang & Guerin, n.d.).

Data collection method included Random Sampling of “US Interior Design practitioners, drawn from the American Society of Interior Designers (ASID) membership list” (W Lidwell). In this particular survey, a definition of environmentally sustainable interior design practice was given by Global sustainable interior design for indoor environmental quality and interior materials. For each statement above, the respondents were told to rate “(1) frequency of application of the practice (2) importance to the designer’s firm and (3) importance to the designer” (Kang & Guerin, n.d.).

The resulting report to measure the practice showed a major concern on the section of frequency of application. Importance of the designer’s firm found its ratings between the above two extremes. The result also showed a less frequent application of sustainable interior materials. The conclusion made was that practice of environmentally sustainable

interior design did not reach the same degrees as it is perceived. It is therefore important to demonstrate the successful practice of upcycling in interior spaces and its positive impacts as it will prompt a future of sustainably developed interior design.

The beauty of upcycling is that it comes in many magnitudes, whether it is in inexpensive materials put into the realms of luxury or already luxurious goods given life. Whether small or large scale, the benefits are clear, which is to reduce waste and preserve natural raw materials.

#### **2.4.1.1.1 Relationship between upcycling and the consumer**

Waste material and discarded products can inform the character of an interior space, and reflect user intervention with built forms that echo the activity and daily routines within the community. The interior architecture/design has been imagined to stimulate, inspire, revive and be perceived as a cyclic journey of renewal (Patrick, 2018). The Rio Declaration on Environment and Development states that human beings are at the center of concern for sustainable development, and that they deserve a healthy and productive life, harmonious with nature (Rio Declaration on Environment and Development 1992-UiO, n.d.).

To add on, sustainable design for interior environment requires an understanding of environmental concerns, ecosystems, ethics, values, worldwide views and examples of how technology and science can be used to provide solutions to these same environmental problems. This understanding lays a foundation of heightened awareness and empathy by the interior designer to the needs of the intended consumer. Likewise, since it is a symbiotic relationship between the consumer/public and the method of sustainability, it is important that the consumer becomes aware of sustainable living as well as encourage responsible design ethics.

#### **2.4.1.1.2 Advantages of upcycling as a concept of sustainability**

The method promotes better life quality as well as high environmental value to the invented products. This is due to the knowledge that “upcycling is a process that can be repeated in perpetuity of returning materials back to a pliable, usable form without degradation to their latent value-moving resources back up the supply chain.” (Caine, Recycling vs. Upcycling: What is the difference?, 2010). The invented products and ideas are worth inspecting, discussing and incorporating in a space as they end up being ‘conversation starters’.

Upcycling reduces the need for use of raw materials, devoting itself to less energy consumption (Caine, Recycling vs. Upcycling: What is the difference, 2010). This is because it allows the materials to be used as many times as possible. The concept behind this is that this method is never an ending cycle.

While looking at it at a creative perspective, this approach could still keep the sentimental value of a used product (Nawwar Shukriah Ali, 2013). This is when the designer or consumer of the method perceives it from the aesthetic angle. According to Rosalyn Lazaruk, the approach of upcycling will give more personality to a space when there is a creative piece in it, in terms of interior design (Ash, n.d.).

Because the concept is rather new, as discussed earlier, there are obstacles that possibly discourage most interior designers from taking this environmental sustainability approach. This includes material sourcing. Waste products for upcycling may become limited and the researcher recommends waste picking as a solution. This would see a majority of youth playing a significant role in environmental sustainability by reducing waste that would end up in landfills, by rerouting it to upcycle centers or .

#### **2.4.1.2 UPCYCLING DESIGN EXEMPLARS**

##### **2.4.1.2.1 THE LENDAGER GROUP: THE UP-CYCLE HOUSE**

This is an architecture group whose project leader is Anders Lendager. They came up with the Up-cycle House that was built in 2011 through 2013. It is a private house, 140m<sup>2</sup>, located in Nyborg Denmark. The house is built with a construction budget of 1.7 million DKK (UPCYCLE HOUSE-Lendager Group, n.d.), which is equivalent to Ksh 26 million. It reveals how the principle of upcycling is economically advantageous.

The house was chosen due to its manageable scale economy and its short construction period. This has enabled it to be realized while the discussions on sustainable building and upcycling for interior design are still becoming relevant.

##### **2.4.1.2.1.1 Design concept**

The project was approached and designed through sustainable measures that include orientation, thermal adaptation, location of functions, enhancement of daylight and spatial heights. This clearly indicates a successful practice of the Intergrated Design Process. The main focus is the everyday life and daily activities of the consumer especially in areas

associated with resource consumption. The choice of waste materials used saw reduced CO<sub>2</sub> emissions and contributed significantly on the indoor climate.

Most significant upcycled material in the house are the shipping containers (upcycled space), which are given to be in excess. The kitchen floor is clad in tiled champagne cork-leftovers. Walls and floors are covered with OSB panels comprising of woodchips that are bi-products of various production sites, pressed together with glue (Alter, 2014).

The Lendager Group of architects have proved that the upcycle concept has full capacity



*Figure 2-31: wall covered with OSB panels*



*Figure 2-32: champagne cork leftovers as tiles*

of application as an environmentally sustainable interior design practice.

#### **2.4.1.2.2 KERRI HOLLINGSWORTH**

Kerri is an upholstery artist, designer and zero waste advocate as well as the founder of An.ti.quate. She uses upcycled texture to design custom upholstery because furniture upholstery is a constant in the changing trends of interior design. The pieces produced are of quality, are creatively unique and have an environmental conscious edge. Her works involve re-designing, re-imagining and re-purposing historic pieces for use in a modern contemporary context and have proved the ability to design modern furniture that is also sustainable. It also involves refreshing existing pieces, a complete re-upholster or use a piece as a foundation to create a completely new design.

#### 2.4.1.2.2.1 Design techniques

Kerri considers using **statement patterns** to make an impact. This could be a statement color or large scale designs. “.....they are a sure-fire way to add interest and evoke emotion within a home” (Walker, 2019). She also uses **mix and matched colors, patterns and sizes** as well as bold hue. She says that, “A great way to put the finishing touches on a room is to be bold and deliberate with color.....the pieces say a lot about your style and personality than a ‘safe’ neutral option” (Walker, 2019).

**Natural fibres** are of good quality, eco-friendly, breathable and lightweight, which is perfect for adding external texture into an interior space. They make interiors sustainable, sustainable to the environment and users can indulge in a pesticide free environment, since these are not synthetically produced. These natural fibers range from linens to cottons, hemp and more.



*Figure 2-33: ottoman upholstered with natural fibers*

Kerri’s skill has had her use **unexpected textures**. An example would be a project she worked on where the client loved traditional furniture styles and wanted to explore texture as a medium of style and art. She therefore used a black-dyed Mongolian Sheepskin that transformed a mid-century style chair and ottoman into a contemporary style one.



*Figure 2-34: mid-century chair with black-dyed Mongolian Sheepskin*

#### **2.4.1.2.3 JO GIBBS**

Jo is a London based artist, born and raised in Battersea. In 1922, she moved to Como, Italy where she worked as a textile designer and trends forecaster. Here she collaborated with stylists, design studios and Italian archivists which enabled her gain an experience on operations of the textile industry. She later started designing and set up her own design studio in Stockwell, Southern London.

Most of her works are characterized by a technique she invented and named ‘netching’. The netching process includes utilization of pieces of nets or mesh to generate patterns on different surfaces, creating print from the negative spaces. “The Italians are amazing at precision and beautiful, classically styled textiles that are impossible to compete with, but my strength was in experimenting with texture, upcycling and finding new processes to create something different – burning, shaving, glueing, cutting, melting, ripping, waxing, and dripping – very much playing. Working in this way made my work different and fun. I’d also become increasingly more aware of how unethical the textile industry was and wanted to take a different approach.” (Edwards, 2017). This birthed a strong aspiration to design in sustainable and ethical manners hence combined textile printing and upcycling and experimented with wood, metal, ceramics, leather, glass and slate.



*Figure 2-36: 'netching' technique*



*Figure 2-37: upcycled texture; net pattern on chairs*

Jo's designs are identified by the braille like surfaces due to the process that mixes netching, gliding, printing engraving and painting. The objects upcycled include roofing slates. Their texture is extremely unique in color and shape as well as possess a romantic history because they have been through protectors for a long period and discarded in front gardens. The slates vary in age and porosity and are marked by their previous location. Others are chipped with interesting broken edges. The surfaces are softer hence easy to netch on rendering them beautiful. Jo also works with old mirrors and frames because they have history and tell a story. Her inspirations originate from Francesca Wezel who uses eco paints that smell of lemon and has a sensible approach to color that collaborates with hers.



*Figure 2-35: upcycled texture on roofing slates*



## 2.5 WEST AFRICAN ART AND DESIGN

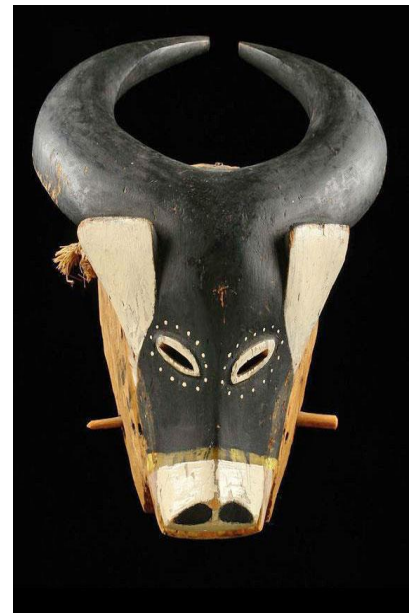
West African art contains a diversity of styles and traditions within the region. Its artistic heritage comprising of sculptures, masks, jewelry and textile is tied so much around its people. Most works created were representations of the natural and spirit worlds where many pieces still bear with them powerful meaning for the region's diverse peoples. The researcher discusses the major forms of art that represent West African Art below.

### 2.5.1 Masks

These pieces of art were rarely produced for decorative purposes. They actively signified the spirit world with a range of shapes and styles rich in meaning. The masks come in different forms; the face masks, helmet masks that cover the whole head, headdresses and masks carried on the shoulders. An example is the Nimba mask of the Baga people in Guinea. They have been described as anthropomorphic, to resemble the human form and zoomorphic, to represent gods in form of animals. Zoomorphic mask designs represented dangerous and powerful nature spirits whereas a combination of human and animal features, that took place occasionally, was used to represent the link between humans and animals. Some were also used as prestige symbols and worn as amulets.



*Figure 2-39: Nimba Mask of the Baga people, Guinea. Source: <https://masksoftheworld.com>*



*Figure 2-38: Guro antelope mask. Source: <https://masksoftheworld.com>*

### 2.5.2 Textiles

West African textile has been known for its “beauty, vitality, color and range” (Arts & Craftwork in West Africa, n.d.). Most of the textile follow the strip-cloth technique where cloth is woven in narrow strips, sewn together. Traditional textile is mainly reserved for important ceremonies. Examples of these textile include the; Kente Cloth, “the most famous expression of Ashanti exuberance” (Arts & Craftwork in West Africa, n.d.) only worn mostly in the southern half of Ghana, reserved for prestigious events. Every design on the cloth has a meaning. The Adinkra Cloth is among the famous West African textile, a colorful cotton cloth material with adinkra symbols stamped to it. The cloth was considered appropriate for funerals because of the name ‘adinkra’, that means ‘goodbye’. The Bogolan Cloth of the Sahel Region of Mali was made specifically for tourists and is more representational. It is also known as ‘bokolanfini’ in Bambara. Another example is the Indigo Cloth, an indigo-dyed cotton cloth worn by the Tuareg as robes and headdresses. It was also used by the Hausa, Dogon, Baoule, Yoruba and Soninke people. Others include the Khasa, a cotton blanket produced by the Fula, Applique banners and flags made by the Fon and Fanti people and the Korhogo Cloth found in Northern Cote d’Ivoire adorned with geometrical designs or fantastical animals.



*Figure 2-41: Kente Cloth of the Ashanti.*  
Source: <https://kuwala.co>

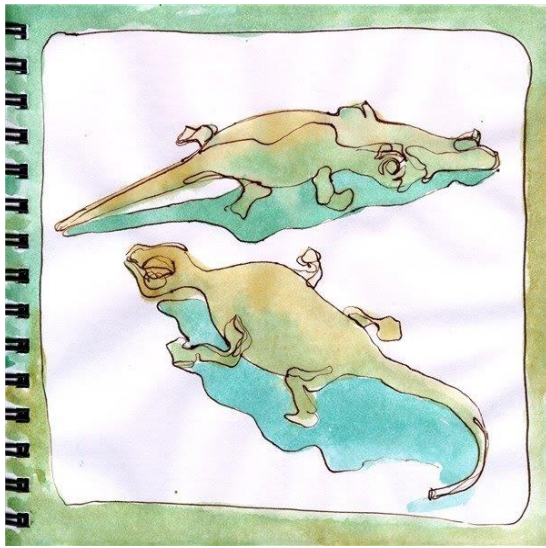


*Figure 2-40: Bogolan Cloth of Mali.*  
Source: <https://www.molo.clothing>

### 2.5.3 Totems and Talismans

Totems in West Africa serve as an emblem for a certain ethnic group. It is usually connected with the original ancestor of a certain ethnic group. Common totems used in West Africa include lions, crocodiles, birds and snakes because a majority of wildlife has disappeared from the region. Talismans are also referred to as fetishes. These are objects

or charms believed to harbor a spirit and take many forms. An example is the “bird skulls and many other animal parts may be used as charms by a learned elder for helping people communicate with their ancestors” (Arts & Craftwork in West Africa, n.d.). Common charms throughout West Africa is the “grigri”, small leather or metal amulets that contain a sacred object and worn around the neck, arm or waist to drive off evil or attract good luck. Grigris are worn by the West African Muslims and are called ‘t’awiz’ in other Islamic countries (Arts & Craftwork in West Africa, n.d.). They contain a small verse of the Quran and are considered effective if made by a saint.



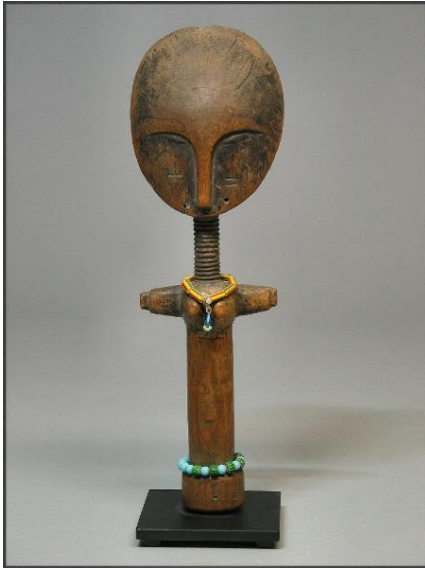
*Figure 2-43: the crocodile and the lizard, totems of West Africa. Source: <https://www.google.com/amp/s/chriscarteart.wordpress.com>*



*Figure 2-42: Gris Gris (talisman). Source: <https://alchetron.com>*

#### **2.5.4 Figurative Sculpture**

African carving received attention in early 20<sup>th</sup> century when Pablo Picasso and Henri Matisse drew inspiration from its approach to the human form. Most of the West African sculpture is carved in wood while funerary sculptural figures are made using terracotta and mud. They were mainly made to fulfill functions using old designs redolent with meaning and were in turn used in connection with ancestors or the spirit worship as some would be placed in shrines. Some were associated with the actual human being, an example being a woman’s fertility, where the Akuaba doll of the Ashanti would be taken care of by an infertile woman to ensure fertility.



*Figure 2-44: Ashanti akua'ba doll. Source: [www.randafricanart.com](http://www.randafricanart.com)*

Other artefacts are the Bronze and Brass Castings and the best known castings created are those of the Benin Kingdom, created using the “cire perdue (lost wax) technique” (Arts & Craftwork in West Africa, n.d.).

With all the above examples, it is evident that there are themes common to all areas of African art. Among the common themes is symbolism, where most forms of art were embedded with a distinguishable meaning, rendering them unique? For design to be functional, it does not have to entirely entail good material quality and craftsmanship.

## 2.6 AFRICAN SYMBOLISM

Man is the only creature possessing creative powers in mental and psychic forms. He can reflect on his experiences and express them with symbols, making memory, imagination and religious experience the symbolizing functions of the humankind. The symbols are then manifested through myths, science, art, icons, rituals, songs, religious emblems ideograms, customary behavior and personifications. They have therefore found spontaneous expression in several religious and secular processes.

According to Professor E.O. James, Historical truth is only one aspect of reality that is “at a deeper level of experience, there are recurrent situations of profound emotional significance which can only find expression in symbolic representation.” With this, there are a number of academics and specialists mentioned in Edwin W Smith’s journal: African

Symbolism, each with their own interpretation of the term ‘symbol’. Dr. Nadel suggests that symbols “are substitutes, capable of ‘initiating’ a particular behavior in the absence of the stimuli normally producing it.” Semantics on the other hand say that a symbol is an outstretched finger pointing to a referent. Consequently, an American sociologist, Kimball Young says that a symbol is something “which stands for, represents or serves to recall a meaningful experience and which directs mental and actionable associations (Smith, 1952).










Therefore, it would be safe to conclude that- with a combination of the above definitions- a symbol has a relation to something else, a referent, picturing their meaning, an instrument for comprehending this referent, a part representing the whole to recall an absent referent (Smith, 1952).

## 2.6.1 TYPES OF SYMBOLS

### 2.6.1.1 Artificial symbols.

These are symbols that are created by an individual or by a group of people. Their main aim is to represent ideas where the symbols relate to a believer’s own experience. Cloth in Ghana is used to identify the status of a person using traditional symbols such as the adinkra symbols and the type of garment style made with the cloth. The Adinkra symbols are visual symbols created by the Ashanti of Ghana and reveal a cultural identity that is rich and educative, used by the members of this society in their daily activities.

*Table 2-1: The adinkra symbols. Source: www.eajournals.org*

SYMBOLS	NAMES OF SYMBOLS	LITERAL MEANINGS	ROLES
	<i>Akoko nan</i>	“The hen’s feet”	Symbol of parental care
	<i>Akoma</i>	“The heart”	Symbol of patience and endurance
	<i>Akoma ntoaso</i>	“Extension of the hearts”	Symbol of understanding and agreement
	<i>Bese saka</i>	“Sack of cola nuts”	Symbol of abundance, affluence, power, togetherness and unity
	<i>Bi nka bi</i>	“Bite not one another”	Symbol of peace and harmony
	<i>Eban</i>	“Fence”	Symbol of protection, security and safety
	<i>Ese ne tekrema</i>	“The teeth and the tongue”	Symbol of friendship and interdependence
	<i>Me ware wo</i>	“I shall marry you”	Symbol of commitment
	<i>Mpatapo</i>	“Reconciliation Knot”	Symbol of reconciliation and peace-making
	<i>Nkonsonkonson</i>	“Chain link”	Symbol of unity and human relations

### **2.6.1.2 Communicative symbols.**

These are usually used to communicate knowledge and information. They often convey concepts, ideas and emotions purposefully. A good example would be the Shaka hand gesture. This is a non-verbal gesture, a symbol for greetings that involves making a fist, extending the thumb and pinky finger while other fingers are against the palm to make a V sign. The palm faces the recipient, while rocking the hand side to side. The Shaka is a symbol of the Aloha spirit, which is a way to show widespread friendship attitude, understanding, and compassion as well as say thank you.



*Figure 2-45: the Shaka hand gesture. Source: amazon.com*

### **2.6.1.3 Ritualistic symbols.**

These are meant to instruct and indoctrinate the devotees about the article of their faith which is mostly liturgical. Research shows that some ritual symbols associated with a divine quality, are rooted from an emotion experienced. Among the Igbo people, during devotional rituals, diviners use water, mirror, and lobes of kola-nuts to achieve a certain purpose. An example would be the Kola-nuts, the highest symbol of hospitality among the Igbo of Nigeria, used in the traditional Igbo man's day or traditional public ceremony that usually begins with a folk prayer. This is followed by an invitation of the presence of the dead-living ancestors with three rituals items, oji (kola-nut), nzu (white chalk), and mmanya ngwuo (palm wine) by the head of the family or priest. With the wine he pours a libation on the floor, which symbolically opens the earth through which the ancestors enter the physical world from the spirit world underground. He draws lines on the floor using

the white chalk to pray for the safe cyclic passage of the ancestors to and from the spirit world. The kola-nut is broken and shared among the visible men and the invisible men (spirit beings), after which the wine is served. Eating of kola-nuts and drinking of palm wine is a sign of the spiritual communion and unity intended to bring life and prosperity to the Igbo people.



*Figure 2-46: lobes of Kola-nuts. Source: [igbopeopleofnigeria.weebly.com](http://igbopeopleofnigeria.weebly.com)*

#### **2.6.1.4 Artistic symbols.**

The main purpose of artistic symbols is to depict aesthetic functions of the referent. They are a common feature in shrines in native African communities. An example is the figurative double faced Chokwe ancestral mask. This mask is worn during traditional dances among the Chokwe of Zambia and represents the first female Lunda chief, Lweji of the Chitolu village in Zambia.



*Figure 2-47: Double faced Chokwe ancestral mask. Source: <https://africa.uima.edu>*

### **2.6.2 Functions of symbols in the African culture**

Symbols have both cognitive and emotional meaning. The signs on artistic objects reminds and urges individuals to lead a life according to the principles underlying the particular symbol, failure to which, consequences are faced. They are a means to communicate inner essence in that they have found spontaneous expression in several religious and secular processes, manifesting them in icons, rituals, songs, myths, religious emblems and ideograms, customary behavior and personifications.

Symbols are often a means of communication, where those of religious art perceive knowledge of historical and religious occurrence. Secondly, they are agents of identification in that individuals of the same denomination or faith wearing an emblem of the same cult can identify each other despite being acquaintances. Symbols help to maintain order and coherence, mostly using art objects. The art object possesses power to impress religious beliefs to devotees, easily organizing followers in an orderly manner.

Above all, preservation of culture is the major significance of African symbols. They are passed on to younger generations with information about their sect or culture. The above functions assist to achieve higher mystical exercise and spiritual development such as divination, medication and education.

### **2.7 THE ADINKRA SYMBOLS**

There are around 400 known Adinkra symbols. Most of these symbols and their meanings have a unique, literal, symbolic and proverbial expressions. Adinkra symbols are visual symbols created by the Ashanti and are used in fabric, pottery, logos, architecture, advertising and metalwork. They provide a unique representation of the cultural expressions, concepts, values and traditional mythology of the Akan people of Ghana and the Gyaaman people of Ivory Coast. The messages presented by the symbols have an appealing convey of wisdom, life aspects or the environment.



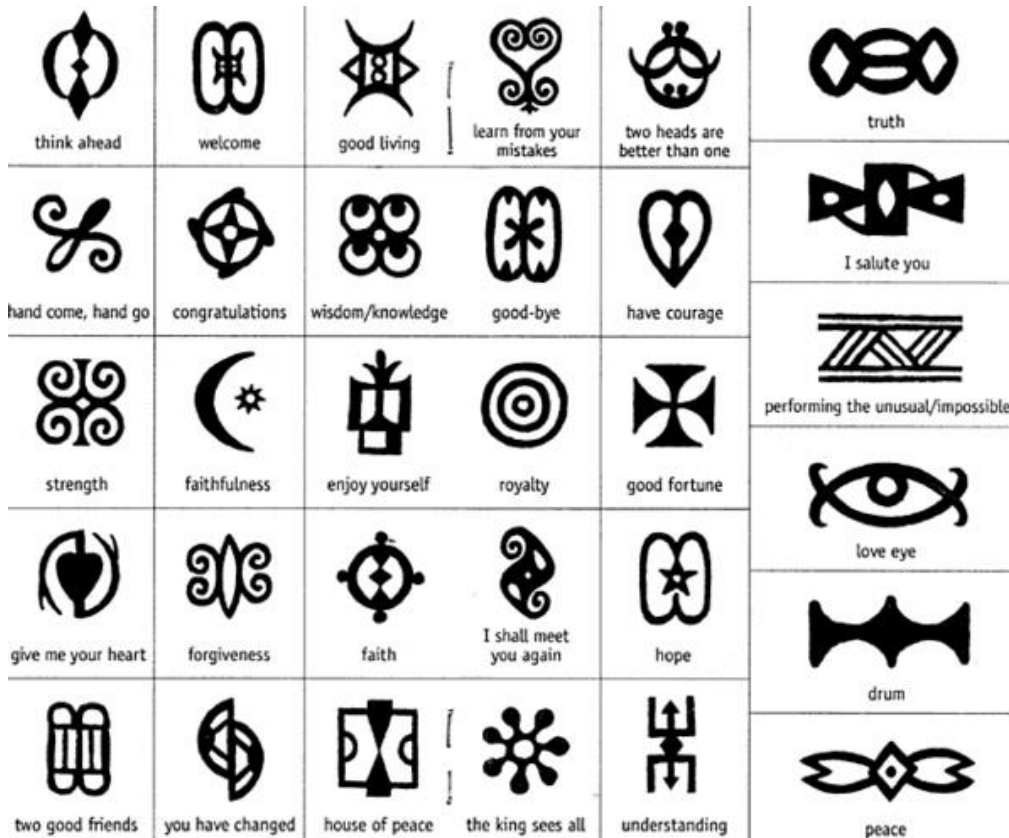


Figure 2-48: Adinkra symbols of the Akan of Ghana. Source: <https://afrolegends.com>

### 2.8.1 History of the Adinkra Cloth and Symbols

By the 16<sup>th</sup> century, the Akan people had developed significant weaving skills. This took place in Ntonso (known as Begho today) which was the most important weaving center in Ghana at the time. Adinkra, was originally produced by the Gyaaman clan of the Brong region. It featured in the right of royalty and spiritual leadership and was used for important ceremonies mostly funerals, corresponding to the meaning behind it which is ‘goodbye’ or ‘farewell’.

The birth of Adinkra prints took place after a military conflict arose, caused by the Gyaaman trying to copy Asante’s Golden Stool (the symbol for the Asante nation). Nana Kofi Adinkra, the Gyaaman king was killed in the process and his Adinkra robe taken as a trophy by the Asante king, Nana Osei Bonsu-Panyin. A special ink used in printing, adinkra aduru was also developed as well as the process of printing designs onto the cotton cloth.

The Asante also developed an amount of Adinkra symbology and incorporated their own philosophies and culture into them.

The adinkra aduru was obtained by boiling the bark of the Badie tree with iron slag. The ink was not fixed hence the fabric was not washed. The methods of production of the print on the cloth included block-stamping and screen-printing.

### **2.8.2 The Adinkra Cloth**

This was produced in Ghana and Cote d'Ivoire. It has traditional Akan symbols printed on it that represents proverbs and maxims, record historical events, express particular attitudes or concepts uniquely related to the symbol's abstract shapes. The funeral cloth had three shades of color, red, black and brown. Stamping was the method used that required pressing the dye in sequence into the cotton cloth, secured to the ground by pegs. Today, batik method has been adopted with hope of using indelible dye so as to render the cloth washable.



*Figure 2-49: the adinkra cloth. Source: [nomadicdecorator.com](http://nomadicdecorator.com)*

In the modern world, adinkra symbols have now been incorporated into modern commercial designs and their related meaning is an added significance to the product, architecture and sculpture. The traditional methods of production of prints on the cloth are still in use and the occasions to which the attire is used has also changed where it can be worn in weddings and initiation rites ceremonies. The fabric for export uses more sanitized symbology

## 2.9 AFRICAN DESIGN EXEMPLARS

### 2.9.1 CHRISSE AMUAH: AMWA DESIGNS

Chrissa is a talented designer and entrepreneur as well as the founder and Creative director of her United Kingdom based AMWA Designs studio, an Adinkra inspired luxury home ware and interiors brand. She was born and raised in London but has her family background originating from Ghana. Her connection to the Adinkra Symbols began when she visited Ghana and other African countries and noticed that most designs revolved around the Westerner's template. Chrissa thought that Adinkra symbols would be the best way to revive and foster a progress to Africa's own original beauty and authenticity. The symbols serve decorative functions and present traditional wisdoms and adages.

AMWA Designs create handmade textiles and print designs for home, commercial spaces as well as fashion. Chrissa has re-interpreted the Adinkra symbols and used them in a contemporary way that is her own, to speak to the contemporary generation that lives under the 'forward thinking' lifestyle. She says that "if our beings are nurtured into the world everyday-by the power of symbolic osmosis-we all share the opportunity to walk each step with intended harmony" (Chrissa Amuah, a talented design entrepreneur inspired by Ghana's Adinkra symbols in a contemporary way, 2019)



*Figure 2-50: wallpaper: adinkra symbol*



*Figure 2-51: adinkra print season on pillow case*

Her designs express beauty and authenticity of exceptional craftsmanship, drafted and produced under the principle of homes, private spaces and beings should be enveloped with beautiful furnishing and textile that evoke powerful positive thoughts within people. They combine beautiful design and meaningful design because her thoughts are that much of what is mass produced relies on trends which are empty. The product range includes; cushions, wallpaper, fabric, coffee tables, lampshades and customized designs.



*Figure 2-53: adinkra wallpaper in a restaurant*



*Figure 2-52: customized adinkra symbols on lampshades*

### **2.9.2 VAGABOND FOLK ART: VIRGINIA VIVIER**

This is a company created by Virginia Vivier who comes Tucson, Arizona. Her inspirations come from tribal, folk art and bright colors which she states are “...my main obsessions!” (htt1). Among the folk art designs is the Adinkra symbols that she has used as motifs for her designs. The print designs are found at home and commercial spaces such as restaurants and hotel rooms. Interpretation of the symbols is for contemporary design, serving decorative purposes retaining the unique representation of cultural expressions and meanings that continue to convey wisdom, life aspects or environmental aspects.



*Figure 2-55: wallpaper; adinkra symbol motifs*



*Figure 2-54: table runner with the adinkra symbols*

The African Adinkra tribal symbols have been used in the design for apparel, table runners, placemats, bedding, pillows, quilts and wallpaper in black, ivory, amp and rust. The design also sees adinkra lamp shade and adinkra quilts.

## 2.10 DESIGN PROCESS

Process would be defined as a series of steps taken so as to attain or arrive at a particular end. However, according to Ben Burns of Futur, “Process is Design. Design is process. You are NOT selling your design. What you sell is the process.” The design process is therefore, according to the researcher, a series of actions that are sellable and assists designers to hone their skills by realizing and learning that it is the most interesting phase of design. It includes establishing what the materials used are, the methods in which the materials are sourced and used and the amount of time it takes to produce a visual or tactile design.

There are so many factors that influence the process, these include; the duration, the type of project, budget and deadlines, and thus it becomes difficult to come up with a steady plan. There is simply no process that fits all. The researcher therefore studied a couple of processes that already exist and established one that fit into her timeline. The process includes;

### 2.10.1 Design strategy

This is understanding the philosophy and the overall concept that will provide the intended results. It includes; a review of theoretical literature to determine what theories already exist that match the researcher’s study, the relationship between them and the researcher’s study as well as determining the degree to which certain theories have been investigated. Above all, the design strategy involves identifying and visiting a site that has problems that have possible solutions in the four thematic areas, interior architecture, landscape architecture, exhibition and display and furniture. A written proposal of the project will be established, which mainly includes recommendations for a new design. The designer will consult with her supervisor and client so as to develop a clear and achievable design strategy.

### **2.10.2 Research and Analysis**

This process employs research methodology techniques and comes up with suitable data collection procedures that fit the research study. This includes interviews, observation and use of documentary sources to assist in identifying the problems in the site already chosen. An analysis of the data through a content analysis, narrative analysis and discourse analysis will help the researcher answer the already developed research questions. This will assist to develop design goals together with the management, goals that are based on the findings of the research to achieve the main research objective.

### **2.10.3 Ideation**

According to the study objectives, the designer will come up with pictorial sketches also based on the inspirations-African design and upcycling- to come up with solutions of possible challenges identified in the site. This process will put into consideration the main design philosophy, universal design and the above inspirations will be a means to buttress this philosophy.

### **2.10.4 Interactive design**

This stage will have prototypes and mockups that match the sketches to come up with a visual proposal for the project. It will also include a workflow that will determine deadlines that will assist in covering all the four thematic areas within the stipulated time as well as design goals established in the research phase. If the goals are not clear, the designer will have to go back and reread the objectives of the study.

### **2.10.5 Evaluation**

An evaluation of the proposal while consulting the management about their specifics, the cost to produce the prototypes and mockups will take place. Together with the above, this process will help identify whether the project will continue and whether objectives have been met or whether the designer will have to revisit the ideation process.

### **2.10.6 Production**

After a complete approval from the management and supervisor, visual and tangible products will be produced. The production process involves the development of the approved products to life-like forms that are usable. A technical testing will be undertaken, whereby the designer will take part in an exhibition and display exercise to showcase her products.

## 2.11 CONCLUSION

It is unlikely that any product or space in an environment could ever be utilized by all persons under all conditions. Due to this, it may be more opportune to consider universal design as a process rather than an achievement (Story, Mueller, & Mace, *The Universal Design File: Designing for people of all ages and abilities.*). Universal Design is good design and good design is integrated into the aesthetic of the design without introducing complexity because the main aim of the approach is to retain the notion that design is fundamental, this time suiting anyone to extensive usability and comfort.

On the other hand, Africa is the source of vibrant design and inspiration in the world. Despite the lack of particular effort to preserve most of African designs, most western artists borrowed aspects from it to create world renowned artworks. A symbol on the other hand becomes an instrument for comprehending a referent's meaning and the Adinkra symbols are designed to offer a visual effect that is based on the repetition of the self-similar and different patterns that are in different sizes. Although details of each symbol may vary, modern motifs maintain the basic characteristics of the Adinkra symbols therefore allowing an opportunity for exploration in the design industry.

Consequently, waste is currently a big issue and the upcycle method of sustainability is a sure way of reducing the need for use of new raw materials while wasting them. The concept may be rare and misconceptions of inadequate luxury formed, thus resulting to negative meaning and understanding to those unaware of the nature of art, time, effort and techniques used to create desirable designs. The beauty of upcycling comes in many magnitudes and every design is worth inspecting and discussing. Upcycled interior design has a potential in the design industry and the researcher will have a chance to equip herself with this knowledge to hone her skills while heightening other people's awareness on sustainable living and responsible design ethics.

## Chapter 3

### 3.0 RESEARCH METHODOLOGY

#### 3.1 OVERVIEW

The chapter will contain qualitative techniques of research that will be conducted through a survey method. Qualitative research is very broad with many theoretical approaches and research methods. It aims to answer questions of a phenomenon that is the “what”, “why” and “how” instead of questions of “how much” or “how many” as in the quantitative research. The researcher therefore intends to use observation, interviews and documentary sources such as site maps, architectural project drawings and plans as data collection methods. This will assist the gathering of more insight on the state as well as the aesthetic and accessibility nature of the case study, Freetown Recreation Center, how they have been applied and how the above variables affect beauty, accessibility and empathy that appeals to the Center’s young and old frequenters.

#### 3.2 RESEARCH DESIGN

A good qualitative analysis should give ideas about social life, as well as what participants claim about it. It should provide an exhaustive description of the study and provide a credible account of ‘what is going on’ (J Green, 2010) Qualitative researchers conform to some form of naturalistic interpretive approach to inquiry. This method therefore, for this research study, attempts to collect data from members of population in order to resolve on the current nature of that particular population. It is also important in the research of the meaning of interactions, processes, behaviors, experiences and attitude, while describing and giving in-depth insight about existing phenomena through instruments that have been aforementioned. After an analysis of the information gathered, the researcher will present a full report of the results and findings, sketches/drawings, three dimensional renders and models of the proposed recommendations as well as possible concepts.

#### 3.3 TARGET POPULATION

Every restaurant offers a unique combination of characteristics thus have a broad spectrum of frequenters. The study will have a population of frequenters of an age ranging from 15 to 65 years of age. However, the researcher wishes to apply the following target population segmentations to assist identify a specific population suitable for the research. This includes the location of the restaurant, the size of the facility, amenities preferred by a



majority of frequenters and the frequenter type and the number of guests that visit the restaurant/bar on an everyday basis.

### 3.4 SAMPLING METHODS

Sampling techniques can be used hand in hand with one another or can be used individually within a qualitative research. This study will see an incorporation of two sampling methods. This is because the population chosen is not easily accessible and wide all the same which might result to little to no data gathered for the research study. To add on, the researcher desires to perform accurate data collection and analysis that will assist in effective data presentation for an effective answering of the research questions.

#### 3.4.1 Purposeful Sampling.

The researcher intends to enlist participants who can provide an in-depth and detailed information in regards to this research. This method is highly subjective and selective. The researcher will be required to generate qualifying criteria that each participant has to meet so as to be considered important in the study. It could include the restaurant staff or the managerial team. Purposeful sampling method relies on the criteria that the participants acquire a leveled foundation.

#### 3.4.2 Convenience Sampling.

For this research study, the population mentioned will require a convenience sampling that will assist the researcher to recruit participants who are easily accessible and convenient. This might include utilizing geographical location and resources that make participant recruitment of ample convenience. Permission to perform this task will be required from the administration of the case study site intended for the study.

*Table 3-1; sample population for the study. (Author, 2019)*

<b>SAMPLE POPULATION</b>	
Staff members	7
Managers	1
Caretakers	1
Older adults	11
Young adults	8

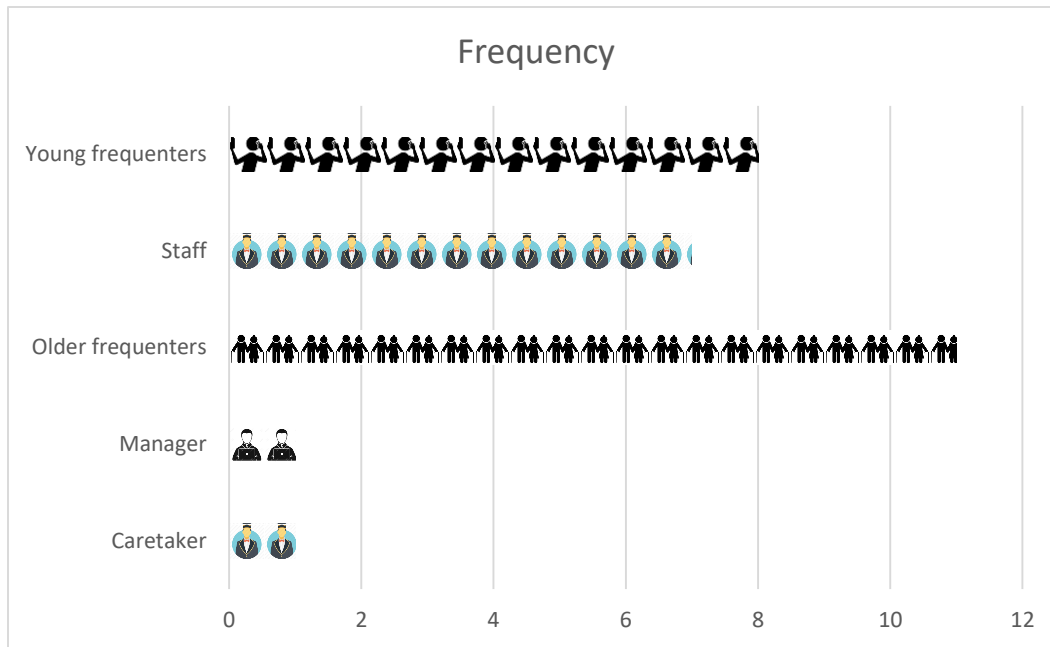


Figure 3-1: Frequency distribution pictogram of sample size. Source: (Author, 2020)

### 3.5 DATA COLLECTION PROCEDURES

#### 3.5.1 Interviews.

Interviews are useful to explore experiences, views, opinions or beliefs on specific matters. It is a product of interaction between the interviewer and interviewee. Accounts can be explored and compared and compared to others to develop an understanding of the underlying structures of beliefs (J Green, 2010)

The most commonly used interview types are between the structured and informal extremes, being expressed as narrative, in-depth or semi-structured interviews. In a semi-structured interview, the researcher sets the agenda in terms of topics to cover. However, the interviewees' responses determine the kind of information produced about those topics and the relative importance to each of them (J Green, 2010). An in-depth interview allows an amount of time for the interviewee to develop a 'story' for the issues presented that are most important to them. In a narrative interview, there is facilitation of the interviewee to tell their story.

This research study will be primarily concerned with a semi-structured and a narrative where after an approval from the respective supervisor, the researcher will proceed for field

work. There will be face to face interview sessions with key informants from the site as well as selected participants convenient for the research study. The researcher will develop a topic list before conducting the interview, which will be used in a flexible manner. The setting and skills of the researcher will be of paramount importance for example, building a sense of trust, the way of phrasing questions or giving room to the interviewee to narrate their story as well as their ability to study body language and facial expressions.

A recording device may be used to avoid distortion of data. The sessions will require an amount of cooperation between the interviewer and interviewee thus prior notification to the key participants will be required to take place. The researcher intends to apply high accuracy levels during this research method to increase chances of effective data analysis and presentation.

### **3.5.2 Observation**

Observational methods are used to understand phenomena by studying peoples' accounts and actions in an everyday context. According to Becker and Geer (1957), "the most complete form of the sociological datum...is the form in which the participant observer gathers it: An observation of some social event, the events which precede and follow it, and explanations of its meaning by participants and spectators, before, during and after its occurrence. Participant observation can thus provide a yardstick against which to measure the completeness of data gathered in other ways, a model which can serve to let us know what orders of information escape us when we use other methods" (J Green, 2010).

Observation allows the researcher to record the humane and unremarkable features of everyday life that did not get noticed and deemed worth commenting on by the interviewee during the sessions. It provides the purest form of data that is collected from natural occurrences where behavior and responses can be observed in sight and site. It also illustrates the truth about an event, situation or process in contrast to interview accounts or documented data.

There are different observational methods that include; non-participant observation where there is use of recording devices, participant observation or ethnography. It requires the researcher to get involved and participate overtly and covertly in people's daily lives for an extended period of time, watching everyday happenings, listening to what is said and

collecting a few documents or artefacts. Due to the assumed nature of the schedule of the restaurants, the researcher intends to make simple, unobtrusive participant observation. This enables in gathering firsthand information in the field giving the observer a whole perspective so as to understand the research site and study being undertaken. Information will be recorded in form of field notes, photographs and ticking out a checklist constructed prior the observation process.

### **3.5.3 Documentary Sources**

Secondary data can be efficient for use for many qualitative questions. Potential sources include public records, private documents, research publications, mass media sources that is a wide range of written sources that might be available. Documentary sources can be used as “background” information, used only to provide an orientation to the researcher in refining the research questions. Secondly, they may be used as part of the collection of data that will be analyzed to answer research questions. The researcher will however, work with documentary sources as a refinement of the research questions.

Advantages of using available documents is its abundance and availability. Modern society offers a mass of data from public records, personal documents, and mass media outputs to research outputs and more. Secondly, for some research problems, documents will be the only source of data. An example would be in historical research, where there may be no living people to interview. Thus the researcher can rely on witness records recorded at a previous time. Documentary sources are an advantage to researchers not comfortable with relating to people. Lastly, projects solely reliant on publicly available sources are unlikely to require ethical approval to conduct.

## **3.6 DATA ANALYSIS TOOLS**

The first instinct that comes when one receives data is to find matching patterns and relationships that will attach meaning to it. For the researcher to move from mass of data to meaningful insights, they need to analyze words, images, observations and symbols to derive absolute meaning.

### **3.6.1 Content Analysis.**

This begins with getting familiar with the data from interviewee responses. Most of it is in a narrative state, hence reading several times will assist in establishing existing patterns.

Secondly, revisiting their research objectives to identify the questions that can be answered through the collected data. This will provide clarity among a mass of text and images, to answer the appropriate questions concerning the study. It will also include an analysis of documented information found concerning the recreation center.

### **3.6.2 Development of a Framework.**

The researcher could develop a framework, where they identify broad concepts, behaviors, and phrases and provide an index to them. This will help in labelling data to avoid a back and forth movement through unnecessary miscellaneous information. Once the data is indexed, the researcher will identify patterns and connections. They may begin to identify themes, looking for most common responses, for example from interviews conducted. Consequently, the researcher may identify patterns that can answer the research questions as well as find areas that require further evaluation.

Table 3-2: logical framework for research. (Author, 2019)

<b>Objective 1:</b> To investigate the nature of spaces and determine its effect to the center's young and old frequenters.				
<b>Data Needs</b>	<b>Data Sources</b>	<b>Data Collection Tools</b>	<b>Analysis Method</b>	<b>Expected Output</b>
The nature of spaces at Freetown Recreation Center. Effects of the spaces to the young and old adult frequenters.	Freetown Recreation Center.  Online research.	Observation <b>(photography)</b>  Interviews <b>(note taking)</b>	Narrative analysis  Content analysis	To understand how Freetown's frequenters get affected by the nature of the center's spaces.
<b>Objective 2:</b> To assess existing design strategies and determine how it affects accessibility, beauty and empathy in the interior design at Freetown Recreation Center.				
<b>Data Needs</b>	<b>Data Sources</b>	<b>Data Collection Tools</b>	<b>Analysis Method</b>	<b>Expected Output</b>
Existing design strategies in other restaurants as well as Freetown's. Effects of the strategies on accessibility, beauty and empathy qualities of the interior design.	Freetown Recreation Center.  Online research on projects involving universal design, African design and sustainability.	Observation <b>(photography)</b>  Interviews <b>(note taking)</b>	Content analysis	Understand existing design strategies in existing restaurants as well as Freetown. Determine how these strategies affect the design, aesthetics and empathy positively

**Objective 3:** To examine the status of Freetown Recreation Center and assess its influence on design for the disabled.

<b>Data Needs</b>	<b>Data Sources</b>	<b>Data Collection Tools</b>	<b>Analysis Method</b>	<b>Expected Output</b>
The status of spaces at Freetown Recreation Center.	Freetown Recreation Center.  Online Research	Observation <b>(photography and direct participation)</b>  Interviews <b>(note taking)</b>	Discourse analysis  Narrative analysis	Determine the current status of Freetown Recreation Center.  Understand the influence, advantages and disadvantages of the current state of design of space in F.R.C to the disabled frequenters.

**Objective 4:** To establish new designs that achieve accessible, beautiful and empathetic qualities for the spaces at Freetown Recreation Center that appeal to the young and old adult frequenters.

<b>Data Needs</b>	<b>Data Sources</b>	<b>Data Collection Tools</b>	<b>Analysis Method</b>	<b>Expected Output</b>
Recommendation to new effective design for F.R.C's spaces.	Reference to chosen design exemplars for inspiration.  (online research)	Note taking.	Narrative analysis.	To determine the required and most relevant changes to the site to achieve objectives.

### **3.6.3 Narrative Analysis**

The researcher will analyze content from interviewees and from the observation made at the field. This tool usually focuses on reformulating stories given to the researcher and experiences of participants so as to answer the research questions and meet the intended objective of the whole study.

### **3.6.4 Discourse Analysis**

For this research, the researcher finds it important to analyze interactions with people, interactions that result to naturally occurring spoken interactions. She will also look into the social context in which the communication between the interviewer and interviewee will take place as well as the day to day environment of the participant in the respective study site.

## **3.7 DATA PRESENTATION METHODS**

Qualitative analysis contains data consists of words, images, symbols, observations and more. Therefore, this data is not quantifiable and requires presentation methods that can be easily understood even by the ‘man on the street’. The following are the presentation methods the researcher wishes to use in the research study. (1) Tabulation, which includes labeled, titled tables, with headings of columns and rows, presenting data in order to avoid frequent referencing of text. Vertical arrangement of the table eases scanning of data.

Secondly, the researcher intends to use visual display in form of bar charts. The purpose is to have quick visual impression where the reader will easily understand visual presentations. The data to be displayed must be simple so as to have a success to conveying the intended message. Visual presentations intend to be produced carefully with appropriate scales to eliminate distortion of data. Bar charts represent data in a chronological order, with the use of color which reduces chances of confusion.

Pictograms are visually engaging. They are intended to convey data in the layman’s language for a reader who finds it difficult to comprehend text or ‘complex’ bar charts. Symbols are used to represent data and the number of pictures is always proportional to the frequency size. One picture depicts a fixed number while a fraction of a picture or symbol would represent a smaller number. Pictograms are useful for visualizing and presenting small sets of data, much like this research study.



Spot maps show the geographical location of the specific attribute being researched on and the population density of the scope of study. A dot could depict a fixed number of cases while a shading using different colors could represent the geographical scope intended for the study. It is an easy and interesting method of data presentation for the reader that may not understand complex text.

### 3.8 CONCLUSION

A majority of regulars at Freetown Recreation Center are both abled and disabled. With this, a number of the population has encountered obstacles in this public recreation facility which leads to a desire to have enough room between furniture, accommodative entrances and exits, proper signage, good lighting and more. Therefore the researcher came up with research strategies to identify these challenges that will provide possible opportunities that will eventually render the restaurant space accessible, beautiful and empathetic to the young and old frequenters.

## Chapter 4

### 4.0 SITE ANALYSIS AND INTERPRETATION OF FINDINGS

#### 4.1 INTRODUCTION

This chapter will deal with processes of conducting overall analysis of the data collected, which is a descriptive and quantitative analysis, to check and confirm the trustworthiness of the data. The descriptive analysis will introduce the reader to a general background of the site, a geographical analysis and climatic conditions of the region within which the site is located as well as the existing conditions of the spaces within the site. The existing conditions of the site will be described in detail narrowing down to the four main themes of the project which are interior architecture, landscape architecture, furniture design and exhibition and display. The above data will be presented as they are using photographs and brief narratives to enable the researcher arrange facts in order so as to identify links, patterns and common themes for interpretation. The quantitative analysis will assist to understand what the results gathered mean and how significant they are. Presentation of findings from observation and the feedback sessions conducted will be done using bar charts, pictograms and employment of brief narrations.

#### 4.2 QUALITATIVE ANALYSIS

This section aims at providing information regarding the profile of the site, in this case Freetown Recreation Center. This includes general background information of the site, a geographical analysis and climatic conditions-that will be presented in the form of bar charts-as well as a description of access to site and circulation within the site. Consequently, a detailed description of the existing state and design strategies of the interior and exterior spaces, furniture design, exhibition and display and landscape architecture will be provided.

##### **4.2.1 General background of the site**

Freetown Recreation Center was constructed in July 2012. Despite having been constructed recently, the design subjects have become worn out while others are very old and quite basic. It is a recent space meaning that it would receive a massive preference once the design is up to par with the changing times.

### 4.2.2 Geographical analysis

Freetown Recreation Center is a bar and restaurant located in Kamulu, Ruai near a stage called Stage 26, along Kangundo road. This facility is approximately 30.4 kilometers from Nairobi town through A104 and Eastern bypass, travelling by a vehicle, which translates to approximately 1 hour and 7 minutes.

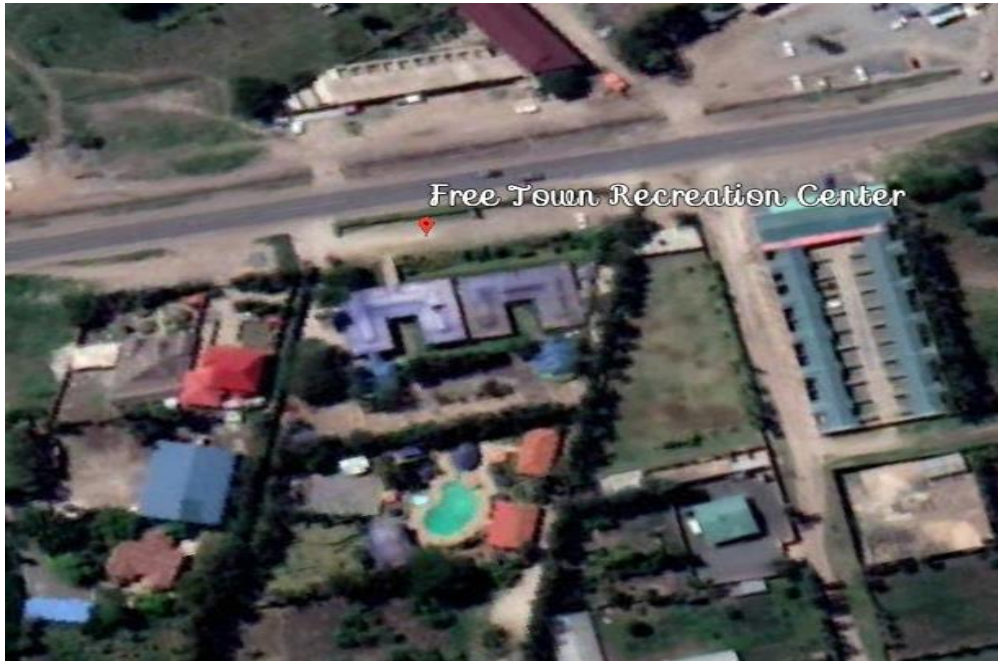


Figure 4-1: Freetown Recreation Center. Source: <https://earth.app.goo.gl/3haCWM>

### 4.2.3 Climatic conditions

The least amount of rainfall occurs in July where the average in this month is 10 millimeters. Most precipitation falls in April, with an average of 155 millimeters.

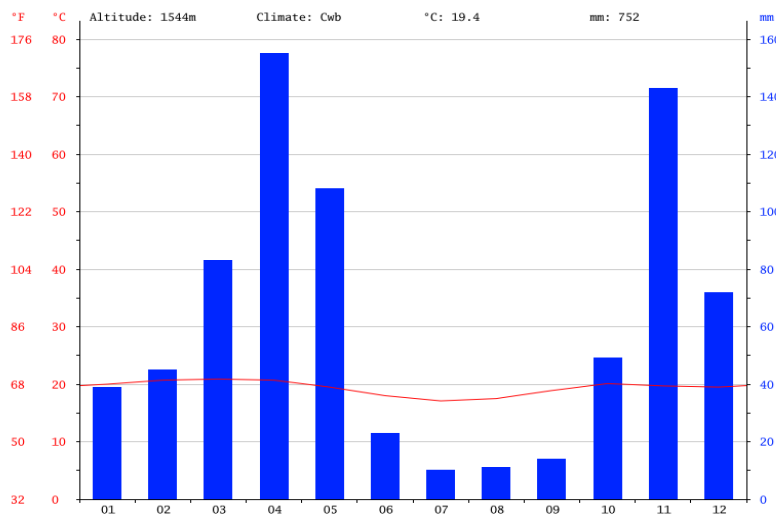


Figure 4-2: Ruai climate graph. Source: <https://en.climate-data.org>

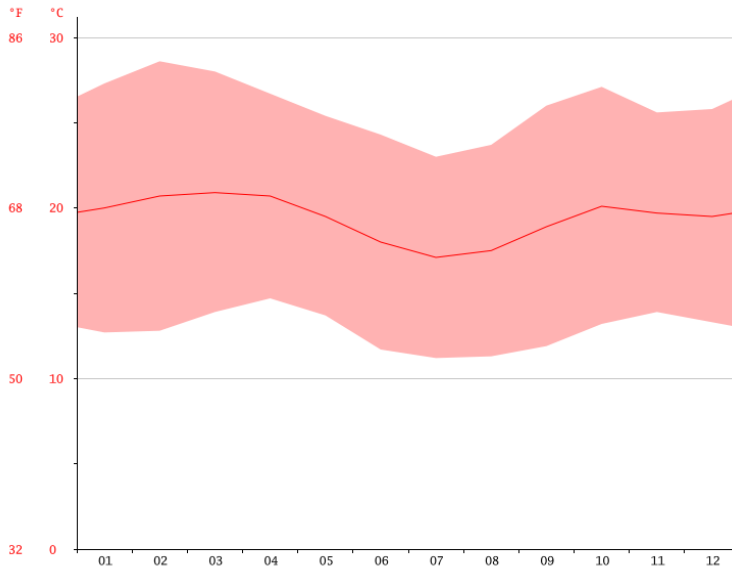


Figure 4-4: Ruai temperature line graph. Source: <https://en.climate-data.org>

Temperatures in Ruai are highest on average in March, at around 20.9°C. In July, the average temperature is 17.1°C, indicating the lowest average temperature of the whole year.

### RUAI WEATHER BY MONTH // WEATHER AVERAGES

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	20	20.7	20.9	20.7	19.5	18	17.1	17.5	18.9	20.1	19.7	19.5
Min. Temperature (°C)	12.7	12.8	13.9	14.7	13.7	11.7	11.2	11.3	11.9	13.2	13.9	13.3
Max. Temperature (°C)	27.3	28.6	28	26.7	25.4	24.3	23	23.7	26	27.1	25.6	25.8
Avg. Temperature (°F)	68.0	69.3	69.6	69.3	67.1	64.4	62.8	63.5	66.0	68.2	67.5	67.1
Min. Temperature (°F)	54.9	55.0	57.0	58.5	56.7	53.1	52.2	52.3	53.4	55.8	57.0	55.9
Max. Temperature (°F)	81.1	83.5	82.4	80.1	77.7	75.7	73.4	74.7	78.8	80.8	78.1	78.4
Precipitation / Rainfall (mm)	39	45	83	155	108	23	10	11	14	49	143	72

Figure 4-3: Ruai climate and temperature average by month. Source: <https://en.climate-data.org>

The tabulation above provides a summary of Ruai’s weather and climatic conditions. The variation in the precipitation between the driest and wettest months is 145 millimeters. The average temperatures vary during the year by approximately 3.80°C.

#### **4.2.4 Access and Circulation**

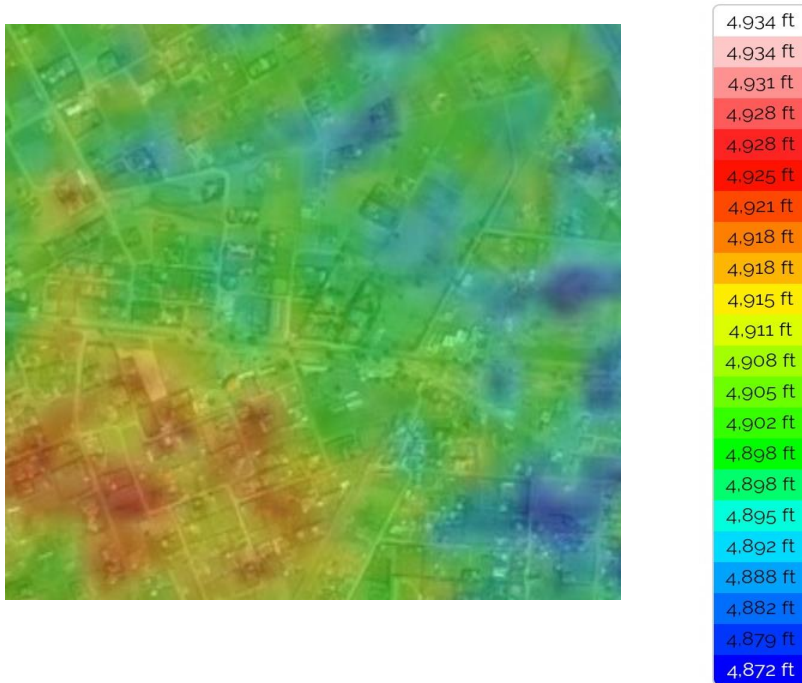
Access and circulation depends on the location of the site, whether urban, sub-urban or extremely rural. Access allows direct interaction between the main pathways within and without the site for better connectivity. Circulation spaces allow easy access for people, regardless of age or ability as well as maximize access to daylight and natural ventilation. The study focuses on pedestrian circulation, identifying pathways that allow seamless circulation through and around the site and vehicular circulation. This will in turn assist the researcher identify areas that respond to Universal Design strategies.

Freetown recreation Center is surrounded by business areas, residential households and bare land as plots for sale. This has enabled it to create a center area that combines all these areas surrounding and bring them together in one place. This therefore means that the recreation center should automatically allow direct connection with the neighborhood through its design strategies, especially because they involve man in a direct proportion. The pedestrian circulation at Freetown however has the human and vehicular traffic colliding at the entrance and exits, that is, there are no pedestrian lanes. There is also inconvenient placement of the entrance and exit, where a majority of pedestrians access the site through the exit and leave the facility through the exit as well.

For the vehicular circulation, large trucks servicing the facility drive through the exit into the parking lot, which acts as the loading zone. This interferes with public access as well as parking services. Vehicles and large trucks turn and drive through the exit, that is, the exit acts as an entrance. The driveway is wide enough for access.

### 4.2.5 Topography

This is the arrangement of the physical features, natural and artificial on an area. It usually involves the study of the state of the land surface, which is presence of rivers, lakes, hills, valleys and more. Freetown Recreation Center is on a fairly flat land, lying at 4094.5ft above sea level. The type of soil on site is clay soil and sand soil due to construction activities.



*Figure 4-5: Topographic map and key of Ruai. Source: (Nairobi topographic map, elevation, relief- Topographic maps, n. d.)*

### 4.2.6 Drainage and Hydrology

This section of analysis considers the presence of drainage channels that includes storm water drainage and sewer lines as well as the water supply into the site. Freetown’s position on a fairly flat land has its drainage channels man made. There are no storm water drainages for the excess groundwater and the facility has instead opted for pumping out the water into the main sewer line that runs it into the septic tank at the edge of the recreation center, behind the swimming pool area.

The sewer line runs from the washrooms, through the parking lot, running through the swimming pool area into the septic tank. The sewer line has been identified by manholes that guide the researcher into easily noticing the presence of a sewer line. Swimming pool

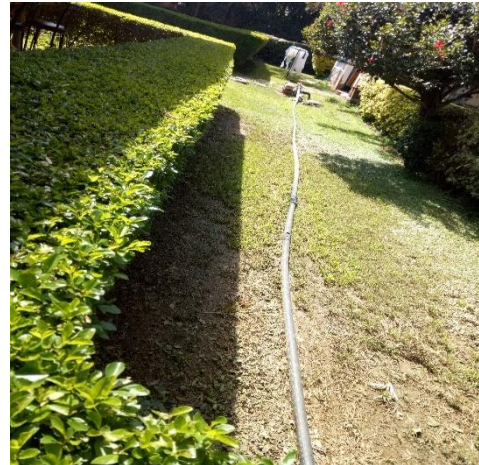
drainage system is separated from the main sewer line as it only assists in cleaning the pool.

Ruai is semi-arid, which means that rainfall is not so much favorable and dependable. Borehole water is salty throughout this region and is observed to be used only for cleaning purposes, running in green water pipes. There is also water supply from the Nairobi County Council and runs throughout the site in black water pipes, used for cooking and drinking purposes.

The site experiences little to no risk of flood impacts based on the natural topography of the site. Much of the excess water drains down into a man-made stream that flows into the Athi River, kilometers away from the site. To add on, the site's location along Kangundo road has exposed this hospitality facility to a majority of the public, hence services like electricity, internet and telephone are available.



*Figure 4-7: water drainage pipe. Source: (Author, 2020)*



*Figure 4-6: water drainage pipe and generator. Source: (Author, 2020)*



*Figure 4-8: water tower and tanks. Source: (Author, 2020)*



*Figure 4-9: electricity transformer. Source; (Author, 2020)*

### 4.3 EXISTING SITE ANALYSIS

#### 4.3.1 INTERIOR ARCHITECTURE

##### 4.3.1.1 Plan and layout analysis

Freetown Recreation Center has two sections, both in a regular U-shape, raised 480 millimeters above the ground. The first section to the left consists of the bar and restaurant as well as kitchen stalls. The second section has a ground floor and a first level. The ground floor is the VIP area, with only a small portion as the bar area. The floor above is an incomplete space with rails all around it. The entrance that is also the exit is a narrow spiral stair case and a ramp that extends from the parking lot situated to the front of the bar and restaurant, alongside Kangundo road. Technically, the entrance to the bar and restaurant is a narrow path while the exit is wide enough. This causes a majority of the population or frequenters to access the bar and restaurant through this exit, that leads to the kitchen stalls.

The Center has considerable circulation space for possible wheelchair users. It however has steps of an approximate height of 250 millimeters and stairs throughout the interior, which is a hindrance to older persons and wheelchair users, who require assistance during movement. Bar tables are erected in a zigzag and U shape, supported by logs of wood that run to the ceiling, of an approximate diameter of 135 millimeters. They form an X shape below the bar counters, serving as support as well as elements for design. The space lacks a reception area but has a room that serves as both the office and storage room for unloaded goods alongside the bar area that is visible to the public.



Freetown Recreation Center’s overall architecture lacks a ‘permanence’ aura whereby temporary materials have been used and incorporated as design subjects. This increases the site’s opportunity for re-design following the researcher’s objectives and overall design philosophy.

#### **4.3.1.2 Color scheming**

This section summarizes the choice of colors used in the design of the space. The color choice greatly affects the mental and physical aspects of people and sets a mood that attracts attention or make a statement.

Freetown’s choice of color scheme seems to incline more to the cool color section of the color wheel, which is the color blue seen on the tent cover that is the center’s architecture. However, there is no particular color pattern, shades or tints observed as the choice of color is random, out of dire circumstance.

#### **4.3.1.3 Floor finishes**

The entire floor in the interior comprises of hardcore stone slabs that are spread out as a mosaic, with cement in between the crevices. The stone slabs are irregularly shaped with a rough surface and have not been painted thus retaining the original rusty and dusty color of rocks. To add on, the floor has been raised to a height of 480 millimeters whereby steps have been included for access. Despite the durability of this floor finish, interaction with people for a long time during cleaning and movement has seen the cement between the crevices wearing off which results to loose exposed stone slabs.



*Figure 4-11: mazeras floor finish. Source: (Author, 2020)*



*Figure 4-10: steps with mazeras floor finish. Source: (Author, 2020)*



*Figure 4-12: loose mazeras. Source: (Author, 2020)*

#### **4.3.1.4 Wall finishes**

Freetown's wall finish is a tent cover with transparent sections that act as windows. The tent cover is blue in color and torn on most parts, displaying a sense of neglect. It however shows efforts of repair despite. This tent wall is very temporary as it gets rolled up during the day for aeration and lighting purposes and held up using nylon rope that is tied upon metallic poles supporting the tent cover and rolled down during the night for a sense of security, increasing the amount of maintenance effort. This type of wall does not shield occupants from cold or harsh weather such as heavy rainfall during the rainy season, which causes more damage.



*Figure 4-13: torn translucent tent wall. Source: (Author, 2020)*

#### 4.3.1.5 Ceiling finishes and light fixtures

Like the wall material, the ceiling is a canvas tent blue in color, with patches to indicate prior repair. This material is held up by nylon ropes tied to rusted metallic poles that seem permanent. Ruai experiences strong winds during the night and occasionally during the day proving that this material for such a facility is not conducive for this kind of circumstances. Light fixtures are fluorescent bulbs, 25 of them in total. They have been spaced out thus occupants/frequenters experience poor lighting services. Some bulbs are missing indicating negligence, making the conditions here poor especially at night, when there is much activity in the bar area.



*Figure 4-14: blue canvas tent. Source: (Author, 2020)*



*Figure 4-15: fluorescent bulb for lighting. Source: (Author, 2020)*

#### 4.3.1.6 Windows, doors and aeration space

There are no fixed windows and doors are simple openings indicated by shrubs (the holly shrub) that have been used as hedges on section 1 of the bar and restaurant. Aeration is made possible when the tent cover is rolled up during the day. The action of rolling it up serves both window and lighting purposes.



*Figure 4-19: rolled up tent wall. Source: (Author, 2020)*



*Figure 4-18: narrow opening for entrance and exit. Source: (Author, 2020)*

Section 2 of the bar and restaurant has fixed windows and metallic doors, grey in color. Aeration is made possible by the window structures that are in good condition. The doors are wide enough to allow entrance and exit for persons using wheelchairs.



*Figure 4-17: window openings. Source: (Author, 2020)*



*Figure 4-16: metallic door opening. Source: (Author, 2020)*

#### 4.3.1.7 Sanitary ware

Washrooms have been separated from the bar and restaurant, a walking distance of 5 meters. Access to this facility proves to be cumbersome for disabled persons as there is a narrow exit and an unclear pathway. At the entrance, there are steps that lead to two wooden doors, the women's bathroom to the left and the men's to the right. There is an open space with ample circulation circumference and flooring material of red cement that has worn off leaving a rough surface. The wall to the sink area has mirrors that are old and has been tiled, where the tiles and ceramic sinks appear to be old and stained. The taps are in good conditions and water supply is constant. Entrance to the bathroom is indicated by a wooden narrow door and lacks wheelchair turning diameter. The toilet bowl is squat toilet type whose flash handle is about 1450 millimeters from the ground.



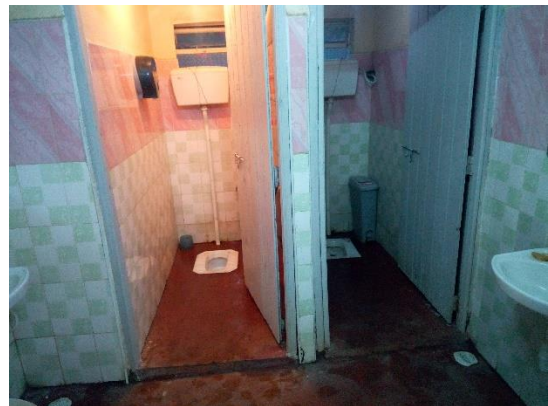
*Figure 4-23: steps at the main entrance.*  
Source: (Author, 2020)



*Figure 4-22: wooden double door.*  
Source: (Author, 2020)



*Figure 4-21: worn out cement on the floor.*  
Source: (Author, 2020)



*Figure 4-20: entrance to the bathroom.*  
Source: (Author, 2020)



*Figure 4-25: Squat toilet and cistern. Source: (Author, 2020)*



*Figure 4-24: sink area. Source: (Author, 2020)*

### **4.3.2 FURNITURE DESIGN**

The overall furniture at Freetown Recreation Center is quite old indicating the lack of replacement in a long time with little to no aesthetic features. The bar tables are long and wooden with a veneer finishing that has worn off. They have been supported by logs of wood that run to the ceiling metallic poles, serving as columns too. The bar stools are quite simple with the seating area made of wood with worn off veneer finishing and chipped off at the corners, rendering them uncomfortable. The backrest is made of metal only that is painted black and rusted to the legs and meshwork as an accessory. Dining tables comprise of rectangular and rounded ones made from wood as the surface and black painted metal as the stands. The surface is covered by yellow tusker branded polythene paper. Dining seats are made of wood and black painted metal, with the metal occupying a larger part of the seat, that is the seating area and back rest. The wooden parts are on the arm rest and act as an embellishment for the metallic backrest. On the seating area are cushions with green canvas cushion covers and sponge that is removable. Some seats were observed to lack cushions, leaving the seat bare. To add on, there are dining seats that lack the wooden armrests, leaving exposed nails and metal.



Figure 4-30: tusker branded round table.  
Source: (Author, 2020)



Figure 4-29: tusker branded rectangular table. Source: (Author, 2020)



Figure 4-28: wooden bar table. Source: (Author, 2020)



Figure 4-27: dining seat, Canvas covered cushion. Source: (Author, 2020)

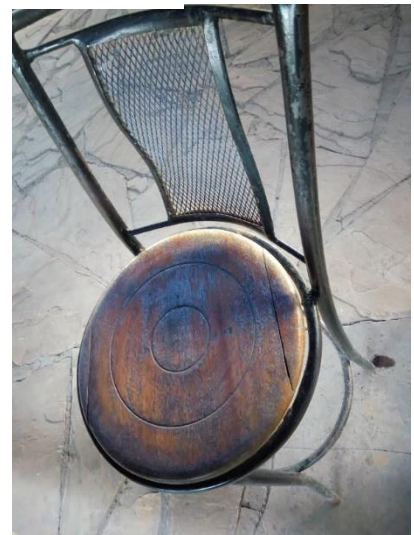


Figure 4-26: bar stool. Source: (Author, 2020)

### 4.3.3 EXHIBITION AND DISPLAY

Freetown Recreation Center’s exhibition and display is minimal and almost unidentifiable, thus requiring a keen eye to notice the few amount of signage present. This is represented by printed A4 papers, with illegible font from a distance, used for posters, notifications and labelling the bar tables. The Center lacks a display of artwork rendering the ambience very plain. At the bar area, the bar window is grilled, making it difficult to view the variety of product from a distance. The wine rack is a simple wall unit with normal shelving that is a box and plain glass. Despite these shortcomings, the counter to the bar area is in good condition with a favorable height from the ground. Entrance to this service area is very low, a height of 1000 millimeters from the ground. Kitchen display units have been improvised to hold utensils as well as a lack of worktops.



*Figure 4-34: wooden wall unit. Source: (Author, 2020)*



*Figure 4-33: counter label posters. Source: (Author, 2020)*



*Figure 4-31: grilled bar window. Source: (Author, 2020)*



*Figure 4-32: tusker branded notice board. Source. (Author, 2020)*



#### 4.3.4 LANDSCAPE ARCHITECTURE

The site's landscape architecture comprises of vegetation cover, a parking lot, walkways, drainage and hydrology as well as access and circulation, whereby the last two aspects have been discussed above. The vegetation cover at Freetown is very vast, where the researcher observed different kinds of trees and shrubs. These include the bottle brush, pine tree, holly shrubs, bougainvillea tree, boxwood hedge, Cuban royal palm, screw pine, travelers' palm, lawn grass, acacia tree, cypress tree, sisal, Atlas cedar tree, mutarakwa tree and the red hibiscus tree. The bougainvillea has been trimmed and used for fencing and border purposes as well as a hedge. The total amount of Cuban royal palms are 15. The holly shrub has been well trimmed and highly used along pathways to indicate presence of a walkway.

The mutarakwa has been used along the fence as well as the parking lot to divide the parking slots. Two mutarakwa trees of a diameter of 100 millimeters and a height of approximately 6 meters have been specifically used to indicate the parking slots. The presence of acacia trees in the site vicinity is due to the fact that Ruai town is in a semi-arid region. The parking lot has a ground cover of clay and sand soil and large stones that are also used to subdivide the parking slots. During the rainy season, this parking lot becomes impassable as it gets muddy with pools of water. It accommodates at most 25 cars in total, with manageable circulation for turning and driveway width. The walkways are very narrow with spaced out stone slabs that indicate the direction of the path.



*Figure 4-36: Walkway with spaced out stone slabs. Source: (Author, 2020)*



*Figure 4-35: outdoor seating space. Source: (Author, 2020)*



*Figure 4-42: swimming pool area. Source: (Author, 2020)*



*Figure 4-41: outdoor lighting. Source: (Author, 2020)*



*Figure 4-40: holly shrub. Source: (Author, 2020)*



*Figure 4-39: Atlas cedar tree. Source: (Author, 2020)*



*Figure 4-38: trimmed boxwood shrub. Source: (Author, 2020)*



*Figure 4-37: trimmed bougainvillea hedge. Source: (Author, 2020)*



Figure 4-46: narrow walkway. Source: (Author, 2020)



Figure 4-45: mutarakwa trees. Source: (Author, 2020)



Figure 4-47: trimmed lawn grass and boxwood shrub. Source: (Author, 2020)



Figure 4-44: acacia tree. Source: (Author, 2020)



Figure 4-48: parking lot. Source: (Author, 2020)



Figure 4-43: outdoor seating space. Source: (Author, 2020)



*Figure 4-49: Cuban royal palm tree.  
Source: (Author, 2020)*

#### 4.4 QUANTITATIVE ANALYSIS

The researcher aims to present and evaluate verifiable data already described in the qualitative analysis section in form of numerical values that is in bar charts and pictograms. This verifiable data is all based under four objectives that guided the researcher into data collection. This approach will evaluate responses made during one on one interviews and participatory observation and help make predictions. The objectives include:

1. To investigate the nature of spaces and determine its effect to the Center's young and old frequenters.
2. To assess existing design strategies and determine how it affects accessibility, beauty and empathy in the Interior Design at Freetown Recreation Center.
3. To examine the status of Freetown Recreation Center and assess its influence on design of the disabled.
4. To establish new designs that achieve accessible, beautiful and empathetic qualities for the spaces at Freetown Recreation Center.

##### **4.4.1 Assumptions made**

The data to be presented relies on assumptions made from responses gathered by the researcher. According to Dr. Marilyn Simon, "if you are conducting a survey you need to assume that people will answer truthfully. If you are choosing a sample, you need to assume that this sample is representative of the population you wish to make inferences to." (Simon, 2011).

The researcher assumed that the chosen sample size represented the largest population of Freetown Recreation Center. Confidentiality and anonymity of the participants has been preserved thus assuming that their responses have been honest. Secondly, the nature of space and its effects to the population was assumed to be directly proportional to the population density of frequenters. This applied in a way that an improved population density would be due to the new designs intended to be made, to achieve accessibility, beauty and empathy, thus appealing to the guests and frequenters. Thirdly, extremes such as excellent and unique, to be mentioned on the presentation of findings, imply that the design has achieved accessibility, beauty and empathy as well as the aesthetic function respectively, thus answering the research questions.

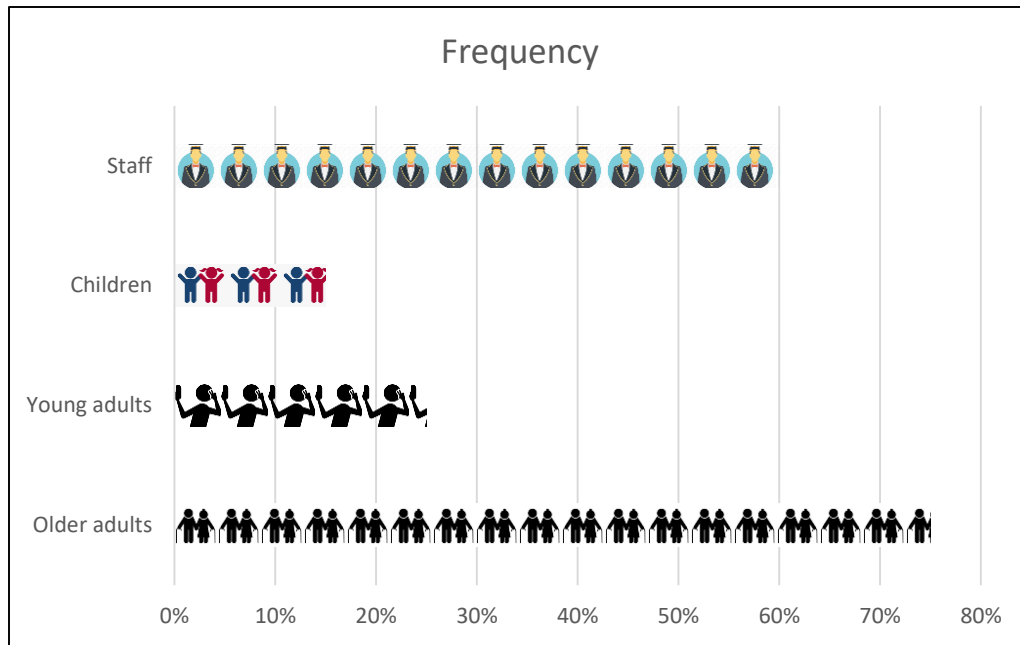
#### 4.5 PRESENTATION OF FINDINGS

##### **4.5.1 Logical analysis based on Interviewees' responses**

Based on one on one consultation following the questions on the researcher's interview sessions (refer to appendix A) and participatory observation, data was collected from the actual sample size of 28 people. It was then compiled into a narrative form by the researcher. This section aims to arrange the facts stated and observed in order, presenting them as they are while identifying patterns and common themes in form of bar charts and pictograms.

##### **4.5.1.1 Response on the population of Freetown Recreation Center**

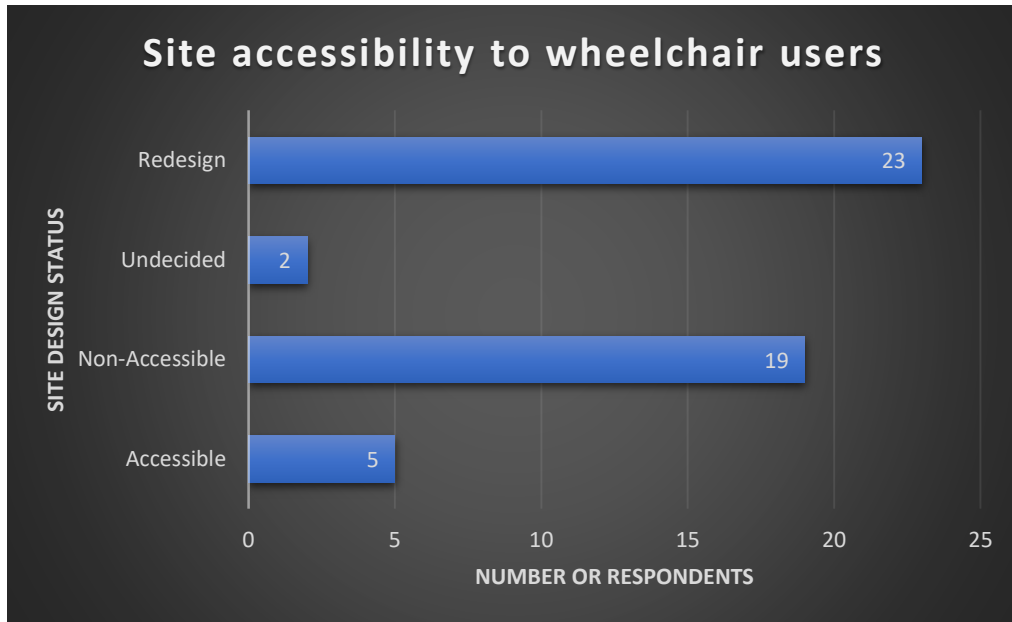
A majority of the population comprises of older men and women who are frequenters and the staff. This is because it is a major meeting point due to its serene atmosphere during the day as well as the presence of a bar. The youth frequent the facility mainly to watch football matches, whereby this situation is not frequent thus a minimal attendance. It was evident in the manager's response that the center needed more guests, especially the youth.



*Figure 4-50: frequency distribution pictogram of population of frequenters.  
Source: (Author, 2020)*

#### **4.5.1.2 Respondents’ view on accessibility to wheelchair users.**

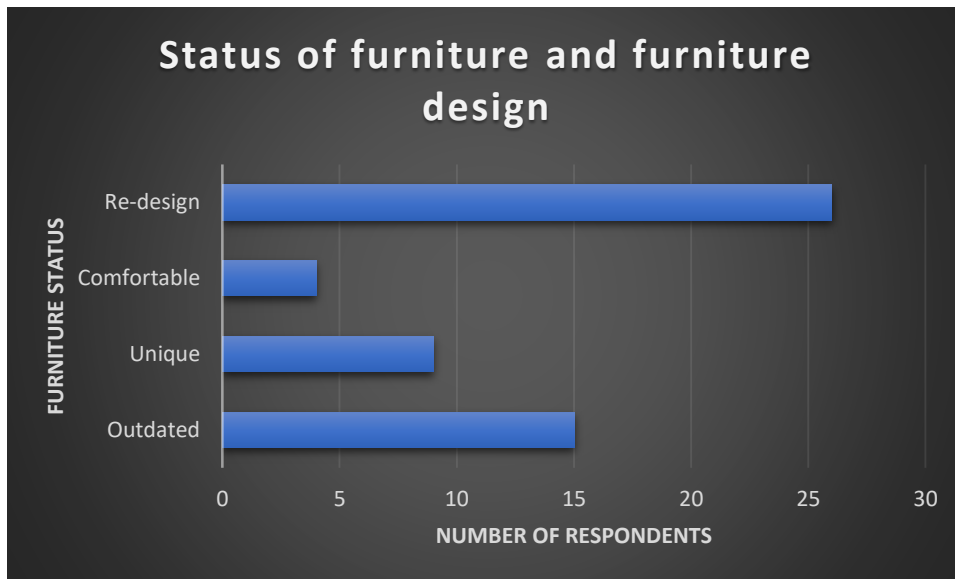
An interaction with the interviewees confirmed the presence of wheelchair users, 2 of them in total in a span of 1 week. Out of the 28 respondents, 19 of the entire sample agreed with the fact that Freetown Recreation Center has been constructed for the agile and flexible youth, with presence of steps and stairs in the interior and narrow pathways. To add on, the parking lot lacks a zone for the disabled as well as signage and facilities for wheelchair users. This therefore concludes that the center lacks proper accessibility measures. Out of the 28 respondents, 23 responded positively to the proposition of a redesign to grant the site accessible to disabled persons and the elderly. 2 respondents were undecided regarding the re-design proposition while 5 members thought of the facility comfortable and accessible as it was.



*Figure 4-51: bar graph indicating responses on site accessibility to wheelchair users. Source: (Author, 2020)*

#### **4.5.1.3 Respondents’ view on the status of furniture design.**

Majority of the frequenters are the older men and women as discussed above. The type of furniture observed is outdated for these persons as well as the youth who occasionally visit the bar and restaurant. This information is backed up by 15 respondents who also claim it as ‘somehow’ to mean not to par. Despite this kind of response, there were about 9 people that thought of the furniture design unique and 4 staff members that termed it as comfortable and manageable as it was. When presented with a proposal for re-design of the pieces of furniture, 26 out of the 28 termed this as an excellent idea that would respond positively to the overall outlook and first impression of Freetown Recreation Center.



*Figure 4-52: bar chart showing responses on the state of furniture design. Source: (Author, 2020)*

#### **4.5.1.4 Response to the general standards of Interior Design at Freetown.**

This category has been divided into the interior architecture and exhibition and display aspects. Interviewees' general response and the researcher's participatory observation gave a general insight on the standards of the interior design as well as the standards of design strategies on achieving an overall aesthetic look. The degrees of standard evaluation presented by the researcher are whether the design subjects were outdated, excellent as they were, presence of uniqueness in design or whether any design subject required new designs. Aspects of interior architecture focused on were the floor finishing, wall finishes, light fitting, ceiling finishes, signage, general organization/layout, color scheming, accessory fittings, wine rack and kitchen display.



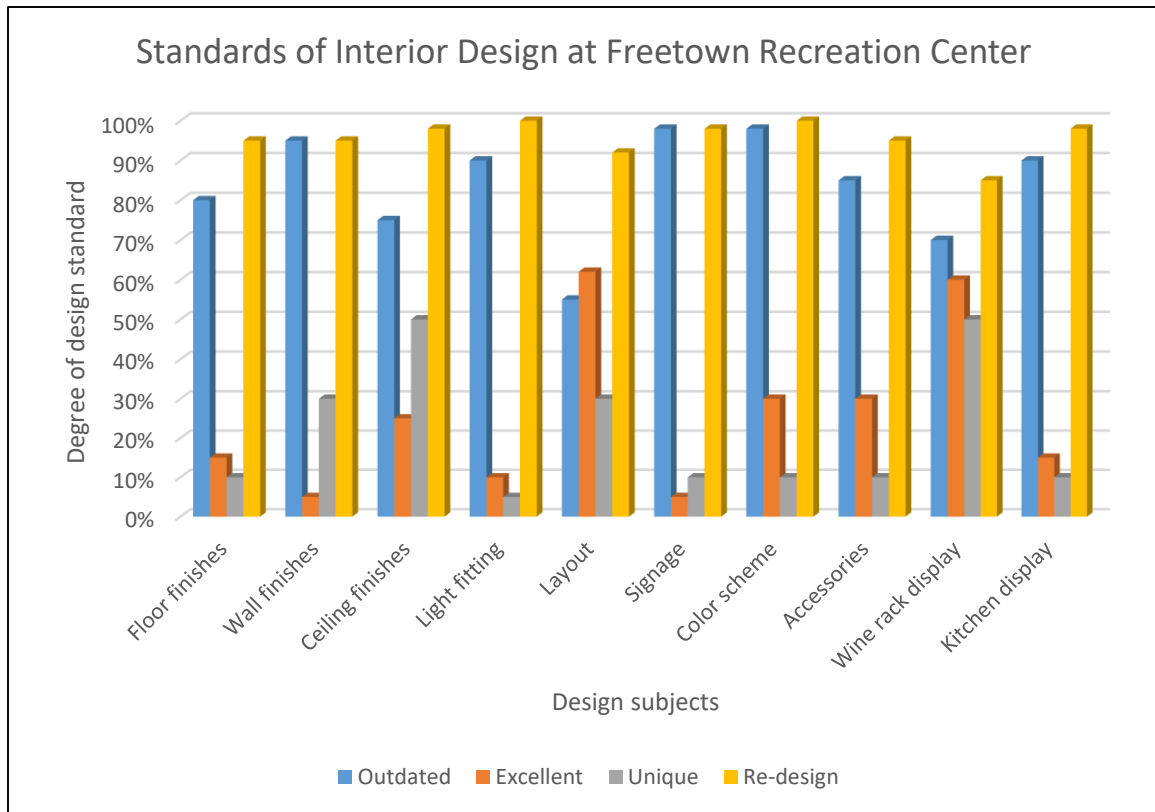


Figure 4-53: bar chart showing the general standard of interior design at Freetown Recreation Center. Source: (Author, 2020)

#### 4.5.1.5 Consideration behind existing design strategies.

Ranging from the one on one interviews with staff members, frequenters and management to direct participatory observation, data collected from the sample size of 28 persons displayed an evidence that the bar and restaurant had not been designed under any inspirations or design theme and that the strategies were random and consequential. Out of the sample population, 80% was not able to identify with any design considerations or theme. Among these was a staff member who could only state that the hospitality facility was ‘okay’ how it was, when presented with a variety of questions that gauged the degree of inspiration that existed. The remaining 20% associated the architecture and design with uniqueness due to the presence of unprocessed wood as columns and hardcore stone slabs arranged as a mosaic. This provided the researcher an opportunity to introduce her chosen design philosophy and themes to achieve the aesthetic-usability effect as well as the study objectives.

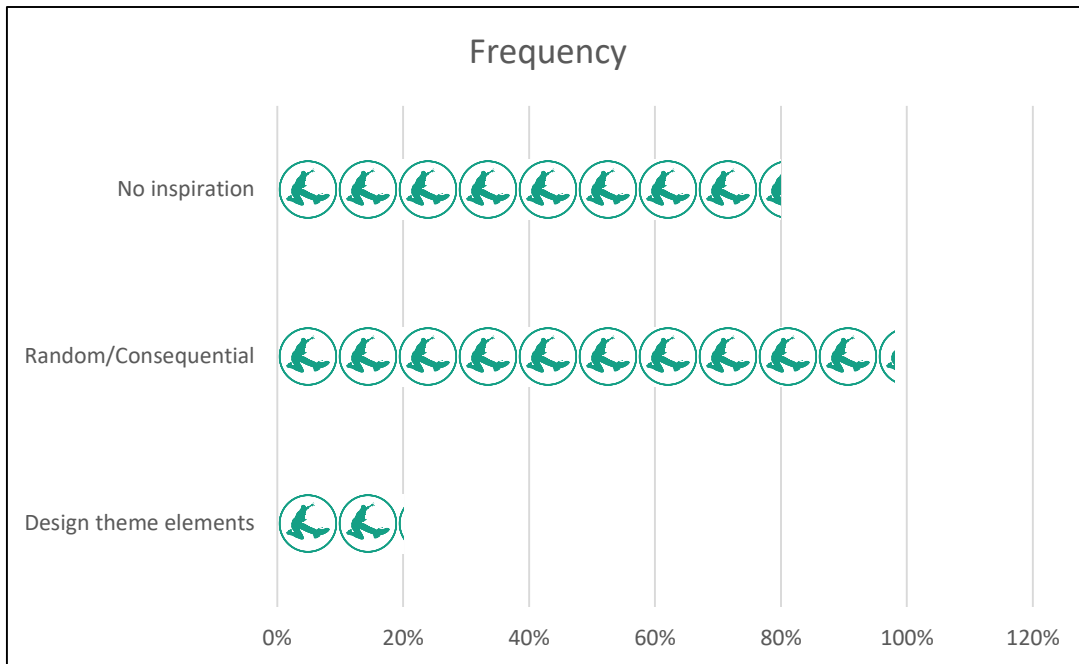
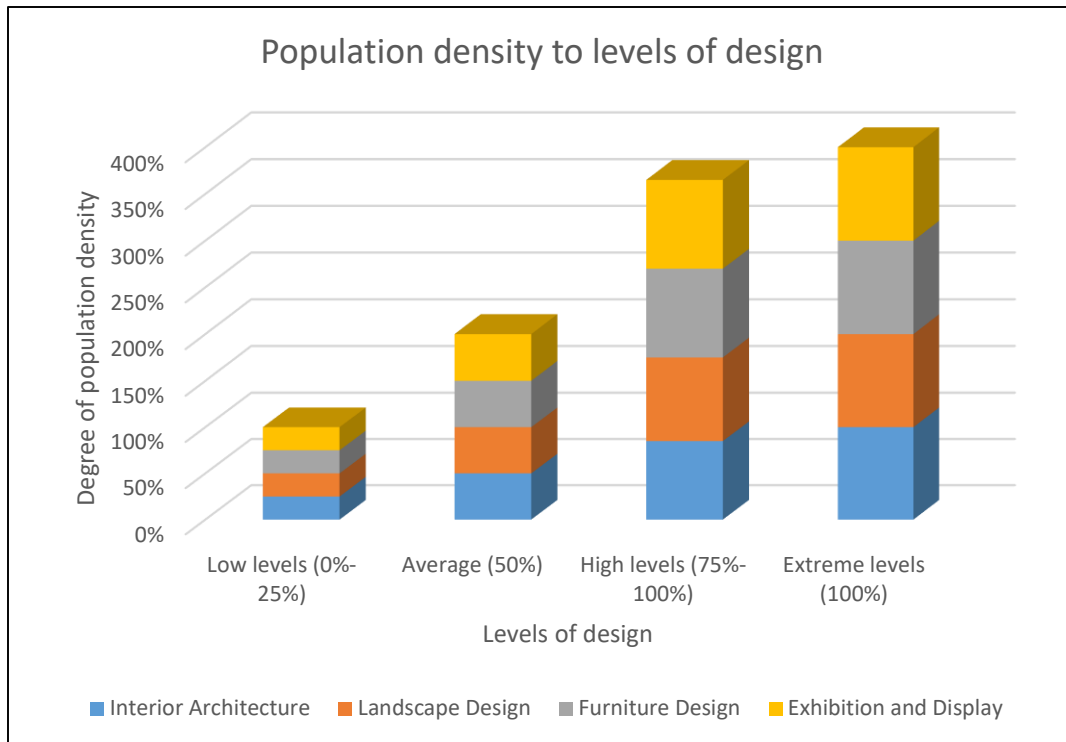


Figure 4-54: Frequency distribution pictogram showing responses on consideration behind existing design strategies. Source: (Author, 2020)

#### 4.5.1.6 Response to improved population density due to re-design of Freetown Recreation Center.

As mentioned above on the assumptions made by the researcher, an improved population density would be directly proportional to introduction of new designs that achieve accessible, aesthetically pleasing and empathetic qualities for the site. The result of this is an appeal of the nature of space to the young and old frequenters. The new proposed designs focus on the four main aspects of the study, which are interior architecture, landscape design, furniture design and exhibition and display. These four aspects in the end cater for the whole outlook of the space, exuding positive attitudes and loyalty thus an improved population density around and in the bar and restaurant. 2 out of the 13 respondents that agreed to a re-design of the site, provided suggestions on design subjects such as furniture, flooring, bar area and the parking lot, using terms such as ‘old’ for the existing ones and ‘look better’ if new designs were incorporated.



*Figure 4-55: bar chart indicating comparison of population density of frequenters to levels of design. Source: (Author, 2020)*

The chart above shows the proportionality of degree of population density to the levels of design. The low and average levels of population and design strategies would describe the current state of Freetown Recreation Center whereas the high to extreme levels of population and design levels would be due to the proposed designs that improve the nature of space.

#### 4.6 CONCLUSION

This chapter comprised of a descriptive and quantitative analysis of data collected by the researcher regarding Freetown Recreation Center. It began with a general background information of the site that included the geographical location. Climate and temperature analysis of Ruai were presented using a bar graph and line chart, whereby the average weather by month was presented by tabular means. Existing site conditions and data collected through observations and one on one interview sessions were analyzed in detail through a descriptive analysis and photographs were presented to ensure that they were not separated from the context in which data was collected. The pictograms and bar charts presented assisted the researcher to reflect the comments and suggestions made by members of the study population during the feedback sessions as well as observations made

during participatory observation. To add on, examination of results from responses and views of respondents in the study population regarding the current state of the site was done. This had an inclusion of the proposals presented regarding introduction of new designs, which is beautiful universal design, to be achieved through the Adinkra symbols of Ghana and upcycled texture.

## Chapter 5

### 5.0 SUMMARY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 OVERVIEW

The previous chapter presented the key findings as well as a discussion of the study conducted in Freetown Recreation Center. This chapter aims to present a summary of the study, based on the findings discussed and the researcher will draw appropriate conclusions and recommendations in relation to the research questions derived from the main objective of the study. The study focuses on determining the aesthetic and accessibility nature of Freetown Recreation Center spaces and an examination of its fitness for its young and old frequenters. Major interest has been placed on the design state of the center, accessibility and circulation. Findings of this survey contribute to knowledge in the area of aesthetic-usability with an aim to render more usable design aesthetic, so as to attract usability and appreciation. Data presented in this section relies on the data collection activity performed by the researcher through participatory observation, interviews done on a sample population generated.

The conclusions and suggested recommendations all lean towards Universal Design as the main guideline. These go hand in hand with sustainable development and African design, specifically upcycled texture and adinkra symbols of the Akan of Ghana respectively. Recommendations will be in form of concepts generated by the researcher as well as figures suggesting the plausible ways of improving the design state of Freetown Recreation Center. They will focus on the four thematic areas presented in the course. Possible suggestions for further research will also be outlined.

#### 5.2 SUMMARY OF FINDINGS

The study's main objective was to determine the aesthetic and accessibility nature of Freetown Recreation Center spaces and examine its fitness for its young and old frequenters. It was therefore established that Freetown Recreation Center, a popular hospitality facility received an average appreciation from the public. To add on, due to its location-around residential homes with a majority of retiring and retired men and women-a significant number of frequenters were older men and women. The youth spotted at the site were staff members and the few who visited the center occasionally to watch football

matches. Among the frequenters was a wheelchair user, who according to data received, required secondary assistance to navigate the premises.

From participatory observation and interview sessions conducted, the researcher discovered that there was little appraisal put towards aesthetic design on exhibition and display and the interior architecture. This includes the bar area, kitchen display units and signage as well as wall treatment, floor finishes, ceiling treatment and lighting respectively. There was an attempt towards furniture design, whereby the bar counter tables were supported by unprocessed logs of wood, while the dining seats had carved metal rods as stands. The dining tables however, appeared outdated and were covered by tusker branded nylon paper. While aesthetic nature of design is most paramount in this study, universal design is directly dependable, and it was not placed as a priority at Freetown Recreation Center, especially for the landscape architecture. The walkways were narrow, with loosely fitted mazeras. However, there was an attempt at soft landscaping, whereby the site had a variety of vegetation and outdoor lighting. The researcher was able to establish a lack of evidence on incorporation of African design and sustainability measures in the site.

Looking at the interview questions, the researcher received different responses regarding the state of the center. This included the status of furniture design, landscape architecture, the general standards of interior design and exhibition and display and whether a consideration for inspiration behind design strategies was necessary on the above four thematic areas. A common response gathered after requesting the interviewees' suggestions, was a need for renovation. On regards to this, according to the researcher, a successful recreation would achieve accessibility, aesthetically pleasing and empathetic designs that would result to a positive attitude exuding from both the young and old frequenters. Consequently, there would be a direct proportion of improved population density.

### 5.3 RECOMMENDATIONS

Findings of the study leads to a recommendation in the areas deemed to have an implication on the Center's population density or loyalty from guests and current frequenters. These solutions, as mentioned earlier, lean towards universal design, sustainability using

upcycled texture and African design using the adinkra symbols of the Akan of Ghana, to attain beautiful universal design.

### **5.3.1 INTERIOR ARCHITECTURE**

The interior architecture for this particular study narrowed down to wall treatment, floor finish, ceiling treatment and lighting. Under lighting, the researcher put into consideration window openings to offer natural lighting and lighting fixtures within the interior spaces for artificial lighting. Below are detailed recommended solutions for the areas stated above?

#### **5.3.1.1 Wall Treatment**

Freetown Recreation Center's existing wall fixture was in the form of a tent. It gets lowered during the night and folded up during the day, with translucent parts of the tent to serve as windows. Among the weaknesses identified by the researcher earlier, was the fact that the tent set up was quite outdated and was very temporary as well. However, the researcher discovered opportunities that this kind of wall fixture had, and that is flexibility. The space had an opportunity for expansion, relocation or a complete replacement with permanent wall fixtures like a concrete wall where the researcher recommended a complete replacement of the wall fixture with a concrete wall as it was easier to manipulate and personalize according to the researcher's preferences.

The hospitality industry is extremely competitive, with its successes and downfalls not only dependent on the great variety of services offered (Stein, 2017). The overall ambiance leaves an extensive first impression to any user while exemplifying the dining experience which becomes a probable loyalty to the space (Stein, 2017). The world is evolving and getting educated on the positive impacts of sustainable development and African design, especially in this African Renaissance era, whereby the researcher discussed upcycled texture, a measure rarely practiced in large scale interior design and the importance of having meaning behind design, by using adinkra symbols.

##### **5.3.1.1.1 Paint finish**

The researcher therefore recommended a paint finish of royal blue with mild yellow stripes on the wall. Paint inspires a space, giving it an interesting vibrant visual effect, where the mood is influenced by the chosen color palette (Fernandez, 2016). The texture shown

below is from an old curtain net, where netting technique was used to create patterns on the wall using gold paint. The figure below is a suggestion on how to implement this concept.



*Figure 5-2; pattern on old curtain net. (Author, 2020)*



*Figure 5-1; gold colored patterns on wall. Source: pinterest.com*

#### **5.3.1.1.2 Fabric covered walls**

These type of walls add texture and a degree of formality to a space. Consequently, a major benefit is the advantage of reduction of circling noise between spaces (Martin, 2016). The proposed design included private lounge sections for users desiring a peace and quiet and this is a look that attains sophistication and makes a distinguishable statement. The researcher recommended a maroon colored velvet fabric customized with the patterns of the old curtain net in a gold color.



*Figure 5-3; fabric wall covering. Source: (Martin, 2016)*



### 5.3.1.1.3 Mirror panels

A wall of mirrored panels makes a space appear expansive, become uncluttered and reflects light, creating an illusion of additional space (Fernandez, 2016). This renders a space with a sleek sophistication and noticeable sparkle. “These shining surfaces have graced homes since ancient times and have been used throughout history to create an opulent atmosphere” (Stamp, 2015).



*Figure 5-4; antique mirrored panels. Source: (Stamp, 2015)*

### 5.3.1.2 Floor Finishes

As a designer, selection of floor finishes requires a lot of acuteness, abrasion resistance being the number one factors to consider. “Abrasion resistance is the ability of a surface to resist being worn away by rubbing or friction” (Scott & Safiuddin, 2015). As much as abrasion resistance relies on excellent curing, the type of material used, surface covering, aggregate hardness, placing and degrees of compaction are also dependent variables (Abrasion Resistance, n.d.) (Papenfus, 2003)). Other factors to consider is whether the finish selected can survive a long life span in high traffic spaces and the climate of the region within which the site is located (Floor Finishes & How to choose a Floor Finish, n.d.).

### 5.3.1.2.1 Double Charged Vitrified tiles

These double charge vitrified tiles (Double Charged Porcelain|Vitrified Tile, n.d.) are an indoor and outdoor floor material. They are however used extensively indoors as they display a pleasant appearance. To add on, the floor finish material is suitable for high traffic zones as they are very durable and do not require polishing on site after polishing is done for sale. The floor material comes in large sizes which captured the attention the attention of the researcher, as Freetown Recreation Center is an expansive space. Their large sizes have an added advantage as they will have a less amount of joints (Mistry, n.d.), which gave the researcher room to incorporate custom made designs on the floor using the old curtain net texture shown below using floor tile paint. The material does not scratch or crack easily and lacks an effect of sunlight and its pleasant appearance is retained over a period of time. The size recommended for the tile was 32” by 32” with a thickness of 8mm for durability purposes (Mistry, n.d.). The floor tile painting does not ask for a lot of time and resources (Prevencher, 2018) and thus the proposed floor tile paint was Rust-Oleum Universal Gloss, an all surface paint and primer all at once (The UK's 5 Best Tile Paints- Reviews & Comparison, n.d.). The color chosen was turquoise vitrified tiles and gold upcycled texture patterns for a stylish look.



*Figure 5-5; pattern on old curtain net. (Author, 2020)*



*Figure 5-6; double charged vitrified tiles.*

### 5.3.1.3 Ceiling Treatment

Ceilings preprend depth and personality of a user to a space. More often than not people put a lot of consideration and effort on everything else in an interior space, leaving the ceiling plain, white, bland (Teicu, 2020). Ceilings technically accentuate a space giving it a sense of completion as well as act as an extension of a user’s expressions, making it a point of

focus. A perfect choice of lighting epitomizes a space with allurements from ceiling to floor, creating a variety of positive attitudes upon first impression.

#### 5.3.1.3.1 Gypsum Board

This material is also referred to as wall board or drywall (HPD, 2019). Gypsum boards have an incombustible core hence different from plywood or Medium Density Fiberboard (MDF). They are easily put up and can be manipulated to fancy design because they are lightweight and do not require complicated assembling. To add on, due to their lightweight advantage, they enable easy refinish and repair. Gypsum board panels are large 48'-54' wide sheets with lengths of 8"-12", covering an extensive ceiling area (HPD, 2019). Given that the temperatures in Ruai are high for the most part of the year, gypsum boards become a perfect ceiling choice as they act as a heat insulation barrier, retaining cool temperatures in the restaurant. They have a sound isolation benefit, with which noise in surrounding areas is transferred. Freetown Recreation Center is located along Kangundo Road, a road that encourages heavy vehicular traffic thus heavy vehicular noise. The researcher recommended this type of ceiling due to its durability, high end standards it offers for the most part and "excellent dimensional stability." For this project, the gypsum ceiling boards were custom made with patterns of the adinkra symbol Nyansapo (wisdom knot), with cylindrical rods painted gold color running from ceiling to floor.



*Figure 5-8; false ceiling patterns.  
Source: pinterest.com*



*Figure 5-7; patterned gypsum ceiling. Source: pinterest.com*

#### **5.3.1.4 Lighting**

“Lighting is designed for the person” (Behmen, n.d.). The type of indoor lighting for a restaurant could be a deal breaker if it is too bright in that it interferes with the original color of objects around a user or too dull to disrupt navigation from one point to another. Fixture of lights and their color is dependent on the space function, timing and the restaurant’s theme as these influence the attitude of users in a crucial way. Lighting is also dependent on the type of meals served in a restaurant throughout the day, where during breakfast, a lot of light would be required to allow comfortable reading to readers and those catching up on notes while having their morning coffee. For the lunch hours, moderate lighting is needed, probably a combination of both natural and artificial lighting. Lighting during dinner hours ought to be of a low intensity for a user to enhance intimacy with the surrounding (Behmen, n.d.).

The researcher therefore recommended various types of lighting as per the guidelines outlined above, falling into three categories, accent lighting, ambient lighting and natural lighting.

##### **5.3.1.4.1 Accent lighting**

This type of lighting enhances the architecture of a space in this case Freetown’s walls, mirrors, planters and more, making it appear practical (Top 10 Restaurant Lighting Ideas for Perfect Ambiance & Appeal, 2019). A subtle application of this type of lighting is required, focusing mostly on the object one chooses to illuminate (Harger, n.d.). The types of accent lights proposed for the bar and restaurant were LED tape lights to be applied around the gypsum ceiling board to highlight its unique shape as well as the pattern used. The other type of accent light is the sconces, divided into wall sconces and shadow casting sconces. Wall sconces were placed along corridors and corners for more illumination while shadow casting sconces that are more dramatic, were placed on both wall and ceiling to add life in the bar and restaurant, reducing monotony.



*Figure 5-11; LED tape lights around false ceiling patterns. Source: pinterest.com*



*Figure 5-10; shadow casting sconces. Source: (Wall Sconces/ Modern Indoor & Outdoor Sconces, n.d.)*



*Figure 5-9; mid-century modern wall sconce. Source: (Wall Sconces/ Modern Indoor & Outdoor Sconces, n.d.)*

#### **5.3.1.4.2 Ambient lighting**

Ambient lights are usually the main source of lighting in a space. They provide a degree of warmth as illumination is a soft glare, allowing safe navigation through a space. This type of lighting can be provided by use of pendants, recessed lights or ceiling-mounted lights (What is Ambient Light- A Simple Guide, 2017). The recommended ambient lights for Freetown Recreation Center's interiors was the pendant lights and ceiling-mounted lights on the surface of the gypsum boards. Pendant lights were to be included at the bar area, the private lounge sections so as to illuminate the key elements of these sections. As for the ceiling-mounted lights, they were to be distributed across the ceiling for general lighting.



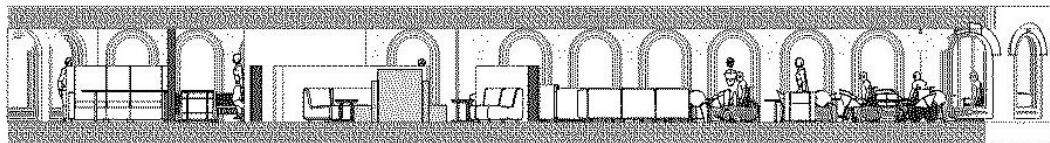
*Figure 5-13; pendant lighting. Source: pinterest.com*



*Figure 5-12; ceiling-mounted lights. Source: pinterest.com*

#### **5.3.1.4.3 Natural Lighting**

The proposed design of Freetown Recreation Center displays an extensive use of windows for natural lighting during the day “to support the visual demands of building occupants” (Wymelenberg, n.d.). Natural lighting also creates a connection between the indoor and outdoor and in the end minimizes energy consumption. The mirrors recommended for wall embellishment were to also assist on reflection of light.



*Figure 5-14; windows on elevation 06 of the proposed bar and restaurant design. (Author, 2020)*

#### **5.3.2 EXHIBITION AND DISPLAY**

In order to communicate clearly, exhibition and display design overlaps a variety of subjects in a certain space (Locker, 2010). It is concerned with space, form and surface and is very much familiar with interior design as well as stand independently from architecture providing opportunities for communication and display. For this project however, the designer sought to intertwine exhibition and display design subjects with the interior architecture to achieve the same objective which is an opportunity for communication and

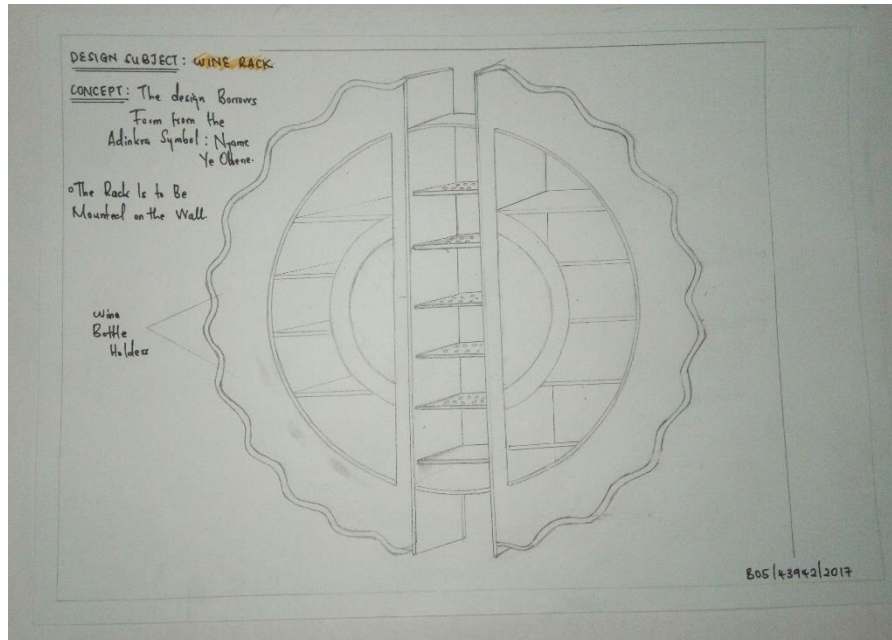
interaction. The areas with which this included are the bar area, the kitchen area and signage for interior way finding and identification for Freetown Recreation Center, Ruai.

The researcher, for this thematic area and to achieve beautiful universal design, used African design, narrowing down to the Adinkra symbols of the Akan of Ghana that have been perfected over time.

#### **5.3.2.1 The Bar Area**

Setting up a bar area requires a designer to put a lot of factors into consideration as this would influence a great deal of attitude formed amongst users. The two major factors that the researcher considered was good sightlines and designing for function while considering aesthetics (Robson, 2008). The bar window at Freetown Recreation Center's bar was grilled thus the bartender would technically have a difficult time seeing his or her guests as well as the server pick-up station. They have to leave the bar to observe a pick-up station or identify frequenters. The proposed design was an open bar, where the bar tender gets to have a wide view. The guests too are able to see the product in the wine racks to identify their specifics.

Secondly, designing for function as much as aesthetics is a key guideline. The wine rack requires organization, starting from glass storage to wine storage to beer taps and ease of access of these. Simple shelves and drawers can appear more authentic by adding a touch of design, in this case, African design. This could be either by a restructure of the whole form, adding color or embossing patterns. For this specific project, the proposed design saw a restructure of form with inspiration borrowed from the Nyame Ye Ohene adinkra symbol, to be mounted on the wall at a height that allows easy access, approximately 1100mm from the floor. The color scheme used was a maroon wine rack, with the edges painted gold.



*Figure 5-15; concept sketch of the proposed wine rack. (Author, 2020)*

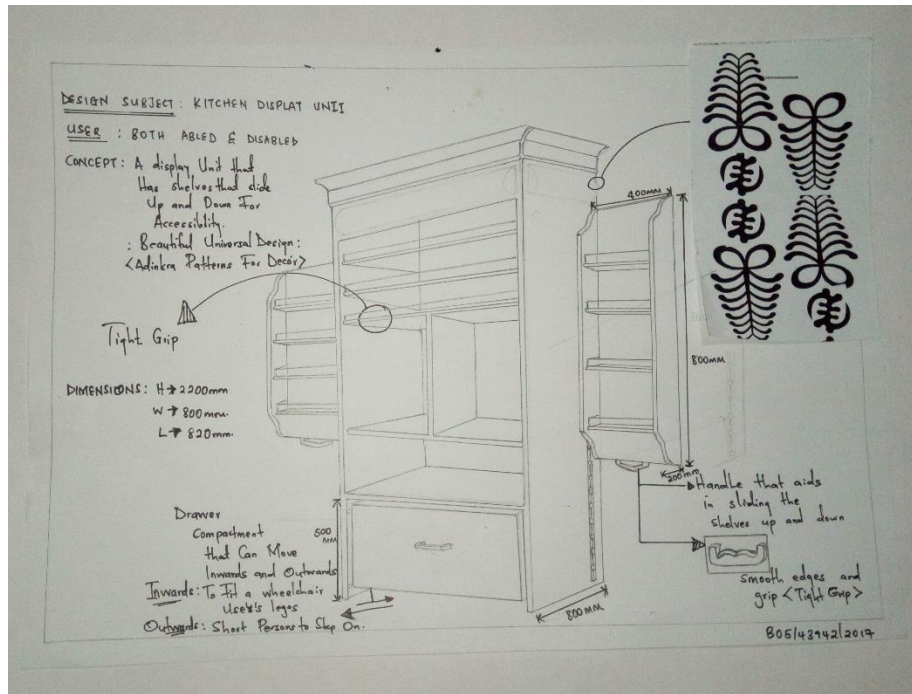
### **5.3.2.2 Kitchen Display Units**

The kitchen area in Freetown Recreation Center is quite disorganized. Simple shelves have been put up and are seemingly temporary and outdated. Customized display units require one to begin from scratch to create a product that falls in the bracket of their preferences. A lot of mistakes are bound to come up especially when considering aesthetics without factoring in the function. Another factor to consider is the type of material to use and whether the final product will serve the intended purpose on long term basis. Ease of access of the display units is vital, in this case considering the handicapped.

The proposed design, put the above into consideration to come up with a concept sketch shown below. The kitchen display unit has shelves that can slide up and down, with a handle of tight grip that aids the push and pull. It is non-locking display unit to ease access of products. There is a drawer compartment that can move inwards towards the wall and outwards to fit a wheelchair user's legs and for a shorter person to step on while reaching for product respectively.



In order to attain beautiful design, the recommended décor on the display units would be laser cut into patterns of the Aya and Gye Nyame adinkra symbols.



*Figure 5-16; concept sketch of the proposed kitchen display unit. (Author, 2020)*

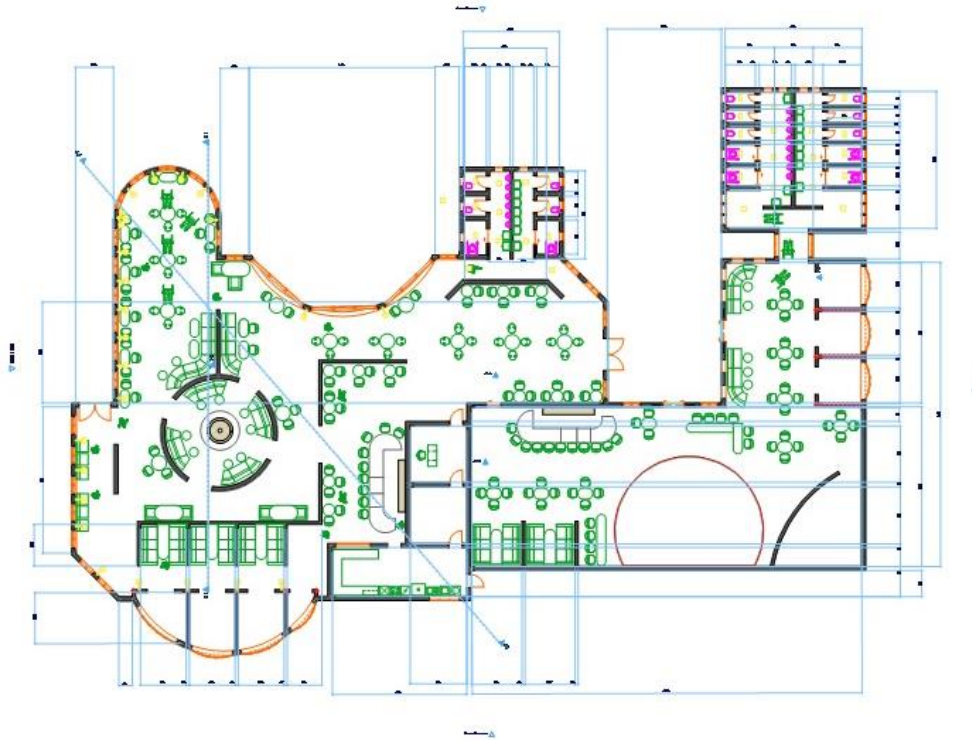
### 5.3.3 FURNITURE DESIGN

Any space is deemed incomplete once it lacks the ‘hospitable’ outlook. This is consequently achieved by an incorporation of furniture, a factor that determines comfort and hospitality of a space, with which human beings interact with depending on the context of a certain space. With this in mind, different pieces of furniture are introduced to serve appropriate purposes, in this case a restaurant and bar, which demands pieces of furniture like dining tables and seats, bar stools and bar counters as well as lounge chairs and more. The researcher came up with beautiful universal design by incorporating African design and upcycled texture following the aesthetic-usability phenomenon after narrowing down to three pieces of furniture, the dining table, the bar counter and the bar stool for Freetown Recreation Center. Below are the recommended concepts provided by the researcher for the pieces of furniture mentioned, furniture layout that will ensure ample circulation within the bar and restaurant fit for the abled, aged and disabled persons as well as figures of the proposed material?

### **5.3.3.1 Furniture Layout**

“An effective furniture layout must address both functional and visual criteria” (Merrell, Schkufza, Li, Agrawala, & Koltun). The functional criteria considers ways by which the preferred layout incorporates human activities and possible short-comings that may be encouraged by different human anthropometrics, that is the different body shapes and sizes, ability and disability. Consequently, the effects of the layout of the space to persons interacting with it are also addressed to formulate the required distance around subjects. The three major actions that are perturbed by furniture layout are conversation, clearance and circulation (Merrell, Schkufza, Li, Agrawala, & Koltun). Conversation is determined by the placing of furniture, whereby the arrangement ought to assist desired eye contact as well as a normalcy in speech volume. Secondly, circulation offers enough space for persons with different abilities to comfortably navigate a space as desired. Lastly, clearance is concerned with the empty space around furniture items that deems them functional. An example would be a bar stool, whose front should be an open space to enable the seating action.

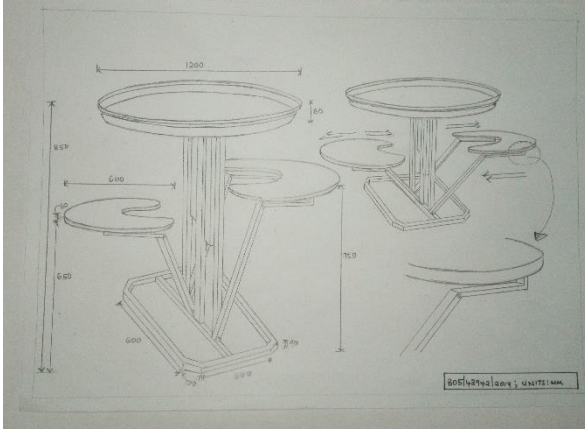
Visual criteria in furniture layout falls under the three visual rules in design, which are balance, alignment and presence of a focal point. These rules of thumb ensure a visual composition in design, and for furniture layout, they form an impression of the overall outlook of a space (Merrell, Schkufza, Li, Agrawala, & Koltun). Below is the proposed furniture layout of Freetown Recreation Center, having put into consideration the factors discussed above.



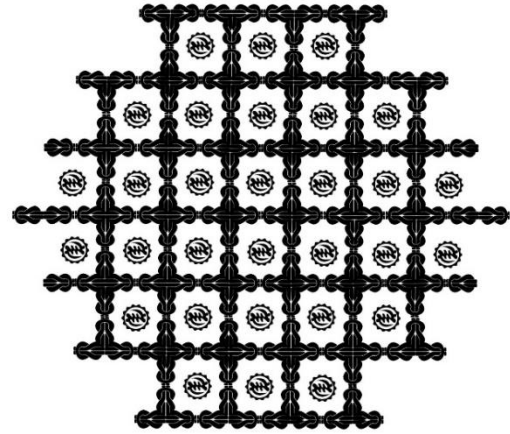
*Figure 5-17; furniture layout of the proposed bar and restaurant design. (Author, 2020)*

### **5.3.3.2 Dining Table**

The proposed design borrowed inspiration from the Nyame Ye Ohene (Majesty of God) and the Nyansapo (wisdom knot) adinkra symbols and universal design. The rounded dining table of a diameter of 1200mm was designed to accommodate 4-5 persons. The rounded table top would have patterns of the symbols mentioned, laser cut on an MDF board and painted navy-blue to the top and gold on the edges to match the brass stands. The table measurements were adjusted from those of a regular dining table so as to accommodate a wheelchair user. These were 850mm tall, inclusive of the table top of 60mm thickness. The design included mini-table tops of a height 750mm and 650mm and a diameter of 600mm that could be pulled outwards to create more clearance around the table's perimeter for use by a wheelchair user or any other person looking to work using an electronic while dining. They were designed to a crescent shape to allow fitting back around the main table stands when not in use and the difference in height was thought to eliminate collision during this process. The base was designed to a diameter of 600mm, wide enough to allow sturdiness.



*Figure 5-18; concept sketch of the proposed dining table design. (Author, 2020)*



*Figure 5-19; concept sketch of the proposed dining table top pattern.*

### **5.3.3.3 Bar Table**

Recommendations for the bar table had its main inspirations inclined to African design, the Aya (endurance) and Gye Nyame (God’s omnipotence) adinkra symbols for aesthetics and universal design for functionality and accessibility. The form of the bar table borrowed features of the Aya, to restructure it from the straight and long bar table at Freetown to become more curvilinear and interesting. According to Stephani Robson, while designing the bar area, it is important to consider the guest’s anatomies so as to allow comfortable interaction with the piece of furniture (Robson, 2008). Regarding this, the proposed design had the bar counter height at 1100mm to allow reach to drinks on the bar counter by a standing guest who could hold a conversation using normal speech volume with a seated guest (Robson, 2008). To add on, wheelchair persons were not restricted from sitting at the bar, as the height of the bar die was set at 740mm with the stand carved to the inside to fit the wheelchair user’s legs. The bartender’s anthropometrics were also considered, where there was a work top, 940mm tall that allows working while standing without strain. The recommended circulation distance behind the bar was 920mm, allowing free flow of bartender traffic especially during the busy hours of the day. Patterns of the mentioned adinkra symbols were to be incorporated on the maroon colored bar stand using gold color, giving it a simple but sophisticated look.

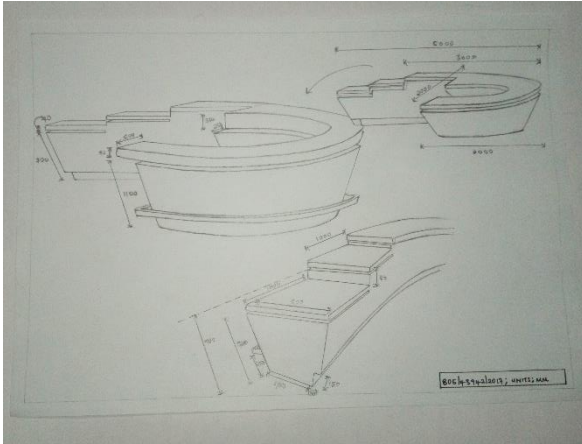


Figure 5-21; concept sketch of the proposed bar table design. (Author, 2020)

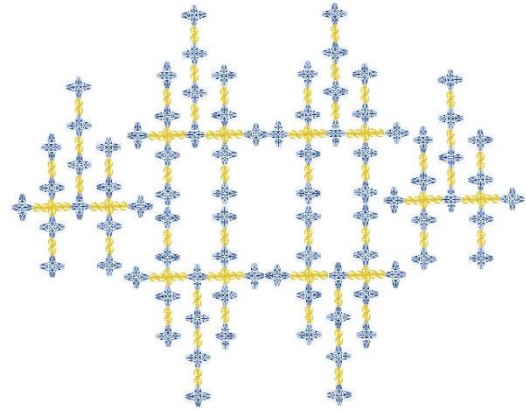


Figure 5-20; concept sketch of the proposed bar table pattern. (Author, 2020)

#### 5.3.3.4 Bar Stool

The Nyansapo (wisdom knot) couldn't appear any better if not customized into a restaurant's bar stool. The proposed design had a complete restructure of the regular bar stool stand into one that displayed features of this adinkra symbol, using brass. Secondly, as mentioned by Stephani Robson, "Bar stools with a back are preferred because guests find them more comfortable over time and they also provide a place to hang a sweater or jacket in colder climates" (Robson, 2008). This bar stool design has a backrest of a height of 600mm that ensures proper alignment of a guest's back, as well as arm rests for maximum comfort. This will definitely make a guests stay in for a second (or third) drink. Another factor considered is ease of movement of the stool because a majority of people

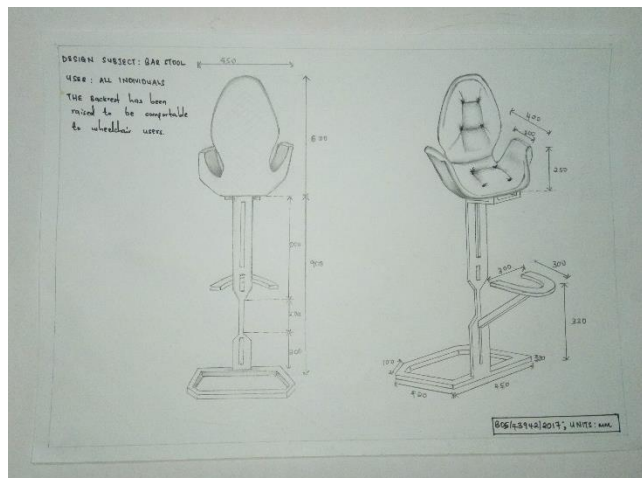


Figure 5-22; concept sketch of the proposed bar stool design. (Author, 2020)

would like to converse at a 90<sup>0</sup> angle for comfortable eye contact (Robson, 2008). Upholstery treatment included upcycled patterns in gold and maroon color netched on the turquoise colored velvet fabric.

### **5.3.3.5 Furniture Material**

Material selection demands a level of prudence while making decisions on the function of the furniture, the context of the space and the user preferences. Other factors to consider are durability, to offer the final product a longer life span and the material's adaptability to customized designs. This enables a designer to implement desired design and add personality of the user to the final piece of furniture.

#### **5.3.3.5.1 Brass**

Brass plated surfaces, for example steel, have a shorter life span, so much as to demand frequent replacement as compared to brass products and surfaces. Pure brass can be polished back to its original sleek nature and can also be lacquered to protect the surfaces, presenting “the underlying brass without affecting its color....” (Harris, 2013). The researcher recommended this material for the dining table edges and stands, the bar stool stands and the bar counter edges. Freetown Recreation Center, being a public site, requires durable material to last over a long period of time. To add on, the lacquer coated brass surface can be re-polished over time, therefore there would be no dire need for furniture replacement.



*Figure 5-23; concept of the proposed brass material. Source: pinterst.com*

### 5.3.3.5.2 Medium Density Fiberboard (MDF)

Popularly known as MDF, medium density fiberboard is a soft board that does not have grain particles thus easy to manipulate to fancy design. It usually lacks spalls along the edges when carved in curves or sharp angles (Ullman & Vila, n.d.). “MDF takes paint like a champ” and lacks knots on the surface due to its smooth nature (Ullman & Vila, n.d.) (KRISTI, 2014). The board has been put as an excellent material for indoor furniture designs especially those that demand carving and specifically for this thematic area, laser cutting. The researcher recommended this material as it would be well manipulated in terms of laser cut dining table top designs and is heavy thus ensure sturdiness. In order to attain excellent results, the researcher discovered that MDF surfaces could be primed with a “quality oil-based primer” before getting it painted (KRISTI, 2014). The researcher proposed use of veneer after which glass with smooth edges would top the laser cut MDF table top. “The advantage of a glass-top dining table is that it works well with many décor themes. And because it has a reflective surface, it is an excellent choice for a space that might need to look lighter and brighter...” (Redman, 2015).



*Figure 5-24; etched pattern on the proposed dining table material, MDF Board. Source: pinterest.com*

### 5.3.4 LANDSCAPE ARCHITECTURE

A master of landscape architecture allows designers to develop a space “that creates and enables life between the buildings...” (Holmes D. , 2019) and other outdoor environments across towns and cities, like walkways, gardens, schools, residential backyards, malls,

hospitals, children playgrounds, restaurants and more. The landscape, depending on design implemented, will exude different kinds of attitudes and expressions from different users. The researcher, as mentioned in the previous chapter, looks to a recreation of Freetown Recreation Center, according to the presented guideline, beautiful universal design. The recommended designs put into consideration the aesthetic factor using both upcycled texture and adinkra symbols as well as access and circulation.

### 5.3.4.1 Walkways and Walkway covers

On the summary findings, the researcher outlined that the walkways in Freetown Recreation Center are narrow, with loosely placed mazeras. These in turn render them impassable by wheelchair users and older persons who lack proper stability. The researcher recommended stenciled concrete and pavers, popularly known as cabro blocks (Noonan, n.d.). Pavers do not require a lot of maintenance levels and produce appealing flooring on driveways and walkways. The researcher recommended an alternation of pavers and stenciled concrete that enumerates glamour and uniqueness. Consequently, concrete slabs are stable when installed professionally and become easy for wheelchair users, abled and older persons to maneuver on them and offer durable services when compact to the ground.



Figure 5-26; stenciled concrete on walkway. Source: (Noonan, n.d.)

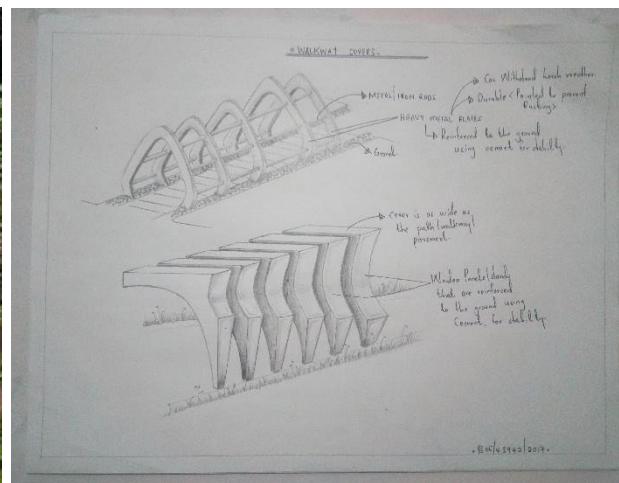
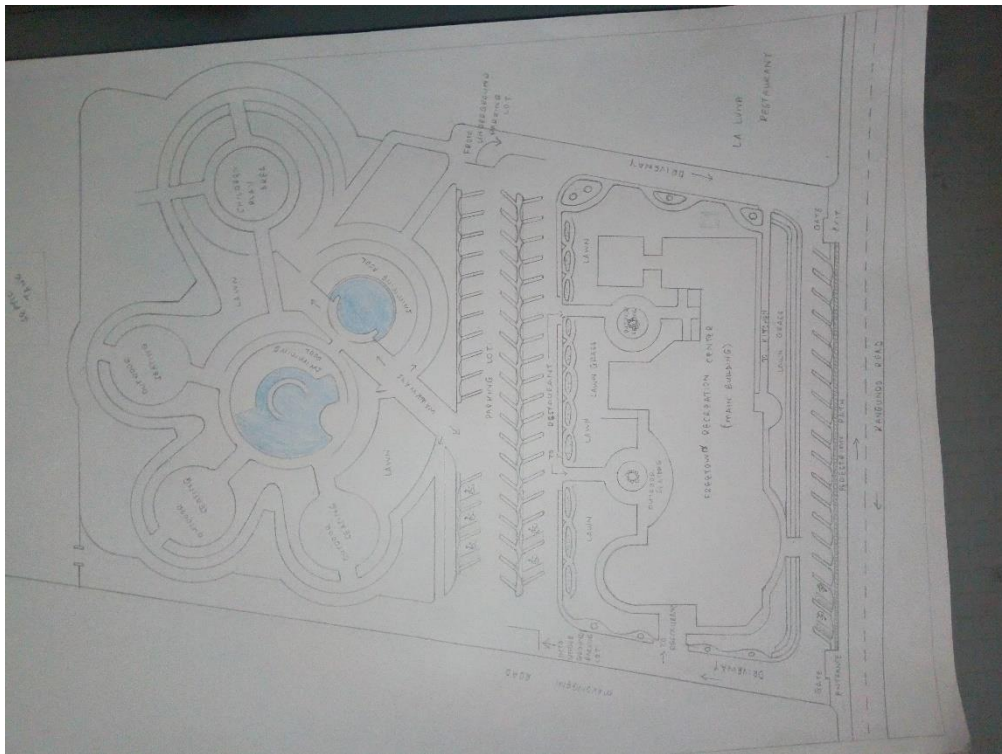


Figure 5-25; concept of proposed walkway covers. (Author, 2020)



### 5.3.4.2 Soft Landscape

An extensive part of the landscape design in Freetown Recreation Center has a variety of soft landscape, with a wide range of tree and shrub types. The researcher therefore did not intend on changing this fact but work on the alignment, balance and the point of focus of different shrubs and trees, while giving purpose to some. An example would be planting the Royal Cuban palm tree along the swimming pool that with time would form a shade for the daybeds during the hot seasons. The concept below gave the recommended general layout of the landscape at Freetown Recreation Center.



*Figure 5-27; concept of the general layout of Freetown's landscape design. (Author, 2020)*

### 5.3.4.3 Parking Lot design

“Great parking lots are safe, attractive, drain efficiently when it rains...” (Morrow, 2013). These are among the factors of a functional parking lot that have been overlooked at Freetown Recreation Center. The parking lot as a design subject demands a lot of considerations and for this project, the researcher focused on the parking lot layout, the parking lot markings, surface textures, the aesthetic nature and lighting, all which lack at the site.

Circulation and access patterns should be as obvious and simple as possible to ensure access and flow of traffic in and out of the premises as well as within the parking lot (Chapter 5 Parking Lot Design- Asphalt Paving). This includes pedestrian aisles that are wide enough to allow easy access for all people, regardless of age and ability. The driveway was dependent on the boundary walls within which the site is located, where the researcher recommended a one way aisle because the entrance and exit is separate. The 60° parking angle provides an ease of operation while easing entrance and exit into and out of the parking lot respectively hence recommended. With a width of 52.5meters, the researcher proposed both the double row one way aisle and single row one way aisle parking lot. Specific zones were set aside to accommodate both regular and handicapped users. With this, the researcher proposed the yellow and black colors to indicate presence of a functional lot, while blue markings and a white wheelchair user icon were to be used to indicate handicapped user zones.

Ground textures initially at the site’s parking lot consisted of gravel and sand, which are loose ground materials not suitable for a functioning lot. To support accessibility, the researcher recommended slip-resistant pavers installed professionally for firmness and stability (Morrow, 2013).

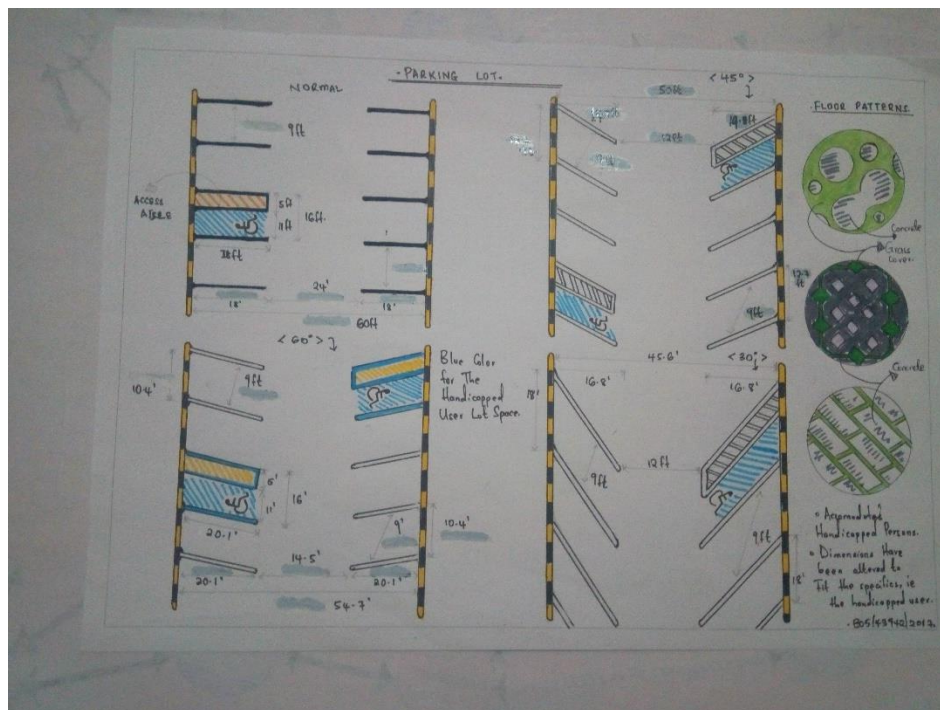
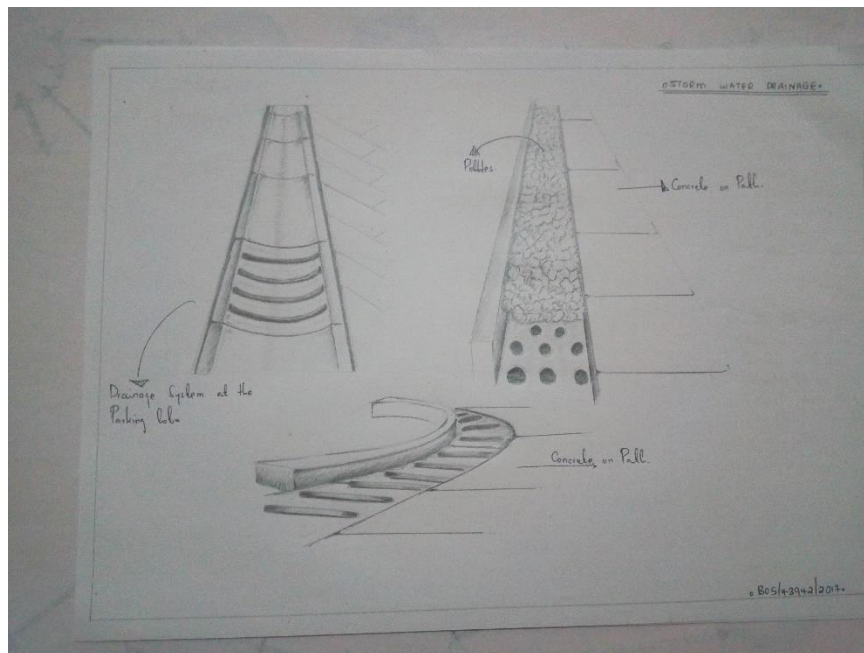


Figure 5-28; concept sketch of the proposed parking lot design. (Author, 2020)

#### 5.3.4.4 Storm water drainage

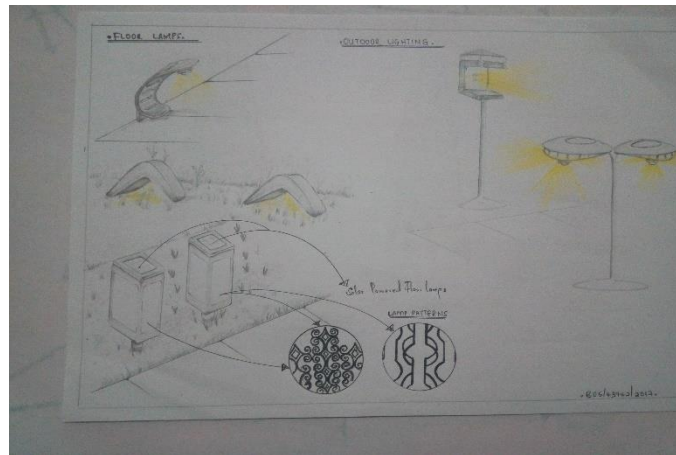
Extreme weather events for example heavy rainfall would result to unpredictable floods that would catch residence or facility owners by surprise due to an unimplemented storm water drainage. Such is the case for Freetown Recreation Center, where excess water is let to dry by itself or pumped once the manholes overflow with rainwater. Puddles of water fill the parking lot and driveway, rendering them impassable. Storm water drainage is “an investment into the sustainably, resilience and livability” of a space (Bealty & Mitchell, 2017). Below were the recommended designs that were to be placed along the main building, the parking lot to prevent breakage of the pavers. To add on, storm water could be collected or drained to water growing vegetation.



*Figure 5-29; concept sketch of the proposed storm water drainage design. (Author, 2020)*

### 5.3.4.5 Outdoor lighting

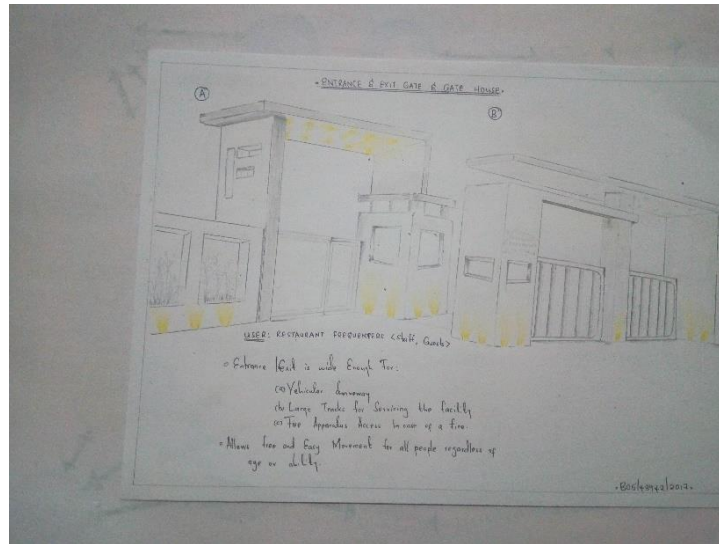
These render a space more striking and distinguishable. Outdoor lighting is best for an impressive outdoor ambience as well as security management, excellent navigation, putting focus on both the soft and hard landscape (Reddigari & Corlett, n.d.). The outdoor lighting categories recommended were floor lamps, security lighting and lanterns to serve the walkways, the garden, the parking lot, the swimming pool, the boundary walls and the gates.



*Figure 5-30; concept sketch of the proposed outdoor lighting fixtures. (Author, 2020)*

### 5.3.4.6 Gate and Gate house

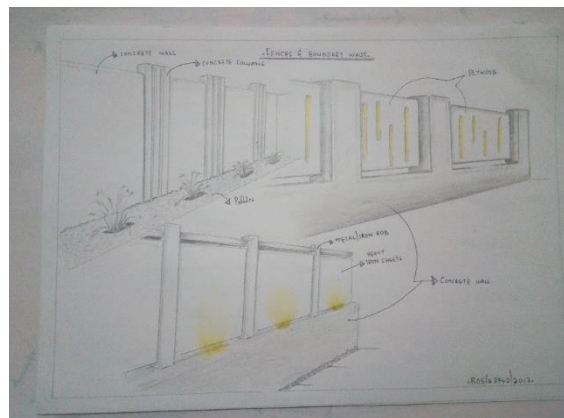
The entrance to a space already leaves a first impression or an already formulated thought and attitude about how the interior looks like. Therefore, as a recommendation, the researcher came up with the designs below that include a gate house so as to navigate entrance and exit. They were to be designed to be wide enough for vehicular driveway, large tracks for servicing the facility, fire department vehicles in case of a fire. Access and circulation is monitored and easy regardless of age or ability.



*Figure 5-31; concept sketch of the proposed gate and gate house design. (Author, 2020)*

#### **5.3.4.7 Fences and Boundary walls.**

Boundary walls have evolved in the recent years to become a highlight to landscape design and more, as a point of emphasis (Licos, 2016). Fences at Freetown Recreation Center all comprise of iron sheets and bougainvillea tamed using mesh wire. Recommended were solid concrete walls with simple patterns of the wisdom knot adinkra symbol (nyansapo), painted using a gold color on a white background.

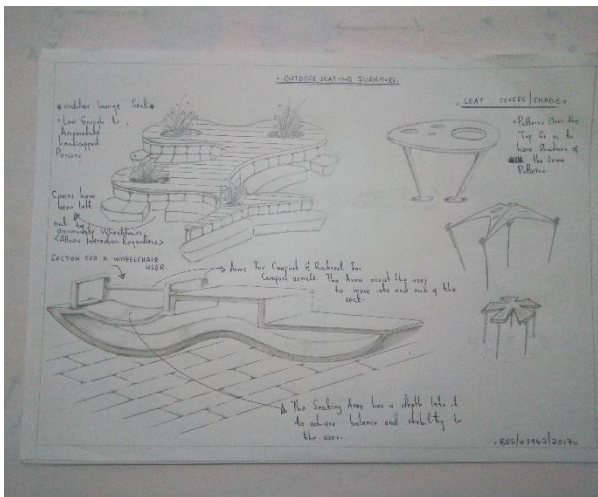


*Figure 5-32; concept sketch of the proposed fence design. (Author, 2020)*

#### **5.3.4.8 Outdoor seating**

Around the seating area, the researcher recommended floors with mosaic pebbling, with patterns of the Nyame Ye Ohene adinkra symbol for uniqueness and originality. This is an amazing floor cover and as much as installation will require an excessive amount of labor, the design would be worth the time and “impress anyone who walks on it” (Noonan, n.d.).

The concept sketch below shows two types of outdoor furniture proposed, ‘the wave’ that accommodates a wheelchair user, with handles for support and a backrest. The seat also has a depression, in which a wheelchair can sink it for stability and comfort. The other is ‘amorphous’. Given by its name, as suggested by the researcher, it does not take any shape. The seat was recommended as it had the potential to accommodate a number of persons at a go, including wheelchair users, whereby spaces have been assigned, wide enough to fit a wheelchair or two.



*Figure 5-33; concept sketch of the proposed outdoor seating furniture. (Author, 2020)*



*Figure 5-34; marble mosaic path. Source: (Noonan, n.d.)*

#### 5.4 CONCLUSION

This section presented a summary of key findings on the four thematic areas provided for the course; interior architecture, furniture design, exhibition and display, furniture design and landscape architecture. This was after a survey was conducted using interviews, participatory observation as well as documented sources. The researcher therefore gave various recommendations on all four areas in relation to the main objective of the study, to determine the aesthetic and accessibility nature of Freetown Recreation Center spaces and examine its fitness for its young and old frequenters. Aspects of African design specifically the Aya, Gye Nyame, Nyame Ye Ohene and Nyansapo adinkra symbols, sustainable design using upcycled texture were used to generate functional recommendations for the site. During this process, the proposals established by the researcher all aimed at achieving accessible, beautiful and empathic qualities for the spaces at Freetown Recreation Center, that appeal to the young and old frequenters. In conclusion, according to the researcher, an

application of these proposals would render design aesthetic, serving their purposeful functions while encouraging sustainable development.

#### 5.5 SUGGESTIONS FOR FURTHER STUDIES

Upcycling is a practice rarely performed in large scale interior design. To be specific, upcycled texture is seemingly also used for small scale design while it is a captivating practice that can transform a wide range of interior design subjects to appear luxurious and appealing. Apart from the techniques for upcycled texture application mentioned in this paper, the researcher suggests further research and experimentation by interested parties. This is because there could be very many unrealized textures from materials termed as waste, those that could increase the value of spaces while offering practicality.

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## APPENDIX A

### INTERVIEW QUESTIONS

1. How would you describe the population at Freetown Recreation Center? Who are the majority guests between the older men and women and the youth?
2. What do you think about the state of furniture in this facility?
  - a. Outdated and requires new design
  - b. Average (comfortable)
  - c. Unique
    - If outdated and requires new design, what are your possible recommendations?
    - If average (comfortable), provide reasons that influence your response.
    - If unique, provide reasons that influence your response.
3. Is Freetown Recreation Center fit to accommodate wheelchair or blind users (people)?
  - a. If yes, what are the main reasons that influence your response (answer).
  - b. If no, give reasons why and probable solutions to the challenge.
5. What are your thoughts on the general standards of interior design at Freetown Recreation Center that is the;
  - a. Floor finish
  - b. Color scheme
  - c. Ceiling treatment (design)
  - d. Furniture layout (organization)
  - e. Wall treatment (design)
  - f. Lighting
  - g. The bar area

**N.B** For this question, provide your answers within these guidelines: outdated (old), excellent (okay as it is) or unique). If outdated, provide reasons why and suggestions that can solve the challenge.

6. How would you describe the state and design of the landscape (outdoor/exterior design)?

- a. Parking lot
- b. Pathways
- c. Entrance and exit
- d. The vegetation
- e. Outdoor seating

**N.B** For this question, provide your answers within these guidelines: outdated (old), excellent (okay as it is) or unique). If outdated, provide reasons why and suggestions that can solve the challenge.

7. Do you think there is consideration behind the existing design strategies (is there a theme or reason influencing the design)?

- a. If yes, provide the main reasons that influence your response (answer).
- b. If no, state the reasons influencing your response and identify whether the state of design changes if there is a theme considered.

8. Do you think redesign (renovation) would influence the population density at Freetown Recreation Center? Provide reasons that influence your answer whether yes or no.

## APPENDIX B

### PARTICIPATORY OBSERVATION CHECKLIST

*Table 6-1: participatory observation checklist. (Author, 2020)*

<b>THEMATIC AREA</b>	<b>DESIGN SUBJECT</b>	<b>POOR</b>	<b>AVERAGE</b>	<b>GOOD</b>
<b>Furniture Design</b>	Bar stools		★	
	Bar counter		★	
	Dining table		★	
	Dining chair		★	
	Lounge chair			★
<b>Interior Architecture</b>	Wall treatment	★		
	Ceiling treatment	★		
	Floor finish		★	
	Lighting	★		
<b>Exhibition and Display</b>	Signage	★		
	Wine rack			★
	Kitchen display units	★		
<b>Landscape Architecture</b>	Walkways		★	
	Soft landscape			★
	Parking lot	★		
	Outdoor seating			★
	Outdoor lighting		★	
	Storm water drainage	★		
	Entrance and exit		★	
	Boundary walls		★	