



**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)**

**INCORPORATING UNIVERSAL DESIGN AND THE LAMU CULTURE IN  
THE RE-DESIGN OF THE BIG VILLA LOUNGE.**

**(A Case Study of The Big Villa Lounge.)**

**By: B05/43745/2017**

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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.

March , 2020

**DECLARATION**

I Christopher J. Kamau Kago hereby declare that this is my original piece of work and it has not been presented for the award of Degree in any other university. Where ideas of other scholars have been used, I have clearly indicated in a standard way.

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Signature.....Date .....

**DIRECTOR**

For and on Behalf of the School of the Arts and Design, University of Nairobi.

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The Director School of the Arts and Design, University of Nairobi.

Signature..... Date .....

## **DEDICATION**

First of all is to dedicate this paper to the God Almighty for seeing me through my education life, for faithfully bringing me this and for protecting me all through my life . I also dedicate this paper to my lovely parents,my mum Ms.Joyce Mithia Karande and my dad Francis Kago Kamau for being my support system, ensuring that I receive the best education, bringing me up to believe that I could do anything that I set my mind to do and always praying for me. They brought up me to be religious, resilient, follow my dreams, pursue my passion and develop my talents. I could not make it this far without their support and even for tolerating me through my years of learning I know it was not easy. My two lovely sisters Ruth and Lucy, for the encouragement and believing in me. Not forgetting my grand parents Mr&Mrs Stephen Karande with your constant emphasis in education and being best in what I do. Last but not least to my departed grandparents Mr&Mrs James Kamau I hope I've made you proud wherever you are may you rest in peace.And for everyone else from my aunties,uncles,cousins and also friends that have supported me be where I I'm today.

## **ACKNOWLEDGEMENT**

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Special gratitude goes to the Management, of **THE BIG VILLA LOUNGE** for their time and unfailing willingness to give information wherever I needed it and allowing me to use their premises for my research. My gratitude also goes to the respondents for giving me their time so that I could do my research.

Last but not least to my I would like to extend special thanks to my friends who became family J.Oluoch, D.Gichohi, S.Omanyala, Mr Walker, S. Kimanzi, A.waiguru, L.Wambui, S.Wangare for the fun times and the moral support in the past four academic years. The journey was full of ups and downs but it was worthwhile because of your friendship. You are special.your presence in my life has been a gift. I would like to thank you for all the encouragement throughout these four years. You have been my rock, my solace and my very best of friends. Not forgetting the Design class of 2020 I couldn't ask for a better class, for the challenges, criticism and support that enabled us grow from humble beginnings to design intellects ready to build our beloved nation, we were a family and as we part ways may we keep the bonds that were.

## **ABSTRACT**

Interior design has in many instances been associated with aesthetics rather than functionality, but this is not the case. This research paper seeks to shed some light on how a designer can transform a lounge setting into both an aesthetic and functional space.

This research paper focuses on the plight of a physically disabled person and how Universal Design principles can be applied to improve their quality of life. Also the integration of the Lamu culture of the coastal region of Kenya into the interior space of the lounge to add a touch of the African culture and make the space aesthetically pleasing to all manner of consumers.

A quantitative and qualitative approach was used to collect data in this research. Data collection techniques included Interviews, Photography, Participant observation and audio visual materials. Data analysis followed suit and the data presented in tables.

This research paper is divided into five chapters; chapter one is an introduction to the study, outlining the objectives of the study, research questions and background to the study, Chapter two reviewed existing literature on universal design, its definition and principles and the Lamu culture. Chapter three covered the systematic methods of research the researcher used. Chapter four covered the site analysis presentation and interpretation of findings and lastly chapter five was a summary of the findings, recommendations and conclusion.

## **CHAPTER ONE**

### **1.0 BACKGROUND STUDY**

Universal design is the making of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. The idea is to design a room that is functional for any able-bodied individual (regardless of age) and a person who has special needs because of physical limitations. Universal design principles are currently being applied in modern day designs mostly in designs of public spaces such hospitals, school both the learning style and physical space, libraries, Lounge, restaurant and many more. Universal design can be applied to physical spaces to ensure that they are welcoming, comfortable, accessible, attractive, and functional.

According to world health organization (2019) more than 1 billion persons in the world have some form of disability. This corresponds to about 15% of the world's population. Between 110-190 million people have very significant difficulties in functioning. People with disabilities are more likely to be unemployed than non-disabled people. Reports as per the most recent census report indicate that 10% of the population is disabled (4.44 million people) The disabled is population is:50.4% female (2.24 million people).49.6% male (2.20 million people). To be more specific in my scope mobility disability takes up 26.2% (1.16 million people) in Kenya.

As for the case study that is the The Big Villa Lounge have not implemented universal design which seems rather discriminative to the mobility disabled.

### **1.1 PROBLEM STATEMENT**

The interior and exterior spaces of The Big Villa Lounge is located in Kiambu town just opposite Coca Cola depot has not adapted to universal design leading to exclusion of people with mobility challenges.

### **1.2 OBJECTIVES**

To establish how Universal Design principles and Lamu culture can be incorporated in the interior and exterior spaces of The Big Villa Lounge to enhance accessibility.

### **1.3 RESEARCH QUESTIONS**

How can African design using the aspects of the Lamu culture: color and patterns, can be applied in the interior and exterior spaces at The Big Villa Lounge to enhance the experience of users?

How universal design can be applied to enhance user accessibility at the The Big Villa Lounge regardless of age or disability?

How can the Lamu cultural aspects of colour and patterns be applied to redesign the landscape and human environment, furniture and to create interactive exhibition and display facilities at The Big Villa Lounge ?

#### **1.4 SIGNIFICANCE OF THE STUDY**

People of diverse abilities should be able to use buildings and places comfortably and safely, as far as possible without special assistance. People should be able to fit their way easily. The study will seek to propose ways of applying universal design principles in the interiors, Furniture, landscaping and exhibition & and display of The Big Villa Lounge.

#### **1.5 LIMITATIONS OF THE STUDY**

Having a lean budget and limited time will restrict the research to few case studies in the Interior Design sector on application of universal design in Lounges. Information on Lamu culture for design related studies such as the one undertaken here is also not readily available.

#### **1.6 SCOPE OF THE STUDY**

##### **1.6.1 GEOGRAPHICAL**

The research will be based in Kiambu county within the study area being the The Big Villa Lounge.

##### **1.6.2 CONCEPT AND CONTENT**

The study will be referred mainly to concepts of interior design that aims at enhancing the accessibility and flexibility of Lounge environments through use of Universal Design principles. The problem will be approached from the interior design standpoint with universal design and Lamu culture being used as tools to solve design problems. The study mainly relies on secondary sources but more information will be acquired from primary sources. The Materials, data and ideas will be sougheed out, to a have a project that embraces the idea of investigative ways in which universal design and Lamu culture can be applied in the interiors design, landscaping design, furniture design and exhibition & display of Lounges.

## **1.7 CONCLUSION**

The study was mainly a design research where focus was on scientific study methods of investigation. The research narrowed down to the Universal design and Lamu cultural aspect of colour and patterns as an expression of culture. The application of Universal design was studied in order to come up with enhanced experiences and spaces that have a true connection to the Lamu culture.



## **CHAPTER 2**

### **2.0 LITERATURE REVIEW**

#### **2.1 OVERVIEW**

In this chapter the researcher will concentrate on literature review concerned with; universal design principles and its application, interior spatial movement- circulation, sitting area space, furniture layout space, sustainable interior design, Lamu contemporary interior design, Lamu contemporary furniture design, Lamu contemporary exhibition and display and African contemporary landscaping design. Designing any product or environment involves the consideration of many factors, including aesthetics, engineering options, environmental issues, safety concerns, industry standards, and cost (Burgstahler, 2004). One factor that has increasingly become a major concern to designers is creating environments and product that accommodated all people; as a result, the philosophy of universal design is being applied to achieve this.

#### **2.2 UNIVERSAL DESIGN**

In her article, *Enhancing Quality Life Through Universal Design* (2009), Joines S describes Universal design as a paradigm where people of all abilities are included in the intended population of users of a product or environment. Universal design has turned into a significant plan theory for some interior architects and designers in the fabricated condition on the loose. This is on the grounds that interior designers are basically in charge of the security and solace of the individuals, cooperating with the spaces and conditions they make. These individuals additionally incorporate the crippled who are evaluated to make 15% of the total populace as per the World Health Organization. When incorporating Universal Design, understand these seven principles as envisioned by Ron Mace, the founder of The Center for Universal Design at North Carolina State University:

##### **2.2.1EQUITABLE USE**

According to Bettye Rose Connell the design aims to provide the same means of use for all users. She argues that the designer should avoid segregating or stigmatizing any users. He/she should ensure provisions for privacy, security, and safety should be equally available to all users and more so, he should make the design appealing to all users (Center of Universal design, 2001),example of inequitable design is when the intended function of the design is lost after the adaptation is made. One piece of equipment that

comes to my mind when thinking of this problem is the elevated sand table. Designers should create environments that are rich for exploration through all the senses: touch, taste, sight, sound and smell.

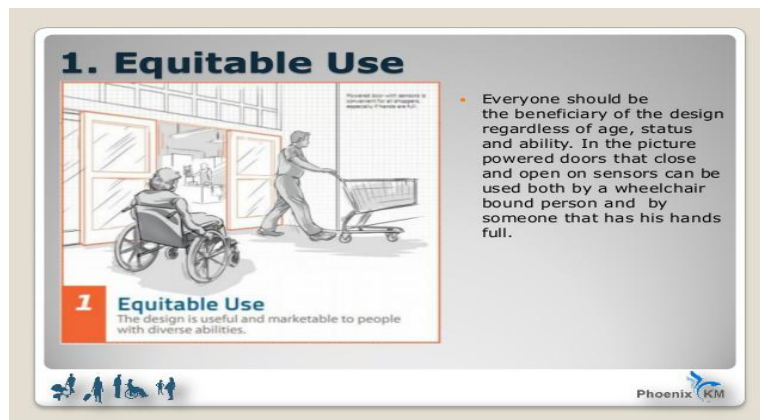


Figure 2.1: Equitable Use

(Source:<https://image.slidesharecdn.com/universaldesigninadiverseworld> 2019)

## 2.2.2 FLEXIBILITY IN USE

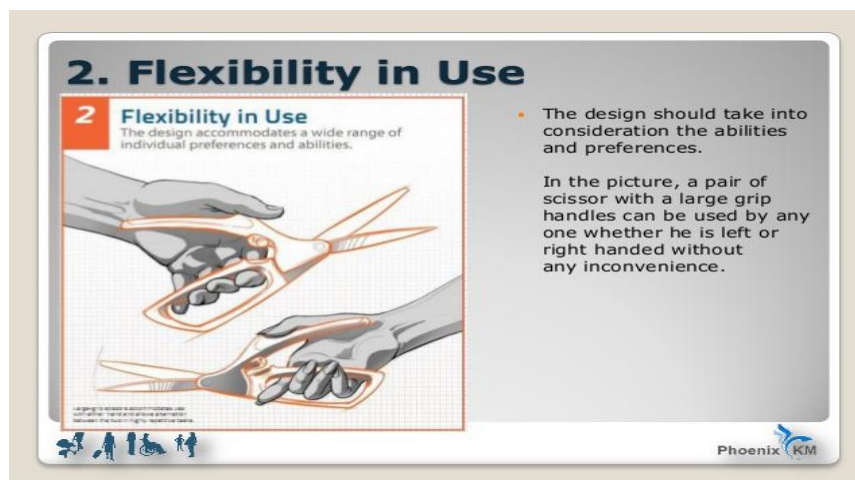


Figure 2.2: flexibility use

(Source:<https://image.slidesharecdn.com/universaldesigninadiverseworld> 2019)

In the above image, it demonstrates how flexibility in use has been taken into consideration. The pruners are designed to accommodate both left and right handed people. The ability to move confidently through the landscape or garden is the key to enjoyment. Regardless of vision, dexterity, balance, endurance or mobility, it should be easy to find your way around (or your way back). One of the key principles of Universal

Design is to keep the design unobtrusive so that it blends with the existing landscape/new landscape which is part of accessibility.

### 2.2.3SIMPLE AND INTUITIVE

Under this it means that every design should be easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level. One should aim at excluding unnecessary complication. One should also be consistent with user expectations and intuition. The design should accommodate a wide range of literacy and language skills. Guidelines for simple and intuitive design are: Eliminate unnecessary complexity; Be consistent with user expectations and intuition;Accommodate a wide range of literacy and language skills; Arrange information consistent with its importance; Provide effective prompting and feedback during and after task completion. (The principles of universal design, 1997).

Here, Universal design promotes understanding by making methods of operation and use intuitive, clear, and unambiguous (Steinfeld, 2012).

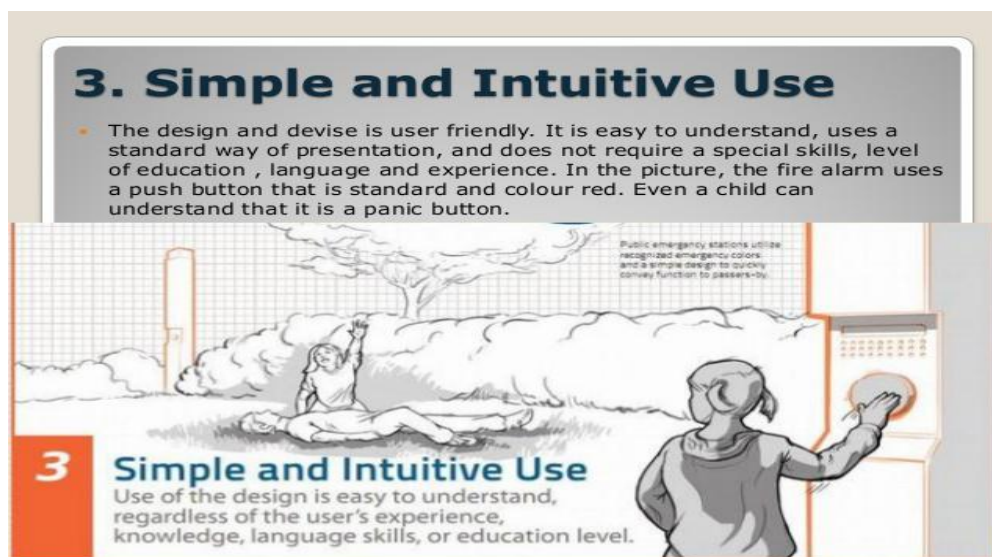


Figure 2.3:simple and intuitive use

(Source:<https://image.slidesharecdn.com/universaldesigninadiverseworld> 2019)

### 2.2.4PERCEPTIBLE INFORMATION

One should ensure that the design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities. One can do this by use of different modes which are pictorial, verbal or tactile for redundant presentation of

essential information, and this is according to rose Betty. (Centre for Universal Design, 2012).

Guidelines when applying the principle of perceptible information; Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information; Provide adequate contrast between essential information and its surroundings; Maximize "legibility" of essential information; Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions); Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

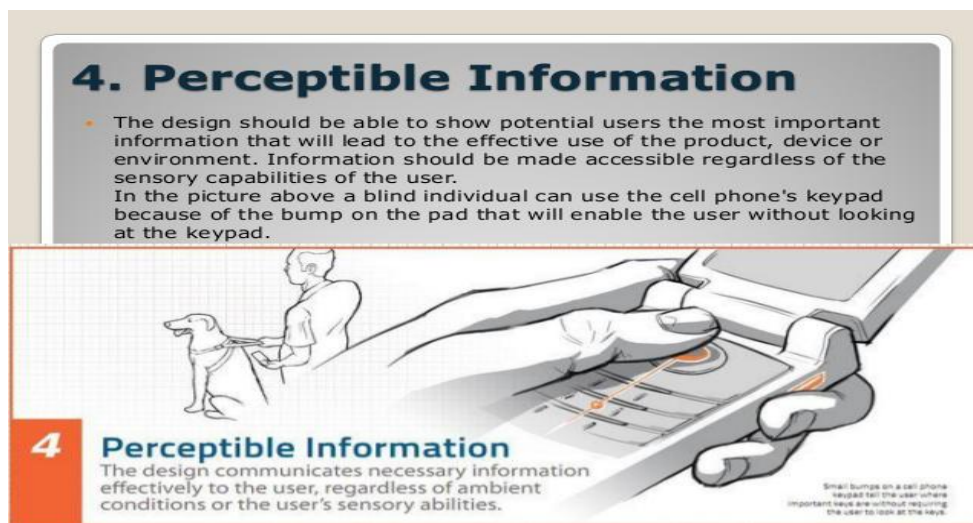


Figure 2.4: Perceptible information

(Source:<https://image.slidesharecdn.com/universaldesigninadiverseworld> 2019)

### 2.2.5 TOLERANCE TO ERROR

Each design should minimize hazards and the adverse consequences of accidental or unintended actions. Elements should be arranged in a way to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded. The designer should provide warnings of hazards and errors. Creating designs for the physically disabled persons must include adherence to a variety of mandatory and voluntary safety guidelines.

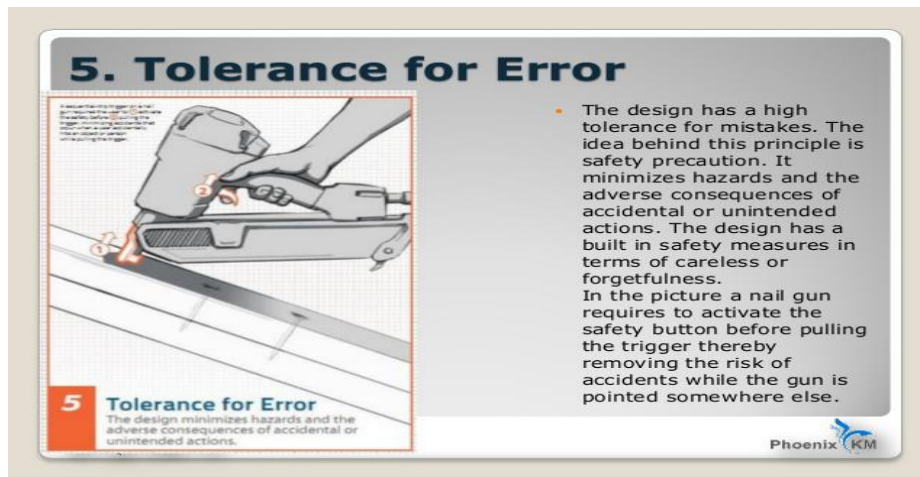


Figure 2.5: Tolerance for error

(Source:<https://image.slidesharecdn.com/universaldesigninadiverseworld> 2019)

### 2.2.6 LOW PHYSICAL EFFORT

The design should be of appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility (Centre for Universal Design, 2012). The design should bear in mind that the user needs to exert the most minimum effort for a device to function. This principle allows both the strong and the weak in stature to enjoy the benefit of a Universal Design. Comfort and ease of use is the driving force behind this principle.

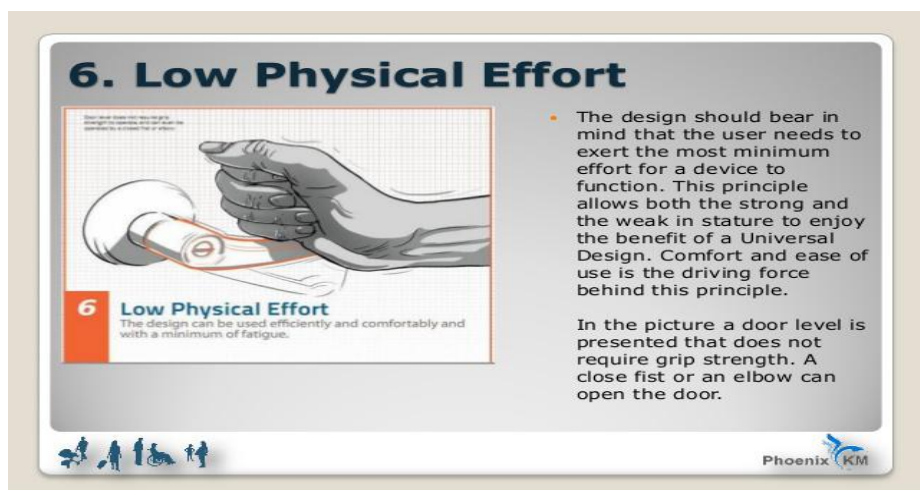


Figure 2.6; Low physical effort

(Source:<https://image.slidesharecdn.com/universaldesigninadiverseworld> 2019)

## 2.2.7 SIZE AND SPACE APPROACH AND USE

Appropriate size and space is provided for approach, reach, manipulation and use regardless of users body size, posture or mobility. Provide a clear line of sight to important elements for any seated or standing user. Make reach to all components comfortable for any seated or standing user, accommodate variations in the hand grip size and provide adequate space for the use of assistive devices or personal assistance.

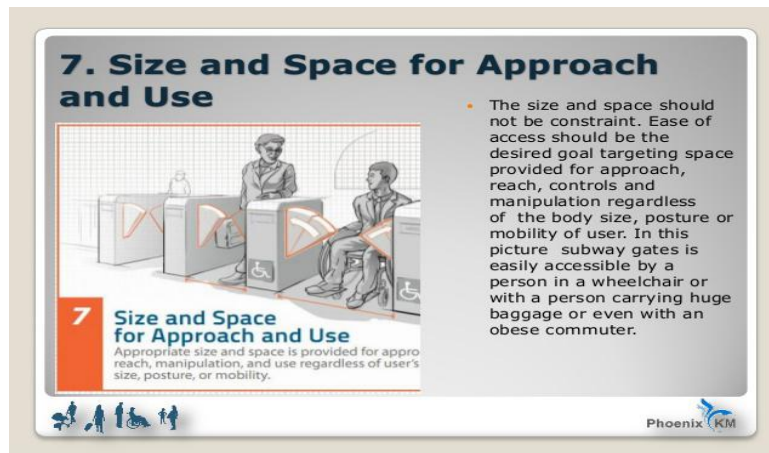


Figure 2.7 :size and space for approach and use

(Source:<https://image.slidesharecdn.com/universaldesigninadiverseworld> 2019)

## 2.3 ENTRANCES

The design of an entrance has significant influence on both the appearance and functionality of the building. Entrances signify the point of access to a building; provide a focal point for staff, residents and visitors; and serve to welcome people into the building. A clearly visible entrance is likely to create a positive impression for all building users and make them feel welcome. According to the ( **Accessibility design manual:2-Architecture:6- Entrances -United nation of 2003-04** ) 'it states that for new accessible constructions, all main public entrances should be accessible to an ambulant disabled person. At least one entrance per facility should be accessible to a wheelchair user. In new buildings, the accessible entrance(s) should be the main entrance(s) intended for use by the general public'.( **National Disability Authority, )** The entrance needs to smooth and at ground level without stairs. If stairs are to be used, alternative entrance for people with disabilities should be provided. A minimum 5'× 5' level clear space inside and outside entry is required. One to a half inch maximum rise at entrance thresholds, this will as result reduce tripping hazards. ( **Design, 2006** ).

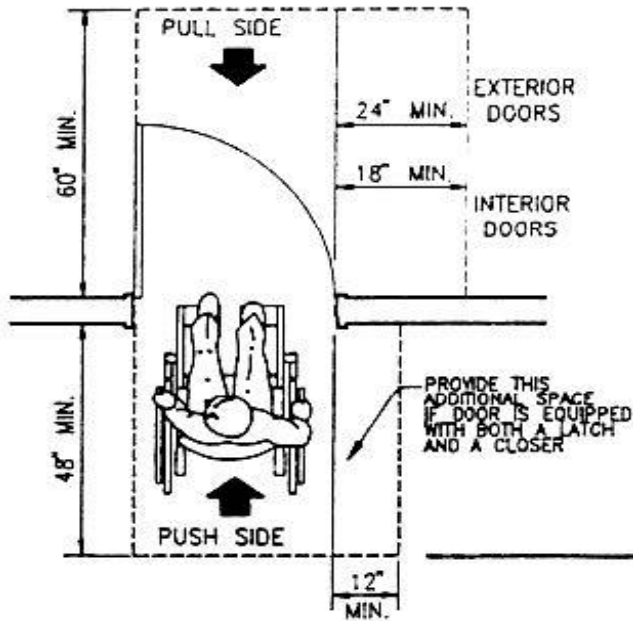


figure 2.8 Showing measurement required on a entrance by a person using a wheelchair.  
 Source;(http://sos.ca.gov doorways,hallways and entrance section 11B-404.2.4.1 and 11B-404.3.)2020

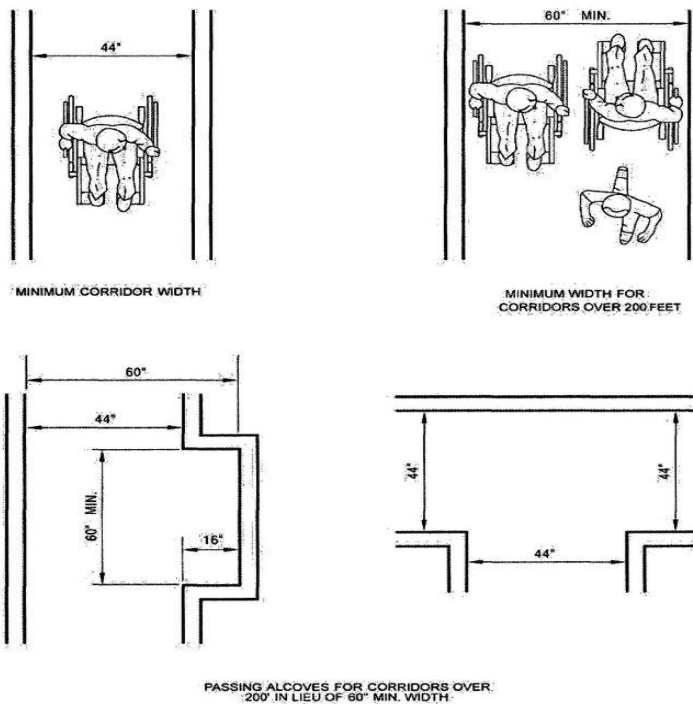


Figure 2.9; Showing passing alcoves for corridors  
 Source;(http://up.codes, chapter 11A:housing accessibility building code 2016)2020

## 2.4 FURNITURE

During the selection of furniture, it's important for the designer to consider design characteristics such as the apron, arms and seat pan heights and depths. A piece of furniture without armrest may facilitate an individual's ability to transfer from the side of the future; however armless pieces reduce a person's ability to use the strength of their upper body to augment their lower body strength when ascending and descending. Furniture with low seat pans may fit the potentiality height of a person shorter stature, but again may require additional effort (e.g. strength in the quadriceps) while rising. Furniture with deep seat pans may afford someone to read a book, but it may also require weaker, smaller individuals to scoot forward multiple times to gain purchase of the edge of the seat in order to rise. **(Joines S. , 2009)** Seats should be in the range of 450mm to 475mm high and a recommended width of 500mm with firmly padded seats incorporating rounded front edges. **(National Disability Authority, )**The position of furniture in any interior environment must allow an individual to navigate the wheelchair easily and safely. All common access paths should not have furniture protruding into the space and making the routes narrower than required for wheelchair access. Any passage must be at least 36 inches wide continuously, though it is permissible for passages to be as narrow as 31 inches at individual points. Each item of furniture must have a 30-inch by 48-inch approach space, though if appropriate this area can be arranged so the worker accesses the furniture from the side of the wheelchair rather than the front. The workspace must have a clear space 36 inches in diameter to provide enough area to turn the wheelchair around. Storage shelves should be placed low enough to be reachable by an employee in a wheelchair.

Equipment controls should also be accessible by any employee. An especially challenging situation involves work surfaces typically used when standing. Lowering these surfaces for wheelchair accessibility makes them unusable by other employees. Ideally the work surfaces will have height controls so each worker can set them to a preferred level.

**(Humphrey, 2012)**





Figure 2.10;

Source ;(<http://ergonomichome.com>)2020

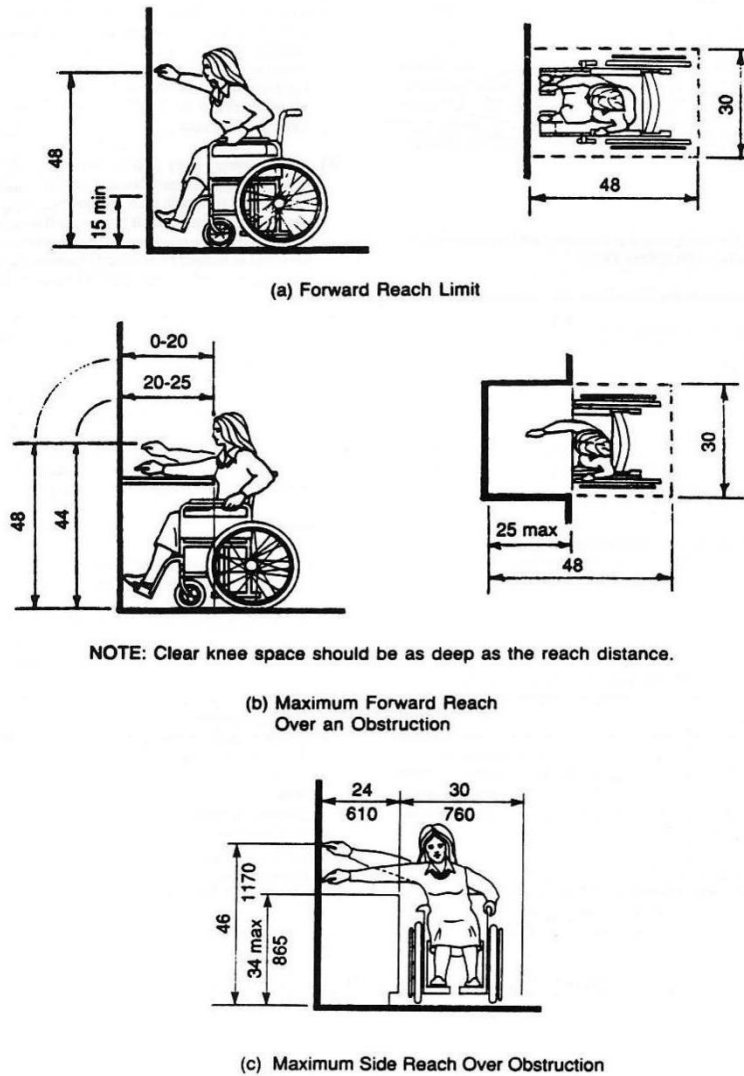


Figure 2.11 Showing maximum forward and side reach over an obstruction

Source;(<http://www.madcad.com/book-images/5267/5267-42001.jpg>) 2020

## 2.5 REST ROOM

A universally designed rest room should be comfortable and safe for all users. The common problems experienced at the rest rooms include: narrow doors and insufficient turning space, lack of knee room in under the sink and insufficient area to the toilet. There are two opportunities for application of universal design principles in the washroom; the toilet and the sink. The toilet should be centered at 18 inches from the wall; this will provide space for transfer to and from the toilet. The height of the toilet should be at a height same as wheel chairs. The standard height is between 14 and 15 inches however the height of a universal design toilet should be between 16 and 18 inches. If it is not possible to change the toilet, a stool can be applicable. Utilization of stools may help individuals obtain a posture which facilitates bowel evacuation. A stool may help shorter individuals ascend to the toilet without aid and prevent their legs from dangling, which results in decreased circulation in the lower extremities if extended time on the toilet is necessary. This benefits the younger lads during toilet training, older individual have problems in sitting and rising, short stature adults, and adults that have recently had surgery, delivered babies, or lack bowel control owing to a neurological disorder. The installation of a lid with dual diameters for the seat opening is another universal design solution to toileting support. The dual diameters enable kids and adults to both use the toilet. Grab bars made of heavy plastics or metal are suitable in the toilet for support of the physically impaired. The sink is also another important aspect as it provides hygiene to all users. Adjustable sinks are preferred as they can be raised or lowered to the level comfortable to the users. Sinks should have space under to enable access for people on wheel chairs. Clear knee space at a minimum height of 29 inches is preferred. The soap dispensers and hand dryers should also be fixed at a position that is easily accessible. The hot water at the sink should be regulated to cater for persons with reduced tactile sensitivity or numbness. **(Joines S. , 2009)** Long mirrors should be places with bottom with no more than 36 inches above finished floor and at least 72 inches high. This will enable seated people to use it. Full length mirror is more suited. **(Design, 2006)** Mirrors should not be place in front of the rest rooms, so as to avoid the reflection of someone inside the rest room when opening the door. **(Piotrowski & Rogers, Designing commercial interiors, 1999)** .As shown in figures 2.12 and 2.13 so as to get an idea of what the researcher is trying to emphasize on when it comes to designing for such persons with mobility challenges.

Bathroom with Combination Tub/Shower Unit and Portable Seat.

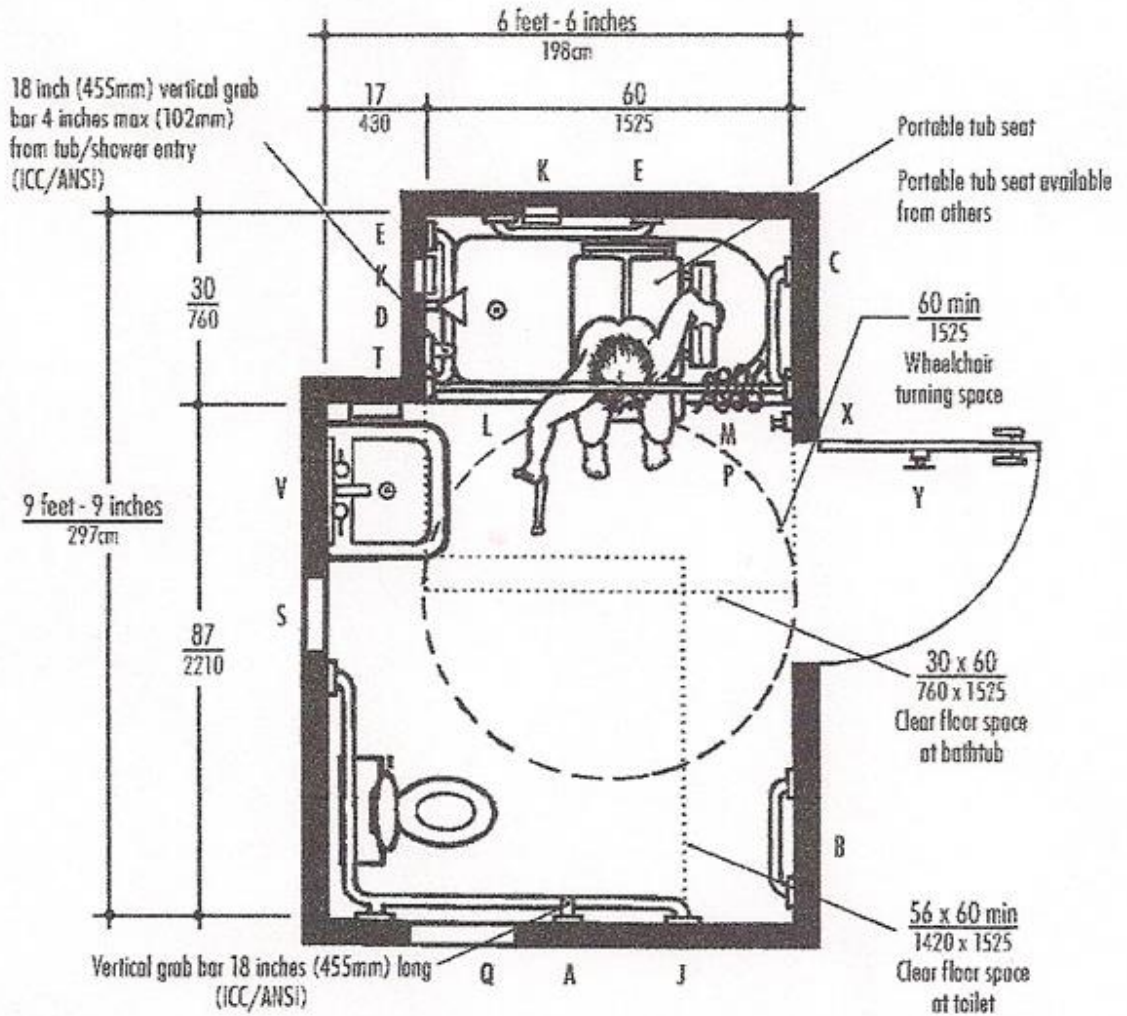


Figure 2.12

Source;(<http://pinterest.com>,ADA Design solutions for bathrooms with tub and shower compartments)2020



Figure 2.13

Source;(<http://rdconst.com>)2020

## 2.6 FLOOR FINISH

Flooring can make a dramatic difference in the appearance of any space. It will enhance the ambiance of a space. Good flooring elevates the elegance of a space instantly and it adds an ineffable quality to the space. It's important for designers to consider the function and the aesthetic appeal on a space when selecting the floor finish.

The selection of floor materials impacts an individual's mobility. Universal design has several goals when it comes to floors. The surface should be smooth and even, to avoid tripping hazards and facilitate walking and playing as well as carts, strollers and wheelchairs. It should be firm but forgiving, able to stand up to the impact of heels, cane and wheels. The floor should be slip-resistant, non glare durable and easy to maintain. Ideally it should offer some insulation value. The pattern or design of the flooring should not only look good but also help with spatial orientation subtly identification transition points between spaces and making the perimeters. (Jordan, 2008) Contrasting color can be used to define circulation routes, such as the route between the entrance door and the reception desk. Think carpets challenge users of wheelchairs, crutches and canes. In contrast, there are disabilities, such as those creating degenerative joints and altered joint angles, where the cushion associated with a thick carpet is a benefit. Hence, each social sphere member's needs should be considered. Changes in flooring material create tripping

hazards and threshold impediments. Unsecured edges, creases, or buckles in rugs can create similar and unexpected hazards. These impediments may discourages an individual from, moving with the rhythm of the house and promote a sedentary lifestyle. (Joines S. , 2009)

Bathroom floors can be very slippery, especially when wet. Many accessible showers and bathtubs come with anti-slippery surfaces. Sheet vinyl flooring is also a good choice, since it is smooth and easy to clean. If using ceramic tiles, select large,rough like tiles to minimize grout lines. Bathrooms designed for the physically impaired persons should ideally have shower seats for them to sit on while taking a bath. This is because though bathtubs are most ideal they are cumbersome to get use especially for wheelchair users. Shower seats can either be inbuilt or be stools made of waterproof material (Scott, 2008).



Figure 2.14 showing rubber-ed floor

Source;(ar.pinterest.com)2020

## 2.7 LIGHTING

Lighting has a major effect on the mood and design of any space. It can make a room bright and cheery or dark and romantic. It can make you feel relaxed, comfortable or inspired to complete a task. Lighting includes the use of both artificial light sources like lamps and light fixtures, as well as natural illumination by capturing daylight. Indoor lighting is usually accomplished using light fixtures, and is a key part of interior design. In interior design, lighting has three major aspects: the aesthetic or design aspect, the human needs aspects and the economic need.

In terms of Aesthetics and design, light is the major enable in assisting perceptions of interiors; however it is far more than that. Light enables knowledge of surroundings and it defines various spaces, zones and boundaries within spaces. It creates aesthetic moods and effects, identify place, accentuate form or create shadows in chosen parts of the interior. More than, this light affects, our emotions and our physical and mental well-being. Secondly in terms of Human needs and lighting, light plays a crucial part in life. Humans react to what they see: therefore, lighting is very important in people's responses to situations and spaces. Lighting can influence people's reaction to spaces in terms of perceiving a sense of pleasantness, relaxation, intimacy, apprehension and clarity. And in terms of economic need, the issues that center on economic aspects include initial cost, the installation process and matters of maintenance and operation. **(Edwards, 2011)** Lighting come in a wide variety of styles for various functions. The most important functions are as a holder for the light source, to provide directed light and to avoid visual glare. Some are very plain and functional, while some are pieces of art in themselves. Nearly any material can be used, so long as it can tolerate the excess heat and is in keeping with safety codes .An important property of lighting is the luminous efficacy or wall-plug efficiency, meaning the amount of usable light emanating from the fixture per used energy. The more transparent the lighting fixture is the higher efficacy. Shading the light will normally decrease efficacy but increase the unidirectionality and the visual comfort probability. Lighting is classified by intended use as general, accent, or task lighting, depending largely on the distribution of the light produced by the fixture. **( The House Designers, 2013)**.Task lighting is mainly functional and is usually the most concentrated, for purposes such as reading or inspection of materials. Accent lighting is mainly decorative, intended to highlight pictures, plants, or other elements of interior design or landscaping. General lighting or ambient light fills in between the two and is intended for general illumination of an area. **(Edwards, 2011)**



Figure 2.13

Source; ([blob:https://www.pinterest.com/bb732745-4fe5-42bb-8f04-f063777ef2d8](https://www.pinterest.com/bb732745-4fe5-42bb-8f04-f063777ef2d8))2020

## 2.8 LANDSCAPING

In Landscaping in Universal design can be applied on the paths and surfaces  
For one-way traffic to accommodate the turning radius of a wheelchair, a five-foot minimum width at paths required. For two-way wheelchair traffic, a seven-foot minimum width. Creating texture at the edge of a path will help people with low vision to recognize when they are off the path. Raised edges on a path can create a tripping hazard. Path surfaces must be firm, smooth, and provide traction to allow for easy movement of wheelchairs. Paving with deep grooves can be an obstacle.



Figure 2.14

Source;(<https://i.pinimg.com/600x315/91/20/b5/9120b53ef80471a2c83c87528f05bf25.jpg>) 2020

## **2.9 DESIGN CHAMPION**

### **2.9.1 Ed Roberts (Architect).**

Ed Roberts was born in 1939 and became disabled in 1952 as a result of polio. In 1962, he was the first severely disabled student admitted to the University of California. He was an early leader of the Independent Living Movement, a struggle by people with disabilities to control their own lives. The movement began in reaction to the dehumanizing processes people with disabilities were subjected to, and it championed the need for equal access and equal opportunity. It recognized that the struggle for independence was not a medical or functional issue; it was a matter of civil rights. At a rally in front of the federal building in San Francisco, which ultimately resulted in a major change in federal disability policy, Ed defined the problem as the system's view that disabled people should have a "separate, but equal world." He captured the sentiments of the disability movement when he declared, "Integration is the key word. People with disabilities have to come back into our society." **(Ed Roberts campus, 2008)**

The Ed Roberts Campus is a universally designed Campus built in California, U.S.A. It was designed to be a memorial to the life of Ed Roberts who was an early leader of the Independent Living Movement. This building's interiors bring together disability services and create a center that is a resource for everybody in the community and it's an example of how form and function can work together. The interior design of this building



expresses the idea that good design is fundamentally social for justice issues. The interiors are universally designed making architecture and design important and are for inclusion for all people; the presence of a two storey spiral designed ramp going up instead of stairs makes it possible for everyone to access the top floors of this building. Furthermore the building has some sustainable feature; the roofing at the middle of the building has been designed with clear glass trapping in enough natural light from the sun hence reducing on the electricity used for lighting. (Ed Roberts campus,2008)

## **2.10 EXEMPLARS UNIVERSAL DESIGN**

### **2.10.1 BALDINGER ARCHITECTURAL COMPANY**

Baldinger architectural studio is a tempe, Arizona architecture & design firm established in 1986. The Arizona architecture firm is organized as a true collaborative 'studio', promoting a creative & interactive environment, which enables architects & team members to have a continuous and intimate involvement in all phases of design & construction.

They design elegant modern buildings that withstand the test of time. these buildings are rational, functional, well engineered, economical, easy to build, easy to maintain, energy efficient and environmentally responsible.

#### **2.10.1.2 WORK**

In March of 2012 the second and last phase of the Disability Empowerment Campus was completed with the opening of the 45,000 S.F. Virginia G. Piper Sport and Fitness Centre for Persons with Disabilities (SpoFit), a first of its kind Sport facility in the Western United States. With the experienced gained from the first phase design and construction and an ever heightened commitment to remove all barriers, they seamlessly fused function, environmental considerations and high aesthetics into a “total environment” extending from the site to buildings. The Spo-Fit fulfils its intended program requirements and goals while promoting health, wellness and the active participation in sport and fitness activities of the widest group of empowered users; be it the individual user, the Olympic athlete, a local Sports Club or National team. The campus greatest achievement is the “total environment” affording complete freedom of movement and activity, in a safe, healthy environment. This well perceived “total environment” contributes to the stake holders pride in ownership, a community that for too long had to adapt to make-shift solutions.



Figure 2.15

Source;(archdaily.com)2020

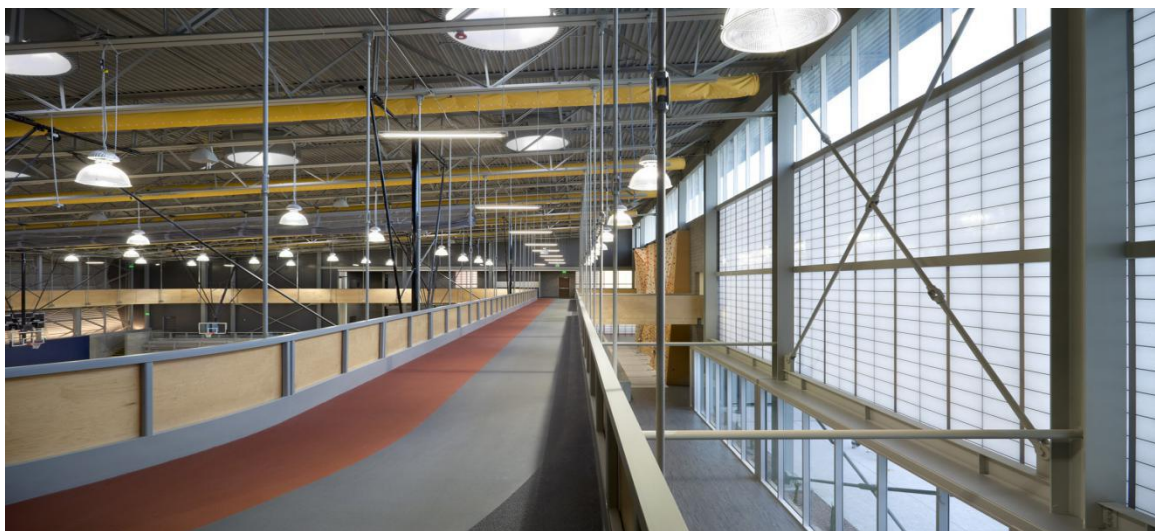


Figure 2.16

Source;(https://www.archdaily.com/587732/sport-and-fitness-center-for-disabled-people-baldinger-architectural-studio/54b74eb9e58ecee5db000068-020\_2nd\_floor\_track-jpg?next\_project=no ) 2020

### 2.10.2TIM ADEN

Tim is the co-founder and owner of Custom Kitchens & Design, Inc., doing business as Sawhill, or Sawhill Kitchens. Custom Kitchens & Design, Inc. was founded on January 12, 1990. Started in the kitchen & bath industry as a "Gopher" along with assisting in general remodeling and assisting with cabinet installations & cabinet making. After about 3 years Tim moved into the office and helped with drafting kitchen & bath plans,

and then became the Job Coordinator, or Project Manager. Eventually Tim began designing and selling kitchens/baths to his own clients, and then finally also served as the Sales Manager. Tim is the glue that holds every sawhill customs kitchens and design project together. Tim's experience has afforded him the tools necessary to coordinate all aspects of a client's project.

If you want to see the real definition of a warm and welcoming kitchen, then sawhill's kitchen are ones to look at. The knotty wood cabinets combined with the wood flooring and stone tile work just calls you in to enjoy the smell of down home food. With all the beauty you may not have even noticed that this is a wheelchair accessible kitchen. They have increased the spaces of the walkways to accommodate everyone including people with disabilities by making the kitchen more flexible and easy to use. An example



Figure 2.17

Source ;( <http://houzz.com> )2020

There's not more you could ask for in this kitchen which beautifully combines form and functionality. Truly a wheelchair accessible kitchen that is not obviously one. In fact the accessible features are used to make the space better looking. As a designer and anyone aspiring to be one we should consider all aspects of people in the society through our designs and how we utilise the spaces to make sure we do not discriminate anyone through our designs but try to make their lives better and easier.

## **2.11 AFRICAN CULTURE**

African culture It is a product of the diverse populations that today inhabit the continent of Africa and the African Diaspora. It is expressed in its arts and crafts, folklore and religion, clothing, cuisine, music and languages. Expressions of culture are abundant within Africa, with large amounts of cultural diversity being found not only across different countries but also within single countries. Even though African cultures are widely diverse, they are also, when closely studied, seen to have many similarities; for example, the morals they uphold, their love and respect for their culture as well as the strong respect they hold for the aged and the important, i.e. kings and chiefs.

Africa has influenced and been influenced by other continents. This can be portrayed in the willingness to adapt to the ever-changing modern world rather than staying rooted to their static culture. The Westernized few, persuaded by European culture and Christianity, first denied African traditional culture, but with the increase of African nationalism, a cultural recovery occurred. The governments of most African nations encourage national dance and music groups, museums, and to a lower degree, artists and writers.

### **2.11.1 SWAHILI CULTURE**

The Swahili culture is a product of local influences from indigenous tribes and trading parties from the Arabic Peninsula, Persia, the Portuguese, Chinese and Indians who sailed to East Africa using dhows and with the aid of monsoon winds, and the eventual intermarriage among them. This interaction also led to the birth of a rich culture and with it came a unique type of architecture and decor found along the Swahili coast- the coastline stretching from Mogadishu in Somalia in the North to Cape Delgado in Mozambique in the South, inclusive of islands and archipelagos off the coastline (Purdy n.d.). Before the onset of British colonialization and adaptation of Westernized cultures, the Swahili people had had their fair share of interaction with foreigners from the East and had thus adopted their cultural beliefs and traditions, religion and languages. Swahili patterns are thus a result of an intermarriage of different styles coalesced by the many people who travelled to and interacted with each other along the Swahili coast for a very long time. During the 19th century, Indian influence resulted in wood carving emerging as a symbolic form of expression within Swahili art, particularly used in the decoration of doors and other domestic items (Athman 1996). This was brought about by booming mercantile trade (Meier 2009) and the construction of the East African Railway that saw the influx of immigrating Indians contracted to build the railway line in the early 20th century

### **2.11.2 LAMU CULTURE**

Lamu culture in particular and can provide information and advice on visiting other historical sites throughout the archipelago. There was significant influence on the culture of Lamu from the local Bajun people. The Bajun are an indigenous tribal group, centred around the archipelago. Their language was the genesis of Kiarnu, a wahili dialect that is the true language of Lamu. Bajun woodcarving was adapted to the traditional Omani designs of the traders, creating the distinctively patterned doors and windows still seen throughout the town. The town of Lamu is a preserved treasure of both architecture and town planning. The town consists of over 40 individual areas or mitaa, with a main thoroughfare (Usita wa Mui or Harambee Ave.) separating the original stone town from the comparatively recent 19th Century seafront. The central Sultan's Fort (1808) has been through various changes over the years, including conversion into a prison. It is now a museum and its forecourt is home to Lamu's largest open market. The streets of Lamu are never much more than eight feet wide, making them accessible only on foot or by donkey. This is for a good reason, as the proximity of the stone walls cools the air and blocks the rays of the sun. There are hundreds of historic homes throughout the town, all built to the same traditional design, with a central courtyard surrounded by narrow rooms, with ceilings made of boriti mangrove poles and a flat open roof sometimes shaded by thatch makuti shelters.

Lamu holds an annual festival dedicated to celebrating and preserving the local culture of the archipelago. This is timed each year to coincide with high tides that create ideal conditions for the large Jahazi and smaller Mashua Dhows that gather to take part in a series of races.

### **2.12 EXHIBITION AND DISPLAY**

Museum exhibition is increasingly recognized as a significant form of creative expression. Its boundaries are complex. To exhibit is to hold out, to offer, to display object or works; to expose. Fundamentally, exhibition making is focused on the content of the works to be displayed and concerns with the condition of the viewing environment. Above all exhibition design considers the simple dialogue between the objects to be exhibited and the space they are presented; where the objects are, and how they are arranged will determine the nature of the message they communicate. (Dernie, 2006)

In an African contemporary interior space, the display items commonly used include Artifacts such masks, shields, spears, walking sticks, knives, containers, snuff boxes, pipes, musical instruments, and head wear. Fine Arts: paintings, prints, photographs. Sculpture: wood, metal, stone. Found objects, natural and discard. Not all above items are displayed together at once, since African contemporary interior design is based on simplicity and clutter free. The designer will decide depending on the type space being designed and the theme of the overall design. The items selected should complement the overall design.

For a lounge the bar is the most important part of it as it's the exhibition and display stand as they get to showcase the various brands of alcohol they are offering to the consumer. It must be the most attractive part of the lounge to draw attention to anyone who is new to the place.

## **2.13 EXEMPLAR FOR AFRICAN CULTURAL DESIGNERS**

### **2.13.1 MORAN MUNYUTHE**

He is a Kenyan based architect and furniture who resides in the coast region in Lamu island. His works mainly focus largely on social and cultural manifestation through project that range from housing, hospitality and furniture designs. Moran Munyuthe is the founder of the Saba Furniture Company, a studio, workshop and retail outlet based on the island of Lamu where he works in partnership with local craftsmen to create heirloom quality furniture inspired by local design and motifs. He also runs Saba Artist Residency, a program that invites visual artists to Lamu for an annual 6 week residency. Clarity of form and detail, complexity of composition, balance and symmetry, smoothness of finish: Moran Munyuthe has used Mashirbirya patterns that are seen in Arabic-Bantu architecture, usually part of a wooden lattice screen that is used to shade the interior of buildings and decorate the exterior. They are crafted from a local wood called Mvule, each piece of furniture in the collection is hand carved by Swahili carpenters, highly skilled local artisans whose craft is in danger of dying out due to a younger generation unwilling to take it up. The minimalist design of the furniture is intended to frame the patterns and highlight the exceptional craftsmanship, as well as help preserve centuries-old Swahili wood-carving traditions. The Mashirbirya Collection, comprises of tables and chairs for interior decor inspired by the rich

cultural heritage of Lamu and how the culture of the Arab traders to Africa's East coast where assimilated into the local Bantu culture.

Luminosity: The minimalist design of the furniture is intended to frame the patterns and highlight the exceptional craftsmanship, as well as help preserve centuries-old Swahili wood-carving traditions. Youthfulness: The mashirbirya furniture depict youthfulness in the design process making it a unique in its own way His main inspiration comes from a study of the crafts and the past whilst incorporating contemporary ways of thinking and making. In a way, he is looking both backward and presently to where we are right now.

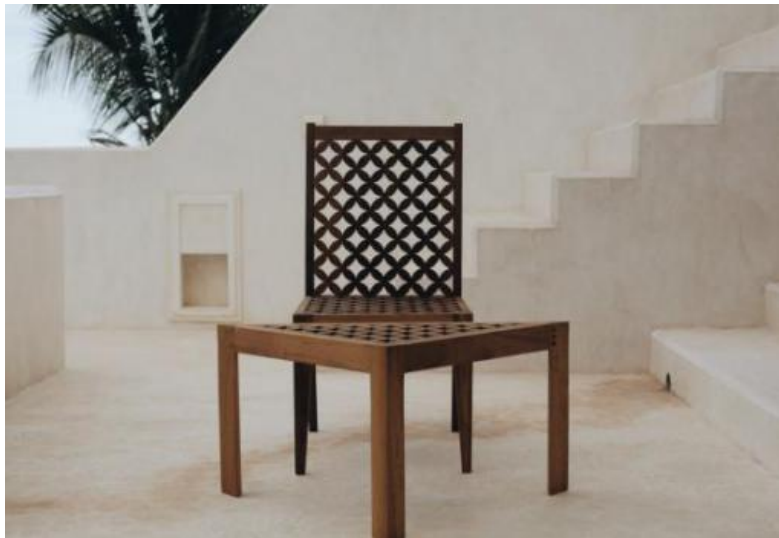


Figure 2.18

Source ;( [http://facebook.com\\_saba\\_studios](http://facebook.com_saba_studios))2019

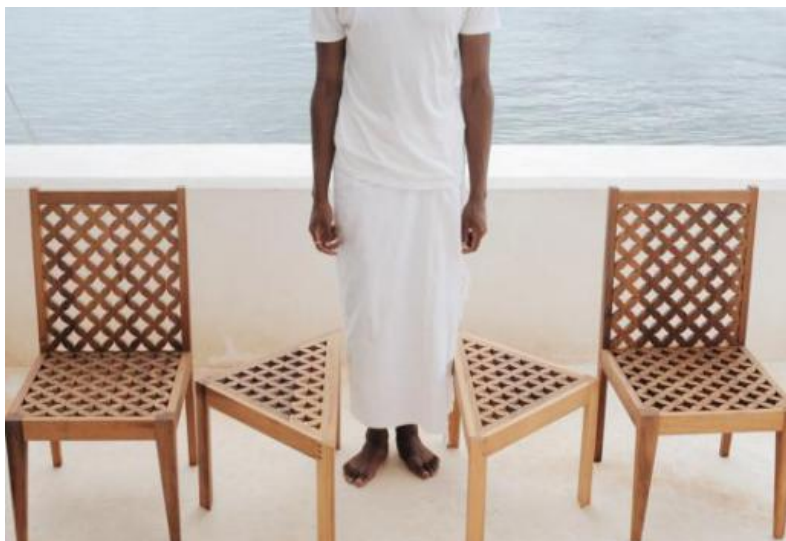


Figure 2.19

Source ;( <http://tdsblog.com> )2019

## **2.14 CONCLUSION**

In conclusion the essence of the extensive researching by the researcher was actually to get relevant information regarding universal design and its application in interior and exterior environments of Design of different spaces should be use able to all users; it should accommodate people's diverse abilities and preferences and Lamu culture to enhance the interior by the use of Mashrabiya art to enhance the interior to give it an aesthetic look that's quite appealing to the users.



## **CHAPTER 3**

### **3.0 RESEARCH DESIGN AND METHODOLOGY.**

#### **3.1 OVERVIEW.**

The researcher in this chapter explains how data was collected and analyzed for the research in The Big Villa Lounge. The researcher explains what design process was used for the study and why, he also states the population used for the study and how he came up with a sample from the population for this research. In addition the researcher, in this section, also explains the methods he used to analyze and present the data collected in The Big Villa Lounge and also he seeks to determine how Universal Design and Lamu culture has been currently applied in the interior design and to propose other ways in which modern design can be incorporated in Universal Design.

#### **3.2 RESEARCH DESIGN.**

A research design is a systematic plan to study a scientific problem. The design of a study defines the study type (descriptive, correlation, semi-experimental, experimental, review, meta-analytic) and sub-type (e.g. descriptive-longitudinal case study), research question, hypothesis, independent and dependent variables, experimental design, and, if applicable, data collection methods and a statistical analysis plan. Research design is the framework that has been created to seek answers to research questions.

According to Robert Yin, research method is an empirical enquiry that investigates a contemporary phenomenon within its real life context; when the boundaries between the phenomenon and context are not clearly evident; and in which multiple sources of evidence are used (Yin, 1984). In his explanation he highlights the main steps used in case study research as: First a design understands the design problem that needs to be solved by analyzing the problem critically Determining and defining the research questions Selecting the cases and determining data gathering and analysis techniques, Preparing to collect the data, Collecting the data in the field, Evaluating and analyzing the data.

The main aim of this study is to investigate how universal design and the Lamu culture can be incorporated in the design of the interior and exterior spaces to ensure that the consumer in the The Big Villa Lounge have a comfortable, accessible and conducive environment that will improve their quality of life.

### **3.3 POPULATION AND SAMPLE.**

The researcher used random sampling in this research. The main population for this research were waiters, consumers, Lounge staff which includes the cooks, the supportive staff I.e the genitors.

The staff were part of the sample as they are the people who interact with the space on a daily basis.

### **3.4 DATA COLLECTION.**

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes. Data Collection is an important aspect of any type of research study. Inaccurate data collection can impact the results of a study and ultimately lead to invalid results.

Data collection methods i will use will include:

**Interviews**

**Photography**

**Participant observation**

**Documents and audio visual materials**

#### **3.4.1 INTERVIEWS**

In interviews information is obtained through inquiry and recorded by enumerators. Structured interviews are performed by using survey forms, whereas open interviews are notes taken while talking with respondents. The interviews with the staff of the Lounge and consumers and proved very useful and informative. Focus groups are small (3-5 individuals) and composed of representative members of a group whose beliefs, practices or opinions are sought. By asking initial questions and structuring the subsequent discussion, the facilitator/interviewer was able to obtain information on the current state of the Lounge, what they think the problem is and how they propose to solve such problems.

#### **3.4.2 PHOTOGRAPHY**

The researcher took photographs of the site as a way of collecting data, analyzed them and reported his findings. The photography constituted the interiors, exhibition and display, landscaping and furniture of the The Big Villa Lounge. Photography was used to

capture the different rooms and spaces at the Lounge so as to present a real visual illustration of the data.

### **3.4.3 PARTICIPANT OBSERVATION**

In order to gather information on the The Big Villa Lounge, the researcher was required to engage in meaningful interaction and dialogue with subjects under investigation. This implied that the researcher had to enter into the spirit of the subjects being investigated and their daily rhythm of life. This participation enabled the researcher to closely observe the phenomena he was investigating.

### **3.4.4 DOCUMENTS AND AUDIO VIUAL MATERIAL**

The researcher was able to read and analyze already existing data on the subject matter. The researcher gathered information from journals, the internet and research papers written by colleagues who investigated on the same.

### **3.5 DATA ANALYSIS METHODS**

The researcher was to do a data analysis based on the information obtained from the field including the analysis of the photographs that expressed the situation as it currently is and the information gathered from interviews . The researcher was also to make both existing and proposed drawings of the site and make a finalized research report on a print out.

### **3.6 DATA PRESENTATION METHOD**

Most of the data was to be presented in narrative, describing the opportunities and barriers to use of Lamu culture and universal design in the interior and exterior spaces.

- **Photography:** Photographs were to be presented complemented by descriptions to explain the circumstances and their relevance to the research. There are several aspects of that can be incorporated to reach the goal of this research.
- **Tables:** Data that will be collected from interviews will be presented in tables and charts form. The tabulated data will be complemented with narrations to explain their relevance to the research.

### **3.7 LIMITATIONS**

The researcher found a lot of challenges while conducting the research since most of the staff members that are responsible for the daily run of the site, normally have a very busy schedule and are not found on site.

The research encountered difficulty in procuring the site plans and a daily inventory of the number of people who come and leave the site. This is due to the rules and regulations of the management because of the rampant insecurities that have occurred lately in the country of terrorism they were very reluctant on giving.

Some of the people who use the site are hard to come across since most of them have two jobs and cannot be easily available for questioning and interviews.

## CHAPTER 4

### 4.0 SITE ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS

#### 4.1 INTRODUCTION

The Big villa lounge is a lounge with a lot of potential if well designed. In this chapter the research analyses the various components of the lounge and the overall presentation of the lounge. It then goes ahead to elaborate on the findings from the research conducted.

#### 4.2 QUALITATIVE ANALYSIS

In this chapter the researcher will focus on information regarding the site profile such as the history, location and social and geographical factors affecting the site. In addition, a detailed description of the interior and exterior spaces, furniture, exhibition and the landscape at the site in that order will be provided.

##### 4.2.1 Historical background

The Big Villa lounge was started back in 2012 as just a small bar for the common citizen targeting the low income person, where they sold some cheap liquor until 2018 when it was bought by an investor and he transformed it to where it is today. It was re-branded from being called headquarter to The Big villa lounge and also revamped to look the way it looks like today.

#### 4.3 QUALITATIVE ANALYSIS

##### 4.3.1 Geographical location

The Big villa lounge is located in Kiambu town just opposite the main Coca Cola depot distributor and sits on a half an acre piece of land in the outskirts of the main town.

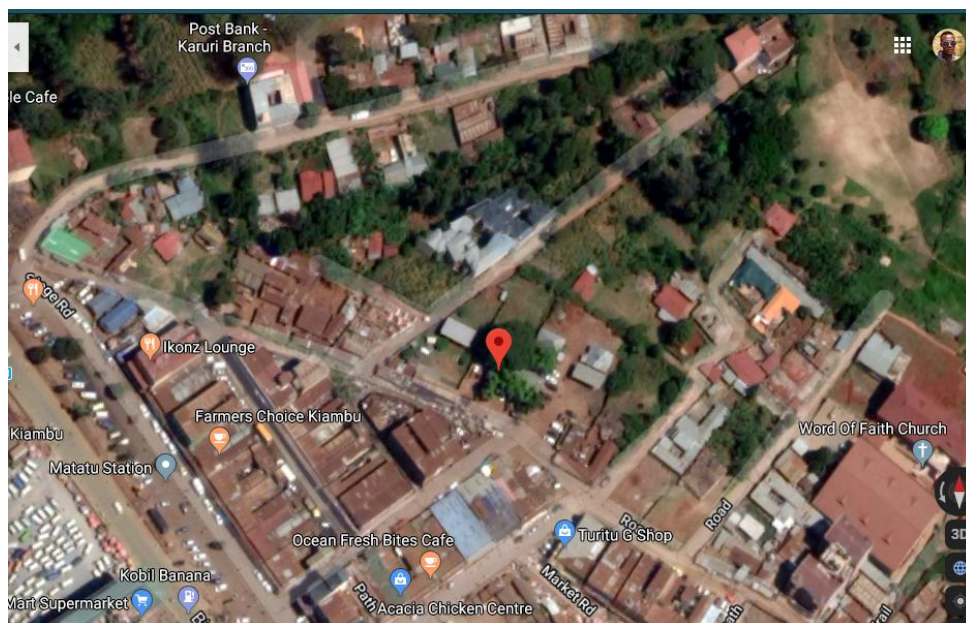


Figure 4.1

Source ;(<https://www.google.com/maps/place/1%C2%B010'02.3%22S+36%C2%B049'37.2%22E>) 2020

### 4.3.2 Typography

The Big Villa lounge is placed on a fairly flat place but the end is slightly slunt.

### 4.3.3 Climate condition

The Kiambu lies on 1679m above sea level The climate in Kiambu is warm and temperate. The is a great deal of rainfall in Kiambu, even in the driest month. This climate is considered to be Cfb according to the Köppen-Geiger climate classification.

The temperature here averages 18.8 °C. In a year, the rainfall is 962 mm.

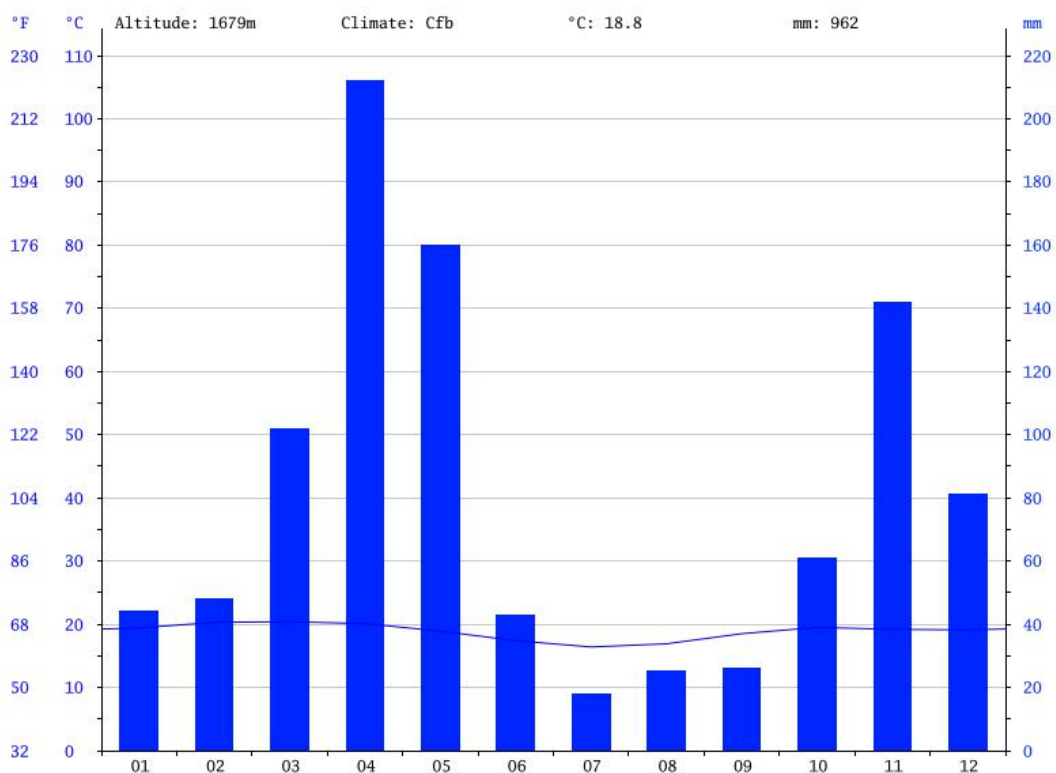


Figure 4.2

Source; ([en.climate-data.org](http://en.climate-data.org)) 2020

### 4.3.4 TEMPERATURE

The warmest season is in March , with an average daily high temperature above 20.4 degree's Celsius as shown in the figure below.

The lowest temperature is experienced in July as also shown in the figure below and it last's up until august.

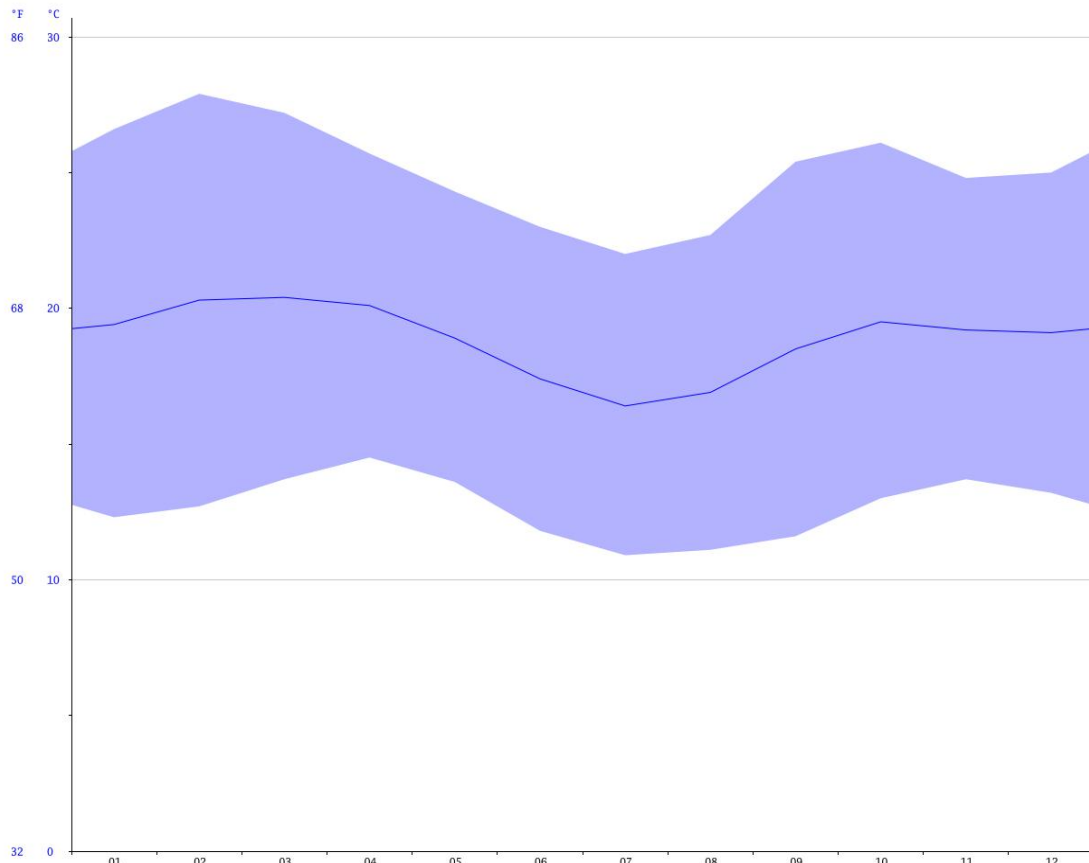


Figure 4.3

Source ;([en.climate-data.org](https://en.climate-data.org) ) 2020

## KIAMBU WEATHER BY MONTH // WEATHER AVERAGES

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	19.4	20.3	20.4	20.1	18.9	17.4	16.4	16.9	18.5	19.5	19.2	19.1
Min. Temperature (°C)	12.3	12.7	13.7	14.5	13.6	11.8	10.9	11.1	11.6	13	13.7	13.2
Max. Temperature (°C)	26.6	27.9	27.2	25.7	24.3	23	22	22.7	25.4	26.1	24.8	25
Avg. Temperature (°F)	66.9	68.5	68.7	68.2	66.0	63.3	61.5	62.4	65.3	67.1	66.6	66.4
Min. Temperature (°F)	54.1	54.9	56.7	58.1	56.5	53.2	51.6	52.0	52.9	55.4	56.7	55.8
Max. Temperature (°F)	79.9	82.2	81.0	78.3	75.7	73.4	71.6	72.9	77.7	79.0	76.6	77.0
Precipitation / Rainfall (mm)	44	48	102	212	160	43	18	25	26	61	142	81

There is a difference of 194 mm of precipitation between the driest and wettest months. The variation in temperatures throughout the year is 4.0 °C.

Figure 4.4

Source ;([en.climate-data.org](https://en.climate-data.org) )

#### **4.3.5 Access and circulation**

Access to the premises is through two roads adjacent to each other from the main road one directly opposite to the lounge and the other one connects the place from the south. The place is just opposite to Coca Cola distributors in Kiambu.

#### **4.3.6 Soil**

The most of the parts in the area have volcanic red soil.

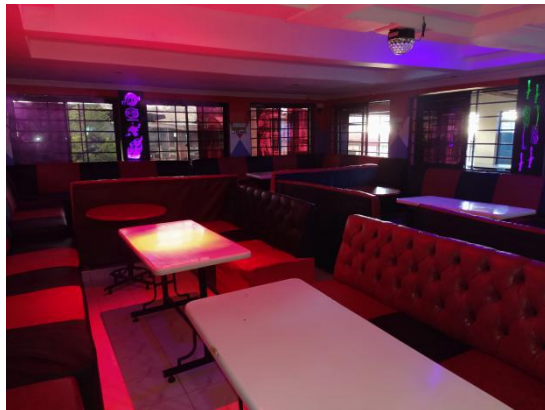
#### **4.3.7 Parking**

The parking is not that organized as there are no markings showing space allocated to a particular size of car. The parking is made of muram road.

### **4.4 ANALYSIS AND EVALUATION**

After an investigative research the researcher can clearly say that The Big Villa Lounge has not adequately applied Universal design principles in order to create an accessible, comfortable and a healthy environment for persons who are physically challenged. The key problem areas of investigation were landscaping, interior architecture, furniture design and exhibition and display.

#### **4.4.1 INTERIOR ARCHITECTURE**



**Figure 4.5**



**Figure 4.6**





**Figure 4.7**



**Figure 4.9**

**SOURCE OF IMAGES; AUTHOR(2020)**

In the above figures 4.5,4.6,4.7 and 4.8 respectively shows the interior of the lounge as it is as per what the researcher found at that particular time .The interior of the lounge is not that badly off as it's attracting in it's own way but the main issue here is the place is way too congested for even people to walk past each other to a point where by only one person can pass at a time. The place also is quite dark even during the day that can be hazardous as one can not easily see. The sofa's sets are randomly set in the room with no set of formation which led to the lack of space in between.

**4.4.2 EXIHIBITION AND DISPLAY**



**Figure 4.10**



**figure 4,11**

**SOURCE OF IMAGES; AUTHOR(2020)**

The exhibition and display of the lounge is the counter bar, where the bar is made of mdf board but the finishing is not that good as the edges have started to wear off. It's also surrounded by metal bar stool chair with a leather cover for the seating area. There is a chandelier light with another small one besides it to illuminate the alcohol that is on display but its not that bright as there are some places that are dark and it's not aesthetically appealing to the eye as shown in figures 4.10 and 4.11 above.

### 4.4.3LANDSCAPE

To start with, the place has no permanent entrance to the lounge like an open field. The landscape is not well kept as the place has no barriers to guide the consumers on where they can park their cars. It's mostly covered with muram for most parts of the landscape. There are also trees in the area that provide shade to the place. There are two big structures at the side of the lounge. One of the structures is used to store cooking things like charcoal and wood. The other structure is not fully build but it is said to be a the extension of the main kitchen. At the back of the landscape the place is bare and sometimes it is used as a place where cars can get fixed or garage and its boarded by a car wash at the back of the right side.



Figure 4.12



Figure 4.13



Figure 4,14



Figure 4.15



**Figure 4.16**



**Figure 4.17**

**SOURCE OF IMAGES;AUTHOR (2020)**

#### **4.4.4 FURNITURE**

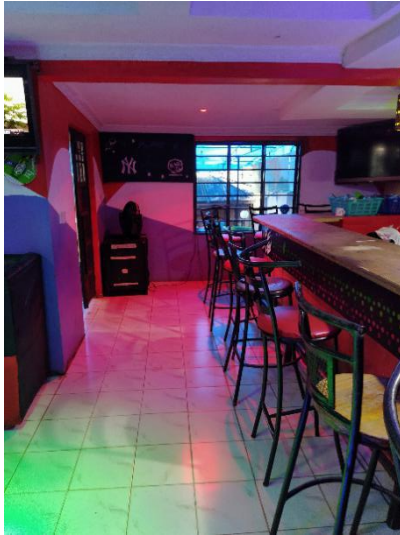
The furniture at the lounge varies from the lounge on the inside and on the outside, the furniture inside the lounge comprises of sofa sets adjustable tables that have been made from soft wood and a leather finish and look more polished. There are also bar stools made from metal and leather cover on the seating area. On the outside the seats there are made from residue wood then given a leather finish but there are also round tables with a set of four chairs for small crowds.As seen below in figures 4.18 to 4.22 is a presentation of the various furniture that are present in the premises both indoor and outdoor furniture.



**Figure 4.18**



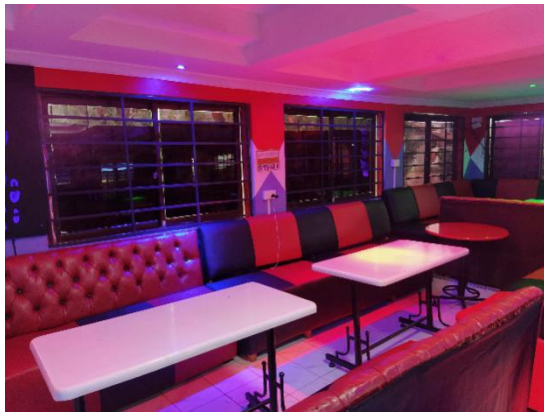
**Figure 4.19**



**Figure 4.20**



**Figure 4.21**



**Figure 4.22**

**SOURCE OF IMAGES;AUTHOR(2020)**

#### **4.4.5 LIGHTING**

The lighting in the lounge is not well placed as some places in the lounge are dark even with the lights on. More lighting is required as the place even during the day its quite dark which is not good for business. The consumers need to see what they are drinking and also to see their way in and out. In figures 4.23 and 4.24 below shows placement of lights in some parts of the lounge.



Figure 4.23

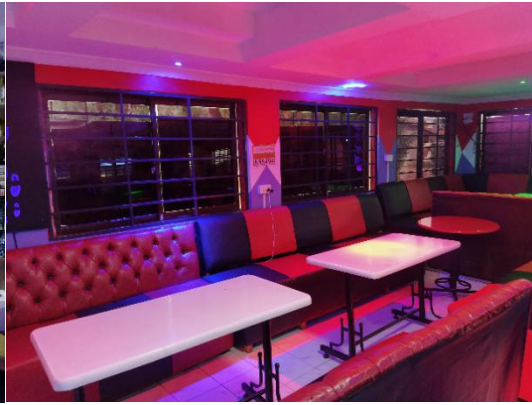


Figure 4.24

**SOURCE OF IMAGES; AUTHOR(2020)**

#### **4.4.6 FLOOR**

The floor is made up of ceramic tiles and marble flooring which is not recommended for persons with physical disabilities as it can be slippery and can cause more damage. They cover the corridors of the lounge and the whole interior of the lounge ,as shown in figures 4.25 and 4.26 below.



Figure 4.25

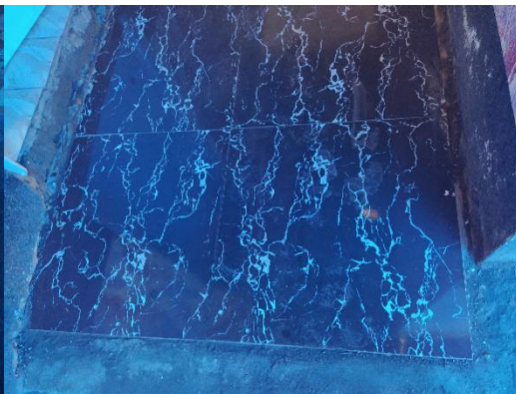


Figure 4.26

**SOURCE OF IMAGES;AUTHOR (2020)**

#### **4.4.7 FACILITIES**

Some of the facilities like the washroom are clean but not spacious enough for a person using a wheelchair or with any physical disability to access the facility. There is also a place where one can engage with fast foods like ‘chemsha’boiled meat as they call it ,

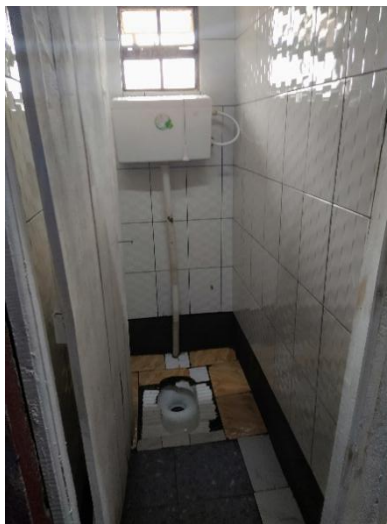
roasted meat and chips as one enjoys their drinks. The parking space is not accurately partitioned but it is quite spacious for such a place and where it is situated. It can be seen in figures 4.27 to 4.30 below.



**Figure 4.27**



**Figure 4.28**



**Figure 4.29**



**Figure 4.30**

**SOURCE OF IMAGES;AUTHOR (2020)**

#### **4.5 PRESENTATION OF FINDING**

From the data collected, the researcher found out that The big Villa Lounge has a total of 8 waiters who fortunately or UN-fortunately are all ladies. They receive 20 -50 clients on a single day and 150-200 when the place is fully parked which makes them tend to hire more waiters on a temporally basis that when the club is full the waiters will be overworked reducing the the quality of service in the lounge.

Table 1

Data is presented in the table below

	Male	Female	Total
waiters	0	8	8
cook	2	1	3
Bar attender	0	1	1
supporting staff	1	1	2
Total	3	11	14

Table 2

<b>Description</b>	<b>Male</b>	<b>Female</b>
<b>Cement Screed flooring</b>	1	0
<b>PVC tiles</b>	4	5
<b>Terrazzo flooring</b>	2	4
<b>Marble Flooring</b>	2	3
<b>Timber parquet</b>	5	6
<b>No flooring</b>	0	0
<b>Number of respondents</b>	14	18

As seen in the data above most male and female respondents prefer timber parquet which I would also recommend as a designer, as it is favourable for persons with physical disability.

Some of the respondents who responded by agreeing with the current floor type Thought that the floor finish was the most economical,durable,easy to maintain,and wear resistant considering the high rate of human traffic that used the floors every

day. Those who said they did not like the current finish thought that the floor finish was unattractive and brought down the overall look of the lounge.

#### **4.5.1 INTERIOR ARCHITECTURE**

Most of the customers interviewed agreed that the interior design and decoration was not good. They said that it does not display any characteristics of a modern lounge and that the conditions of the lounge must be improved. Most of them had complains with the furniture, spacing and the lighting of the place. According to most of them, there is a continued redundancy in the use plain cream paint in the interior walls. They thought that the wall should more appealing and maybe paintings portraying Lamu cultural can be put up according to my perspective.

#### **4.5.2 WASHROOM**

The washroom is not well ventilated considering it's quite small for that kind of a lounge. Considering general universal design guidelines that are supposed to guide any form of design the washroom lacks a handicapped toilet hence is inaccessible by wheelchair as the spaces are so limited starting from the entrance to the washroom which is very congested. The sinks are quite high and in-adjustable, the floor is made of marble tiles, too slippery for wheelchairs movement. In addition to that the washroom has one sink which is very inadequate for all users and lack hooks for hanging personal belongings while using the toilets. The toilets also lack tissue dispensers.

#### **4.5.3 LANDSCAPE**

The researcher found out from the interviews with the clients and the workers that they thought the landscaping should be improved and that it was dull and it's neglected in a way. The fence in the premises is also quite worn especially the iron sheets that surround the area needs to be rebuild a fresh with more durable materials like concrete. There is poor signage which is an important factor for land marking the location of the lounge. It should also incorporate the ramps for easy movement of persons with wheelchair.

#### **4.5.4 LIMITATIONS**

1. A bit of reluctance too was experienced from the interviewees
2. Another limitation is that some participants did not understand the importance of the study and their participation was not fully accurate.



#### **4.5.6 CONCLUSION**

From the findings the researcher discovered that certain aspects of the lounge buildings and its interiors hinder flexible interaction of people with the physical or built environments. This aspects are barriers which are mostly put in place by architects who when designing a building do not anticipate the needs of certain people, like those with wheelchairs or crutches, the elderly and the children but rather assume that it's the able bodied individuals who are in need to use the buildings. Interiors designers also contribute to this problem when they design furniture that are not flexible in use or when they select flooring materials are that not tolerance for error.

## **CHAPTER 5**

### **5.0 SUMMARY AND RECOMENDATIONS**

#### **5.1 INTRODUCTION**

The chapter will aim to discuss and make a summary the findings presented in the previous chapter. Thereafter, based on the research questions and analysis of the information collected earlier, the researcher will seek to make conclusions and suggest appropriate recommendations pertaining to the universal design philosophy and Swahili patterns (Lamu culture) discussed in the literature review section. The need for improving the image of The Big Villa Lounge and has been expressed by the management. They expect a design that meets the current requirements and future requirements. This chapter sets out to conclude and make recommendations for the study site through the data collect through interviews, questionnaires and observations.

#### **5.2 SUMMARY**

This study attempted to provide factual text and shed some light on problems faced at study site. With the guidance of the study objectives document in chapter two, this study was aimed at investigating different ways in which Universal Design principles and swahili pattern (Lamu culture) in can be applied in the interiors, furniture, landscape and exhibitions & display of study side, in addition to improve the design quality of the two spaces and the landscape through universal design.

Universal design has been defined as the design of products and environment to be usable by all people to the greatest extent possible without the need for adaption or specialized design. To integrate this philosophy into products and environments designer follow seven principles which include; Equitable Use, Flexibility in Use, Simple and Intuitive Use, Perceptible Information, Tolerance for Error, Low Physical Effort, Size and Space for Approach and Use. The study site exhibited certain problems such as lack of enough circulation or manoeuvring space, lack of flexibility in use of furniture, flooring material inhibiting easy movement and door size and design inhibiting accessibility.

### **5.3 CONCLUSION**

Each of us is unique in age, size, abilities, talents, and preferences. Any human characteristic that can be measured spans a broad range in any population. An understanding of human diversity is critical to designing effectively. Successful application of universal design principles requires an understanding of how abilities vary with age, disability, the environment, or the circumstances. Designers need to take up this responsibility in creating or design environments or product that can are use able to all people more particularly public environments. Assumptions should not be taken that only able persons use public spaces or products.

### **5.4 RECOMENDATIONS**

The following solutions were therefore recommended by the researcher for implementation with regards to rectification of some of the issues revealed in the exterior and interior design of spaces at The Big Villa Lounge, majorly pertaining to universal design.

### **5.5 INTERIOR ARCHITECTURE**

Interior architecture encompasses wall, floor, lighting and ceiling treatments as well as doors and windows and any other opening confined within an indoor space. These four areas under interior architecture will be discussed below giving various sustainable and appropriate recommendations.

#### **5.5.1 WALLS**

The existing walls of the lounge are painted in plain cream lead oxide kerosene based paints. The lead oxide kerosene-based paints have a high volatile organic compounds (VOC) which is hazardous to human health and the environment which can have an alternative of the silk vinly water painting that are environmentally friendly and not harmful to human health. The design theme Lamu culture from the swahili will be portrayed through the interior decor. The decor should always tend to drift to the nature, as African contemporary interior design is inspired by nature. The Lamu culture colour palette and patterns should be used. Bold colours can be for accent and focal walls. Artifacts and paintings that complement the theme should be used.



Figure 5.1 source



Figure 5.2 source

## 5.6 FLOORING

### 5.6.1 RUBBER

Rubber flooring made from recycled tires is usually found at the local gym or on the neighborhood playground. It is slowly finding its way into our spaces example like the living room, kitchen and bathrooms as a versatile, beautiful and lasting option. It is great to walk on and water resistant which can be very good for the lounge and suitable for all types of people as it enhances grip. It also comes in many color and pattern options.



Figure 5.3 source;( [www.freshhome.com](http://www.freshhome.com) )

### 5.6.2 CORK

Cork is relatively new to the flooring world. Cork is harvested from the bark of the cork oak tree commonly found in the forests of the Mediterranean. The trees are not cut down to harvest the bark, which will grow back every three years, making it an ideal renewable source. It has anti-microbial properties that reduce allergens in the home, is fire retardant, easy to maintain and acts as a natural insect repellent too. Cork, like wood can be finished in a variety of paints and stains to suit any color scheme or design style. Its durability allows for uses in any part of the house. Cork floors, depending on the quality, can last between 10-30 years.



Figure 5.4 cork flooring (source: [www.freshhome.com](http://www.freshhome.com), 2020)

## 5.7 CEILING

### 5.7.1 GYPSUM

Gypsum board is the general name for panels that consists of a non combustible core, composed primarily of gypsum powder compressed between two hard papers on the face, back and along the edges. Its often called drywall, wallboard, or plasterboard. It differs from other panel-type building products such as plywood , hardboard and fiberboard.

Gypsum ceiling is achieved by carefully suspending gypsum boards on galvanized steel or wood then crafted and combined with different types of accessories such as crown moldings paint/decorative paints, lights, speakers e.t.c



Figure 5.5(Source; [1.5design.com](http://1.5design.com), 2020)



Figure 5.6(Source; [stonecontact.com](http://stonecontact.com),2020)

## **5.8 LIGHTING**

### **5.8.1 Energy Efficient Light Bulbs**

The sustainable building industry is primarily focused on energy efficient lighting solutions. Standard light bulbs, known as incandescent bulbs, are known to be highly inefficient. Electricity is passed through a metal (tungsten) filament that heats to over 2000° Celsius and glows to give off light. Only 10% of the electrical energy is converted to light; 90% is wasted as heat. Halogen bulbs are similar but instead have a small pocket of halogen gas that reacts with tungsten to produce light. They burn brighter, use less electricity and last twice as long as a standard bulb, but are still inefficient compared with other forms of bulbs.

Energy efficient light bulbs use significantly less energy than incandescent bulbs, and also last longer. There are two main kinds: Compact Fluorescent Lights and Light Emitting Diodes.

#### **5.8.1.1 Light Emitting Diodes (LED)**

LEDs are small, solid light bulbs that are lit by the movement of electrons in a solid semi-conductor material as electricity is passed through it. This is also called 'solid state

lighting', because it uses a solid material, as opposed to gas (CFL) or filament (incandescent). LEDs are extremely energy efficient, lasting over 100 times longer than incandescent bulbs, and up to 10 times longer than CFLs. They have low heat generation, low power requirements, and are highly durable because there is no filament or tube to break.

LED is a relatively new technology, and currently the bulbs are most suitable for track and recessed lighting, where a pointed light is required rather than radiated light. They are more expensive than CFLs, but energy savings over their lifetime means their cost is soon recouped. Because their power inputs are minimal, LEDs are readily combined with solar panels to provide reliable, energy efficient lighting day and night.



Figure 5.7(Source;[pinterest.com](https://www.pinterest.com),2020)

## 5.9 EXHIBITION AND DISPLAY RECOMMENDATION

It will involve the counter and the bar stand as seen in the lounge. The bar has drawn inspiration from a leaf vein network which offers different types of shapes and sizes for the stand. It can be made MDF board which is more readily available in the market and also very pocket friendly.





Figure 5.8 source

## 5.10 LANDSCAPE RECOMENDATION

### 5.10.1 Soft landscape

The entire Lounge landscape is mostly covered by bare gravel and concrete floor as seen in chapter four, the school has not implemented the use of soft landscape such as flowers grass, ground covers or even shrubs. It is agreeable that vegetation plays a significant role in the overall aesthetics of a landscape of exterior spaces.

Below are the recommended flowers, shrubs and ground covers

#### 5.10.1.1 Plants and Shrubs

**Boxwood:** Boxwood is the most versatile shrub, it grows almost everywhere in all the continents. The most adaptable and easy to grow shrub, boxwood is landscapers' favorite and without a doubt one of the best shrubs for the containers.



Figure 5.9 boxwood shrub (source: [Pinterest](#), 2020)

**Rosemary:** Mild temperate climate. Rosemary is a highly aromatic perennial shrub, a useful culinary herb. Its beautiful blue colored flowers and silvery green foliage also makes it an ornamental plant.



Figure 5.10 rosemary potted plan (source: [balconeygardenweb.com](#) 2020)

## 5.10.2 HARD LANDSCAPE MATERIALS

**5.10.2.1 Concrete:** Concrete is the most preferred material because it's affordable, easy to install and maintain. You can easily apply different colors, patterns and textures to match the theme of your project. On the other hand, there are other types of concrete paving materials that you can use. These are already pre-casted, meaning these were already designed in a variety of shapes, sizes, colors, patterns and textures. This is a better option for those who want something more than just the plain style of casted concrete as shown below.



Figure 5.11 source( ;[m.indiamart.com/proddetail/paving-stone](https://m.indiamart.com/proddetail/paving-stone) 2020)

**5.10.2.2 Limestone:** Reflecting heat is one of the good characteristics of limestone. We recommend using limestone for those areas with hot climates. It's white to off-white color is perfect for warm climate conditions, as it can reflect heat instead. It's best to use limestone for shaded areas in your patio; it can lighten up the area with its natural color.



Figure 5.12 limestone ([gardenfurnitureland.com](http://gardenfurnitureland.com), 2020)

### 5.11 FURNITURE RECOMMENDATION

Lounge Customers vary widely in their anthropometric measurements, chair and tables do not fit all people . And as such the researcher recommends two adjustable devices that is a chair and desk, are designed using a spring and screw structure to provide for adjustments to cover a wide range of users. For the separated-type design, the adjustable dimensions are seat and table surface heights. For the combined-type design, the dynamic dimensions that can be adjusted include desk height and sitting height, and the distance from chair to table.



Figure 5.13



Figure 5.14

**SOURCE OF IMAGES;AUTHOR (2020)**

## **5.12 CONCLUSION**

Before embarking on this journey, the researcher knew little about universal design principles, and lamu culture. The researcher has learnt the importance of an equal and accessible environment for all especially in engagement in spaces like bars and lounges etc. Universal design is gaining popularity in the country especially with the increase in awareness and basic human rights. However, the researcher noted with concern the struggles that people with mobility disabilities undergo in interacting with entertainment spaces is rather unfortunate. Universal design principles have not been considered or applied in the architectural design of most entertainment joints making the environment not equitable for all users regardless of their abilities/disabilities. The driving force behind the researcher was creating an environment suitable for all.

Design is a problem solving activity where problems like the use of spaces concerning the interior spaces of any environment are put into consideration when solving the problem. The researcher has identified the problem areas and has proposed solutions and recommendations to remedy the current situation.

The researcher hopes that this research has shed light on the plight of the mobility disabled persons and ways in which universal design principles can be applied to improve the interior and exterior spaces in a lounge to create a better environment.

## **5.13 SUGGETION FOR FURTHER STUDIES**

In depth research on the application of universal design in public spaces more in entertainment joints, and also indepth insight of the Lamu culture .

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