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Kente cloth patterns in the creation of aesthetically appealing and sustainable spaces at the AIC youth center.

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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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i. Declaration.

I, Kutwa Christine, hereby declare that this is my original work and has not been presented for a degree in any other university.

Signature of Candidate.....

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DECLARATION OF SUPERVISOR

This project has been submitted for examination with my approval.

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ii. Acknowledgement.

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iii. Abstract

This paper is about creating unique pattern designs inspired by a Ghanaian fabric called the Kente cloth. The patterns are designed with inspiration from Ghanaian traditions like cultural elements, nature and symbols. The idea is to manipulate the different pattern designs in the creation of furniture and exhibition and display units as well as incorporating the patterns in the redesigning of sustainable exterior and interior spaces of a youth center. The thesis will consist of the following stages; theory, design research, discussion and final product samples. Before the design process, theoretical knowledge of textile design will be gained, pattern categorizations, fabric patterns inspirational sources, elements and principals of design will be considered. The next step will be an experimental design process to design several pattern samples. In the end several of the patterns will be selected for further research.

A qualitative research will be carried out to investigate the different needs of young adults, this will be done through observation, interviews and questionnaires. By the help of the supervisor, the researcher will be assisted in selecting the patterns that stood out the most from the Kente fabric which will be consequently used in the creation of different designs. The outcome of the project will be a range of design items for both the outdoor and indoor spaces which draw their inspiration from the selected pattern.

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CHAPTER 1: INTRODUCTION OF THE STUDY

1.1 Background of the study

The African Inland Church Youth Center is an establishment located at Garden Estate along Thika road, Nairobi Kenya. The center is a Christian Community Center founded nearly 5 years ago by the African Inland Church as an alternative youth hangout center for young adults. The young adults who use this establishment are aged between 18 and 25 years, most of them are students from different universities who come together with their different facilitators who host the different workshops and activities. As a community the goal of the leaders is to engage the young people, they hope to send the message that they are a part of the community and consequently ingrain values of stewardship, ownership, respect and a great sense of pride in themselves and in the different African communities they come from, since as they are the future community builders.

Over the years not much has been done to improve its aesthetic appearance, the furniture is portable but outdated, there is sufficient movable storage equipment which presents the problem of clutter and reduces access to specific areas of the room. The space has become seemingly small due to the large number of youths who hold different workshops there monthly. The center has given the radical youths a sense of belonging over time. The Journey community as they call themselves seeks revolutionize the society by rising above their limitations and impacting the society in whatever small way they can.

This project intends to look at the problems associated with sustainability design and attempts to provide solutions by taking a product from the African culture and attempting

to understand its significance and history in that culture. This in a way avoids shallow appropriation yet still creates a product that is appealing both locally and globally in terms of its residual 'Africanness'. The idea for this study is to improve the aesthetic appearance of the Youth Center through the infusion of unique design patterns that draw their inspiration from the Kente Fabric in the creation of sustainable spaces for young adults at the youth center, as well as in the creation of a range of furniture products that would take up less space and are more efficient to use.

1.2 Statement of the problem

African Patterns have not been utilized in the creation of aesthetically appealing and sustainable spaces for Kenyan young adults

1.3 Objectives

The main objective of this study is to investigate the use of patterns in the creation of aesthetically appealing and sustainable interior spaces.

1.4 Specific Objectives

- To determine how textile fabric patterns can be utilized in interior design.
- To establish the different categorizations of patterns and their effects to visual stimuli.
- To find out the psychological effects of patterns and color to human health
- To explore the relationship between pattern and color and how they can be effectively used.
- To propose new ways of incorporating African textile patterns in interior design.
- To determine how manipulation of patterns can create sustainable interior spaces.
- To find out how design can create a social impact in the society.

1.5 Research Question

In what ways can patterns and color be effectively used in interior spaces to improve human health?

In what ways will the manipulation of patterns create sustainable interior spaces?

How can African patterns be incorporated in the design of accessible, livable and comfortable spaces?

What is the role of patterns and color in the stimulation of behavioral change among young adults?

How will the incorporation of African patterns in interior design be relevant to the Kenyan urban youth?

1.6 Significance

The purpose of this paper is to create a variety of unique pattern designs inspired by the African print. The subject was chosen due to several reasons. First, a plan to learn the process of pattern designing and creating unique patterns for design products. Second, a good chance to learn more about textile and pattern design since in my major only interior spaces, exhibition and display, furniture, landscaping design has been subjects of instruction. Third, a good opportunity to apply my knowledge in design from theory to practice in the same project. Fourth, an opportunity to improve the aesthetic appearance of the AIC Youth center and lastly an opportunity to explore and apply sustainable design. This research aims at investigating the sustainable materials that can be incorporated in the modernization of AIC youth center's interior architecture, exhibition

and display, furniture design and landscaping in the quest to create a sustainable interior design.

1.7 Limitations of the Study

The research is limited to information that deals with patterns, color and sustainable materials as applied in the interior design. Financial constraints and time factor limits the researcher's ability to carry out a comprehensive study.

1.8 Scope of the study

1.8.1 Concept

The study will put more emphasis on the incorporation of sustainable materials in the modernization of AIC youth center with special areas of concern being Exhibition and display, Furniture design, Landscaping and human development and Interior architecture.

1.8.2 Content

The study will mainly focus on primary data sources and secondary data sources and all ideas and information acquired will be incorporated in the interior design of AIC youth center, Garden estate. The designs and materials are influenced by the Kente cloth's patterns and colors.

1.8.3 Geographical

The research will be based in Nairobi, Kenya with AIC youth center at Garden Estate being the case study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This Literature discusses the functionality of patterns in the creation of sustainable spaces for young people and the relevance of African culture to the African youth in this digital era. The target population for this study are young adults aged between 18 and 25. This age group is immensely influenced by the internet, other Medias have also been adopted and integrated into the daily lives of an increasing number of young adolescents. African cultural values have come into strong confrontation by values communicated through western lifestyles, teenagers and young adults are the most affected. This phenomenon may help explain why the youth in Kenya are so much preoccupied with transforming themselves into ‘images of Americans’. Because of media exposure, the youth are losing control and interest in their own cultural practices and are now cultivating western cultural values. This has consequently affected their sense of identity. These young adults are the future of a nation, if they lose touch with being African nothing is left to cater for the needs of the future generation.

Building a true community takes the establishment of trust, respect, and common purpose among groups and individuals of different races, ethnicities, cultures, and backgrounds. One element of accomplishing this goal is the creation of spaces where people can come together and mix naturally, getting to know one another, or at least getting used to one another’s presence and style. Such good community gathering places are places where people want to be, and are physically set up to encourage conversation and interaction. They provide reasons to go there and reasons to stay, feel safe and comfortable, and are accessible and welcoming to everyone. It’s to the benefit of any

community or neighborhood to have as many of these natural gathering places as possible, since they allow not only for interaction, but for entertainment, cross-cultural learning and the establishment of inter-group harmony, and the building of neighborhood and community pride.

Controversies about whether technology shapes values, attitudes, and patterns of social behavior are not new. The technological deterministic view presents the internet as an innovative force that has profound influence on children and youth, technology generates new patterns of expression, communication, and motivation. In this view, various terms have been used to describe this generation of youth, including “Net-generation,” the “millennium generation,” and “digital natives.” These labels attempt to identify a large group of young adolescents who grew up during the expansion of the internet and from early childhood have been immersed in a media rich environment, using computers, playing online games, constantly communicating and connecting with their friends by electronic devices. These youth create and use digital spaces for social interaction, identity expression, and media production and consumption (Gustavo S. Mesch 2009).

Simply put, the argument is that the internet has created a new generation of young people who possess sophisticated knowledge and skills with information technologies, express values that support learning by experience and the creation of a culture in a digital space, and have particular learning and social preferences (Gustavo S. Mesch 2009). Africa is a vibrant, youth orientated continent, with the highest concentration of young people across the globe. With the youth population in Africa set to rise faster than any other continent over the next decade, this ‘A Generation’ is one to watch as the next

wave of youth pioneers tap into the country's rich cultural heritage and make their collective voice, and spending power, known. With arguably the strongest and most passionate musical culture on the planet, brands looking for a foothold with Africa's youth who are now tapping into the creative passion and freedom of this rising generation (Giles Fitzgerald 2013).

As the world embraces the African culture in its designs, Africa is gradually becoming more popular among the young generation. The fusion of traditional techniques with modern materials produces products that are simple, minimalistic designs purposely removed from most obvious cultural references. Others are based on designers' observations about how objects are used in daily life, for example, how people gather to eat a meal, or how furnishings serve many purposes at once. While these designs draw on African materials and cultural practices, as well as the ideas of many African and Western artists working in Africa today, they are not traditional in the sense of being a continuation of forms that could be associated with particular cultural styles. The approach of all these contemporary designers is very much of the moment they are exploring the potential of the African continent as a place where modern design is flourishing and adapting to the lifestyles of people today (Khalil, 2014).

African textiles are the major form of expression that Africans use to define themselves. They have used cloth not only for personal adornment but also as a powerful medium of communication for many centuries. Their importance has often been overshadowed by traditional sculpture and masks but in this day and age, we see how African textiles have become the most significant medium by which contemporary African artists are

illuminating the connections and continuities between past and recent modes of African artistic expression. African textiles are also a means for us to acquire insight into the social, religious, political and economic complexities of many African communities whose sophisticated cultures we may otherwise remain ignorant about.

2.2 Kente fabric

Ghanaian's use many different cloth fabrics for their traditional attire. The different ethnic groups have their own individual cloth. There are two main types of Kente cloth from two distinct traditions and production centres. The Ashanti Kente which is produced mainly in Bonwire in Ashanti Region, which occupies the central middle belt of Ghana and the Ewe Kente which is a product of a couple of locations such as Agortime-Kpetoe and Agbozume in the Volta Region of Ghana. The Ewes occupy the South Eastern portions of Ghana and also spread into Togo, Benin and South-Western Nigeria to a small extent.

Kente is a very important Ghanaian national costume and clothing, today, these cloths are used to make traditional and modern Ghanaian Kente attire. On an article cited on the ultimate history project website, Jessica Achberger claims Kente is not just any old cloth, it is more than a clothing item, it is a visual representation of history philosophy, ethics, oral literature religious beliefs and political thought. Different symbols and different colors mean different things. Kente is a ceremonial cloth hand-woven on a horizontal treadle loom and strips measuring about 4 inches wide are sewn together into larger pieces of cloths.



Figure 1: A variety of Kente Fabrics

Source: <http://csdt.rpi.edu/african/kente/patterns.html>

Originally, kente cloth was black and white, but dyes were developed from different plants and a range of colors evolved. Blue was obtained from the indigo plant, red from dried cam wood, brown from Indian tamarind, and green from boiled spinach leaves. With increased trade, imported silks and cottons were unraveled to extend the color range. Colors convey mood, dark shades being associated with grief and used for mourning ceremonies, while lighter shades are associated with happiness. The symbolic significance of kente is located in the motifs, the elephant signifies kingship while the scorpion bitterness. The colors of the Ghanaian national flag red, yellow, green and black are popular in modern cloths. Kente fabric has been chosen by the researcher for this study for its richness in color and variety of patterns. It should be noted that the

researcher's aim is to borrow and manipulate the patterns used in the African fabric and as such the pattern symbols and color may not represent the same meaning it represents for the Ghanaian people.

2.4.2 Patterns

Pattern comes from the French word *patron*, which means template. According to Airey patterns in nature show the presence of life, like the waves in the ocean, spirals, and snowflake crystals (Airey, 2011). "Pattern and repetition are an integral part of most textile designs..." (Wilson 2002, 42). Textile pattern designs have a huge variety under the influence of different cultures, periods, and art movements, but all patterns belong to specific categorizations due to their characteristics. According to Wilson, printed textiles and patterns can be categorized by their motifs, layout or direction. A print design is formed by these three principals associated with color combination technique (Wilson 2001, 112-114.).

A characteristic Asante kente has is the geometric shapes woven in bright colors along the entire length of the strip, while Ewe kente often incorporates pictorial symbols and displays a tweed effect by plying together different colored threads in many of the warps. Kente cloth is characterized by sharply defined shapes created by the technique of loom weaving. It is easier to weave geometric than organic shapes, so rectangles, diamonds, zigzags, and squares are predominant. Colors and tones interact along their straight edges, creating optical vibrations as the eye attempts to accommodate constantly changing visual stimuli. Although weavers do not consciously apply the scientific color theory established by the color wheel, they tend to work with abrupt contrasts of tone and hue.

According to Patricia Rodeman, it is no secret that patterns and combinations of patterns in interior design can produce a broad variety of physical, emotional, and psychological responses in those who view them from cheerfulness and a desire to get things done to agitation or lethargy. Few interior designers, however, have a strong grasp of how and why these responses are produced and which types of patterns are most likely to evoke a specific reaction. A variety of Kente patterns have been invented, each of which has a certain concept or concepts traditionally associated with it. There are about 50 types of Kente patterns with the most reputable and expensive of all the patterns in the Asanti culture being “Adwene asa” which is translated as my skills are exhausted. It is indeed the last word in the Kente cloths, one in which the strips join all the known designs.



Figure 2: More kente patterns

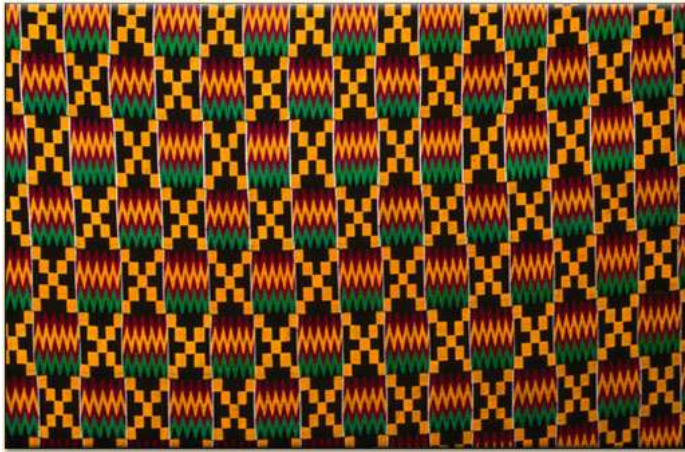
Source: Google images

2.4.3 Color

The aesthetic beauty of a kente cloth is affected by the color symbolism. Colors are chosen for both their symbolic effect and visual effect. A weaver’s choice of a color may also be influenced by his tradition or a matter of preference. Gender plays a key role in

the selection of colors as women prefer pink, purple, light yellow and light blue etc. while males cherish black, dark blue, dark yellow, orange, red and dark green.

Figure 3: Asante kente cloth



Source:

webexhibits.org

In the hand woven ceremonial cloth, the colors within the cloth create a dynamic sense of spatial movement. The orange-yellow

squares advance and as the lightest tone, the yellow shimmers against the dark blacks, while red and green zigzag shapes compete with one another. The predominance of angled shapes creates staccato rhythms, making the cloth suitable for use in ceremonies distinguished by repetitive drumbeats and vigorous dancing. A restful pattern would be completely misplaced in performances that build to dramatic crescendos. When worn by rulers, the brilliant cloths attract visual attention, sustaining the concept of authority. The yellow-gold within the cloth is invariably repeated in the gold regalia carried by the ruler.

Color triggers innate biological responses, heart rate increases, breathing quickens and involuntary perspiration begins. For instance, in empirical studies, researchers have found Red to increase emotional and motor responses more than greens and blues. A study of color and emotionality indicated that green elicits the strongest positive emotions of calm, peace and happiness but yellow-green associates with disgust and sickness. Some colors evoked both positive and negative emotional reactions red associated with

excitement, happiness, love and also anger. Color in relation to temperature elicits different psychological and physical responses. Darker paint colors physically absorb more light than lighter colors, slightly affecting the actual temperature of a room.

When planning interior spaces, it is important to understand the basic color principles so that color can be used to create form, rather than used only as a decoration. Using balanced proportions of the entire spectrum in a systematic order provides a natural harmony that many experts feel can promote health and well-being. When colors are chosen personally or randomly an uneasy, lifeless or even chaotic effect often results. (Marberry, 1995, 9). Color perceptions change according to lighting variations, spatial configuration of the interior primary tasks occurring in the space and differences among the people using the space. Color is affected by materials, textures and patterns in the interior environment. Its effects may attenuate or strengthen with the passage of time. (Marberry, 1995).

Individual and age differences in color acuity exist. However, color guidelines can improve environments where humans spend the majority of their time. For example, color helps create a residential atmosphere within an institutional and hospital setting. Environmental color specialists Frank Mahnke and Rudolf Mahnke argue that a predominantly white, brightly lit interior environment contributes to fatigue and psychological discomfort. In settings dominated by hard surfaces white does not enhance sensory variety. It is not difficult to identify human needs and problems related to color use in settings with tactile stimulation but posing effective alternative is (Portillo 2010).

2.4.4 Sustainable design

A green building, also known as a sustainable building, is a structure that is designed, built, renovated, operated, or reused in an ecological and resource-efficient manner. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity; using energy, water, and other resources more efficiently; and reducing the overall impact to the environment. Sustainable interior design creates interior spaces using design principles such as functionality, accessibility, and aesthetics and expands the focus to include environmental considerations.

The simplest widely used definition of sustainability is meeting the needs of today's population without diminishing the ability of future populations to meet their needs (Sorvig 2008). However, Jason F. Mclenan claims that Sustainable design is the philosophical basis of a growing movement of individuals or organizations that literally seeks to redefine how buildings are designed, built and operated to be more responsible to the environment and be more responsive to people. A healthy interior environment leads to greater tenant comfort and satisfaction and employee retention. In addition, the way occupants interact with their surroundings has an impact on mental and emotional welfare as well as efficient building operations. The main objectives of sustainable design are to reduce or completely avoid, depletion of critical resources like energy, water, and raw materials, prevent environmental degradation caused by facilities and infrastructure throughout their life cycle and create built environments that are livable, comfortable, safe, and productive. (WBDG sustainable committee, 2014)

Sustainable design seeks to reduce negative impacts on the environment, and the health and comfort of building occupants, thereby improving building performance. The basic objectives of sustainability are to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments. Sustainable design principles include the ability to: optimize site potential; minimize non-renewable energy consumption; use environmentally preferable products; protect and conserve water; enhance indoor environmental quality; and optimize operational and maintenance practices.

Recent studies reveal that buildings with good overall environmental quality can reduce the rate of respiratory disease, allergy, asthma, sick building symptoms, and enhance worker performance. The potential financial benefits of improving indoor environments exceed costs by a factor of 8 and 14 (Fisk and Rosenfeld, 1998). Choose construction materials and interior finish products with zero or low emissions to improve indoor air quality. Provide adequate ventilation and a high-efficiency, in-duct filtration system.

In interior design, sustainability also includes the planning and allocating of space for the users that reflect efficiency and flexibility. Together, the design practitioners on a project can make a difference in how that building affects the people who live, work, or play in it as well as the earth's ecology. According to Louise Jones, there has been significant research conducted on sustainable building and construction systems, but little has been done to fully define the role the interior designer plays in the design of an environmentally responsible interior for such a building. (McDonough & Braungart, 2002).

Heating and cooling systems that ensure adequate ventilation and proper filtration can have a dramatic and positive impact on indoor air quality. Preventing indoor microbial contamination through selection of materials resistant to microbial growth, providing effective drainage from the roof and surrounding landscape, installing adequate ventilation in bathrooms, allowing proper drainage of air-conditioning coils, and designing other building systems to control humidity, all lead to the creation of sustainable interior environments. (California integrated waste management board: Green buildings basics n.d.)

For lighting fixtures, the use of dimmer controls provide variable indoor lighting, when you dim light bulbs, it reduces their wattage and output, which helps save energy. Dimmers are inexpensive and provide some energy savings when lights are used at a reduced level. They also increase the service life of light bulbs significantly. Having bigger windows will provide sufficient alternate lighting during the day. The use of motion sensors automatically turn outdoor lights on when they detect motion and turn them off a short while later. They are very useful for outdoor security and utility lighting.

Sustainable furniture basically implies the use of furniture that is founded on ecological sensitivity, sustainable design, comfort, good posture and durability. In this project it is the researcher's intention to explore the different sustainable local materials available for the production of furniture. Sustainable furniture seeks to ensure that every piece of furniture produced can be either rejuvenated or recycled, and thereby extending the life of the product even after use. Below is an image of an African inspired sustainable furniture.



Figure 4: African Inspired furniture

Source: Ecostyle design

Sustainable landscape architecture is a category of sustainable design and energy-efficient landscaping concerned with the planning and design of outdoor space. Design techniques include planting trees to shade buildings from the sun or protect them from wind, using local materials, and on-site composting and chipping not only to reduce green waste hauling but to increase organic matter and therefore carbon in the soil. Some designers and gardeners use drought-resistant plants in arid areas and elsewhere so that water is not taken from local landscapes and habitats for irrigation. Water from building roofs may be collected in rain gardens so that the groundwater is recharged, instead of rainfall becoming surface runoff and increasing the risk of flooding.

Areas of the garden and landscape can also be allowed to grow wild to encourage biodiversity. Native animals may also be encouraged in many other ways: by plants which

provide food such as nectar and pollen for insects, or roosting or nesting habitats such as trees, or habitats such as ponds for amphibians and aquatic insects. Pesticides, especially persistent pesticides, must be avoided to avoid killing wildlife. Soil fertility can be managed sustainably by the use of many layers of vegetation from trees to ground-cover plants and mulches to increase organic matter and therefore earthworms, nitrogen-fixing plants instead of synthetic nitrogen fertilizers; and sustainably harvested seaweed extract to replace micronutrients.

Sustainable landscapes and gardens can be productive as well as ornamental, growing food, firewood and craft materials from beautiful places. Recycling of water, recycled water can satisfy most water demands, as long as it is adequately treated to ensure water quality appropriate for the use. Decentralized water reuse systems are being used more in the arid west where long term drought conditions exist. Successful gray water systems have been operating for many years. They can meet up to 50% of a property's water needs by supplying water for landscaping. Recycling gray water saves fresh potable water for other uses, reduces the volume of wastewater going to septic systems and wastewater treatment plants, and increases infrastructure capacity for new users.

A good example of an iconic sustainable design building is the 400 square meter house by Marie Jose Trejos, it uses shipping containers essentially as thick habitable walls, with a big sloping roof enclosing the area between. By reusing transport objects, costs were minimized and the completion time was shortened by 20%. The impact on the environment and generation of CO₂ were also reduced, as the details of the house make the most of the climatic elements. The central module, with its double height space, acts

as a lung with crossed ventilation and the west façade is glazed to let in natural light so that during the daytime it is unnecessary to use electric fixtures.

Shipping containers can turn into ovens in direct sunlight, so the house is shaded by deep overhangs and bamboo screens. The central area, used for both social and work purposes, is delimited by two rows of containers, wood obtained from cutting branches of the cedar tree was used for the breakfast bar in the kitchen and the table legs. Inside are the private spaces of the bedrooms and a studio, an outdoor pathway that leads to the stairs and the rooftop garden on the third floor that can be used as a sun deck for relaxation, the northwest façade is covered with moveable bamboo panels designed to protect the interior spaces from the sunlight. Below are some of the images of the space.

Figure 5: Casa Incubo shipping container house

Source: Designboom



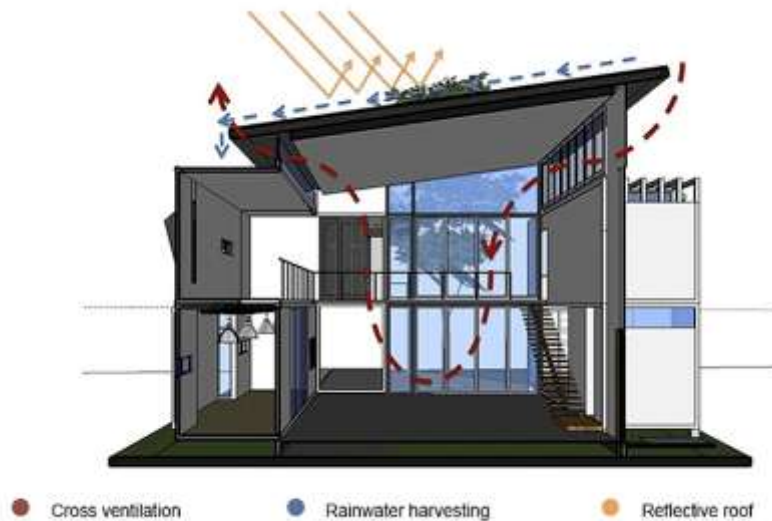


Figure 6: Diagram of eco-sustainable solutions

Source:
Designboom

2.5 Exemplar

One of the many designers who have been successful in fusing both patterns and color effectively in interior spaces is Lars Contzen, a German designer renowned for eccentric, large-scale, graphic décor and is certainly no stranger to making a statement with bold, vibrant colors. He has spent years perfecting the art of using color and patterns to really push boundaries in interior decoration. He uses large patterns in his designs to him this is a form of communication that is contemporary, progressive and that is influenced by the cultural and sub-cultural influences of our time. “If we didn’t live in a multimedia, colorful age, my designs would probably look totally different. In my opinion, good design is a reaction to cultural currents” Contzen.

Contzen uses different shapes and colors to create patterns and rhythm, he goes on to say that it takes more courage to use small scale patterns. By using larger scales a room starts to “open” itself. Mostly the room appears to be more structured, puristic and it seems to have more space. He believes that Small scale patterns can quickly look nervous and can make a room seem confined.

Below is a sample of his work from his color courage collection.



Images: Colour Courage, Lars Contzen collection

Source: <http://www.larscontzen.de/>

2.6 Conclusion

In conclusion, sustainable design aims at creating healthy environments that enhance occupants' comfort and satisfaction, these environments are made aesthetically appealing by manipulating African prints and introducing the new unique cultural designs in interior spaces from the furnishings to the décor to give the space a touch of Africa. It is no secret that African cultural values have come into strong confrontation by values communicated through western lifestyles, teenagers and young adults are the most affected. Africa is increasingly being celebrated by more westerners than Africans. The hope is that as designers increase the cultural content in the surrounding environments the young generation, may begin to appreciate and embrace their heritage and consequently get a sense of identity as proud Africans.

CHAPTER 3: METHODOLOGY

3.1 Research Design

Kerlinger describes Research design as a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme or program of the research. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of data. It aims to conceptualize an operational plan to undertake the various procedures and tasks required to complete your study and ensures that these procedures are adequate to obtain valid, objective and accurate answers to the research questions. (Ranjit, 2005)

Research is only as good as its interpretation, if the data that designers have to work with is rich and relevant it is absolutely essential that the working material of design used in response be the result of similarly rich critical investigation. (Laurel 2003, 82) Numerous frameworks have been developed to evaluate the rigor or assess the trustworthiness of qualitative data (Lincoln & Guba, 1985) and strategies for establishing credibility, transferability, dependability, and confirm-ability have been extensively written about across fields (Krefting, 1991; Sandelowski,1993). General guidelines for critically appraising qualitative research have also been published (Mays & Pope, 2000).

For the novice researcher, designing and implementing a case study project, there are several basic key elements to the study design that can be integrated to enhance overall study quality or trustworthiness. Novice researchers have a responsibility to ensure that:

the case study research question is clearly written, propositions are provided, and the question is substantiated, case study design is appropriate for the research question, purposeful sampling strategies appropriate for case study have been applied, data are collected and managed systematically and the data are analyzed correctly (Pamela Baxter and Susan Jack 2008, 556.)

3.2 Target Population

To ensure that the researcher gathers relevant information pertaining to suitable patterns and sustainable materials that can be incorporated in the interior design of youth centers, the researcher targeted a group of young people aged between 18 and 25 years of age. The researcher believed that this group is vastly influenced by global designs. In order to create a modern look, the participation of those who interact with the space and its immediate environment is necessary. Therefore for this study, the various respondents who facilitated the research include; 20 University of Nairobi students who visit the center regularly, 3 student facilitators and 2 AIC youth center staff members.

3.3 Sample Population

As mentioned, the target population for this study were young people aged between 18 and 25 years. Because of constraints of time and resources, the sample selection was a small fraction of the population who are in close proximity to the researcher that is a group of approximately 20 young adults randomly selected from a population of 200 students who visit the Youth Center regularly from the University of Nairobi. The researcher used purposive sampling in the selection of the sample in order to gain adequate information within the limited time. The sample comprise of a total of 48 participants as presented on the table below.

Table 1: Sample Distribution

Population Category	Frequency
Facilitators	6
Staff	2
University of Nairobi Students	40
TOTAL	48

Source: Author's construct

3.4 Data Collection

There are two major approaches to gathering information about a situation, person, problem or a phenomenon. Sometimes information required is already available and need only be extracted, however there are times where information must be collected. The choice of the method depends on the purpose of the study, resources available and the skills of the researcher (Ranjit 2005, 118). The researcher used both primary and secondary sources of data collection. The first tool of data collection the researcher used was photography, this method captures events in real time and offers further information when presented and they are efficient in facilitating acquisition of fast-hand data. Data collected was recorded through taking of field notes and caption of images using a digital camera.

Observation, is a useful tool because it is a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place. The researcher

conducted observation under natural conditions by participating in the activities of the group being observed at the Youth Center without their knowledge. The information received was recorded in detailed notes in a narrative form and on a scale that rates the responses of the effect that the appearance of the youth center has to the performance and emotional arousal of the young people as either positive, negative or neutral.

The researcher also carried out a series of unstructured interviews, the plan was to carry out in-depth interviews which allow face to face interaction with the informants, followed by focus group interviews which was solely done by engaging the group in a broad discussion on the topic at hand, this ensures accuracy of the information gained. The methods of recording the researcher relied on during the interviews was the use of a recorder and note taking. Lastly, the researcher introduced open ended questionnaires which were emailed to the facilitators and then collectively administered to the participants once they are done with their day's activities at the youth center. This process ensured 100% response rate and any clarifications needed were attended to promptly.

3.5 Data Analysis Tools

Qualitative research does not express information obtained from participants in numerical form. The emphasis is on the stated experiences of participants and in the stated meanings they attach to themselves, to other people and to their environment (Research methods: Data analysis, 2004). As data are collected and analyzed, analyze data by carrying out primary data analysis by compiling field notes and images captured and continuously examine them. The researcher will then highlight certain points in the text

or writing comments on the margin and then note contradictions, inconsistencies, any common themes that seem to be emerging and then make comparisons and contrasts with other data.

The researcher integrated a process of member checking, where the researchers' interpretations of the data are shared with the participants, and the participants had the opportunity to discuss and clarify the interpretation, and contribute new or additional perspectives on the issue under study. Additional strategies commonly integrated into qualitative studies to establish credibility include the use of reflection or the maintenance of field notes and peer examination of the data.

3.6 Data Presentation methods

3.6.1 Graphs

From this results, frequency distributions generated will be very useful in the statistical analysis of the findings. The statistics will be tabulated respectively and the data will later on be presented by use of a Pie chart, frequency polygon and a histogram.

3.6.2 Narrative

The notes taken will be interpreted and explained in form of narratives, they will be clustered in different categories with respect to topics under discussion.

3.6.3 Photography

Captioned photographs with detailed explanations that describe the different areas and their relevance to the research will be presented.

3.7 Conclusion

In conclusion, the methods chosen for this study have been selected to ensure that data is collected in the most accurate and efficient way and that the researcher acquires adequate data for analysis. The research will provide a clear understanding of the target group needs and expectations in relation to their ultimate experience during their interactions. The group's expectations will enable the researcher to come up with a comprehensive design solution to fit their varying tastes. The methodology used ensures that the information that will be gathered is relevant to a wider perspective.

CHAPTER 4: SITE ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

From observation, nothing has been done to improve the aesthetic appearance of the AIC youth center, despite being in existence for years it still looks like a halfway house with portable furniture, plain walls and movable installations. The building has not been permanently set up, it gives you a constant reminder that you are in a shipping container, the use of sustainable materials in the creation of healthy, livable and comfortable interiors for young people has not been addressed. There are no clear distinctions of the different areas where activities take place, this poses great confusion to the occupants. The landscape lacks beautiful plantations, even though a lawn exists, nothing has been added to increase its aesthetic appearance.



Figure 7: AIC Youth Center, Garden estate

Source: Author, 2015



Figure 8: View from the front of the structure

Source: Author, 2015.

4.2 Qualitative Analysis

4.2.3 Interior Architecture

The interior environment is divided into four spaces, kitchen area, main seating area a gaming section and the washrooms. The main wall is covered with white painted gypsum, this makes the container habitable. The room partitions are also made of gypsum reinforced with wood, kitchen and the washrooms have wooden doors that separate them from the main space whereas the gaming area and the seating space are side by side with no partition.

The washroom and kitchen partitions are well done, this makes the space look neat. The space has no ceiling, what exists is the metal framework that supports the iron sheet roof. This makes the place very cold at night or when it rains. The lighting used in all the

rooms is fluorescent lighting, this light provides enough illumination for the room, however, it produces some background noise as is common with fluorescent lighting.



Figure 9: Gaming zone and the storage equipment

Source: Author, 2015.



Figure 10: Main interior space of the structure

Source: Author, 2015.



Figure 11: Ceiling

Source: Author, 2015.



Figure 12: Floor

Source: Author, 2015.

Aside from the roof, the concrete floor also contributes to the low heat in the room. There is little provision for natural light as most of the windows are blocked off by the storage units. The available windows are open but are not barred this poses issues of insecurity and lets in dust and wind which occasionally causes damage to documents and other items. The indoor gaming activities take up close to half of the rest of the space, although they give the occupants an opportunity to relax and enjoy themselves, they are quite crowded and therefore limit the number of players at a time, the storage space for these games is also not adequate. Most of the games need to be packed and unpacked whenever they need to be used due to insufficient space, the games are usually set up at the front veranda.



Figure 13: Gaming zone, Front Veranda

Source: Author, 2015

4.2.2 Furniture design

The existing furniture is durable and portable, it doesn't come in a variety of colors, they are mainly made out of wood and PVC. The room has light, portable and stackable seats, the gaming tables are quite bulky so they don't get moved around a lot. The furniture are stacked up after use and stored against the wall. The disadvantage of having the portable furniture is that you can set up anywhere in the compound, the disadvantage is that they cause confusion and they form a problem of increased clutter when not in use.



Figure 14: Portable and fixed tables

Source: Author, 2015.

Figure 15: Seat

Source: Author, 2015.

4.2.3 Exhibition and display

As mentioned earlier, the storage is portable and light, the current exhibition and display is poorly executed and planned. The kitchen has wall cabinets above and below the counter, they have fewer partitions than needed so most of the utensils are stuffed inside. The washrooms have huge wall cabinets for storage of cleaning equipment and towels while the rest of the storage and display units are spread all over the rest of the space.



Figure 16: Storage cabinets at the main area

Source: Author, 2015.



Figure 17: Kitchen Cabinet

Source: Author, 2015

Figure 18: Washroom storage cabinets

Source: Author, 2015

4.2.4 Landscape design

The compound is fenced off by use of concrete on the side that borders the road and by vegetation on the side that borders the homes, plantation on this site is not plenty, it is mostly made of grass, which makes up a huge part of the lawn, there is half a basketball court on one side with cemented floor. There is only one tree this reduces the number of windbreakers within the compound, a concrete outdoor seat is located on one end and the watchman's station on the other end next to the gate. This is the first interaction any guest has with the estate as you come into the gate, there is no existing signage, the shipping container building is jungle green, and this in fact reduces the aesthetic appearance of the area.

Figure 19: The Entrance of the youth center

Source: Author, 2015



Figure 20: Play area (basketball court)

Source: Author, 2015

4.3 Presentation of findings

4.3.1 Introduction

Shipping containers are widely re-used in Kenya, they are mostly used for storage or in the construction of market stalls, and recently they have been used in the construction of houses and offices, though not for long term use. The reuse of shipping containers is still an idea yet to be adopted by many due to many factors, however, contrary to the beliefs of many, shipping containers can provide, very fitting comfortable and luxurious living when well done.

For this research, the comfort of the occupants was the main point of focus, suitable living environments are obligated to ensure full functionality and appeal to its users. For this reason the researcher collected relevant data from a sample of the population to guide his decision making process in coming up with the new design.

4.3 Quantitative Analysis

Most of the respondents were aged between 20 and 25 years of age, both genders were well represented. The respondents rated the aesthetic appeal of the youth center as either positively or negatively appealing, their response allowed the researcher to validate the redesigning of the youth center.

Gender	Age(20-22)	Age (23-25)	Age (25-35)
Male	10	8	5
Female	11	10	3

Table 2: Respondents feedback breakdown

Source: Author's construct, 2015

The researcher investigated the general opinion of the participants with regards to the state of the youth center, the responses were encouraging, they agreed that there are areas of improvement for instance when it comes to issues of storage, space and furniture, nonetheless they had very high regard for the youth center, it is an exciting, fun, serene and memorable place for many. Below is a breakdown of their responses.

Gender	Positive	Negative	Neutral
Male	19	1	7
Female	15	2	5

Table 3: Reactions to the current state of the youth center

Source: Author's construct

To understand the different decorative appeals of the general group, the researcher asked the respondent to comment on what stuck out most to them on an image on the questionnaires, here is a breakdown of their responses.

Gender	Forms	Patterns	Color	Texture
Male	8	6	8	1
Female	6	5	13	1

Table 4: Preferences of the respondents

Source: Author's construct

4.4 Presentation of Findings

There was very good feedback, the respondents were ready to share their views in order to contribute to the improvement of their space. They had positive remarks towards the current state of the youth center, they used words like: fun, exciting, serene, memorable, accessible, spacious, refreshing, educational and convenient to describe the space.

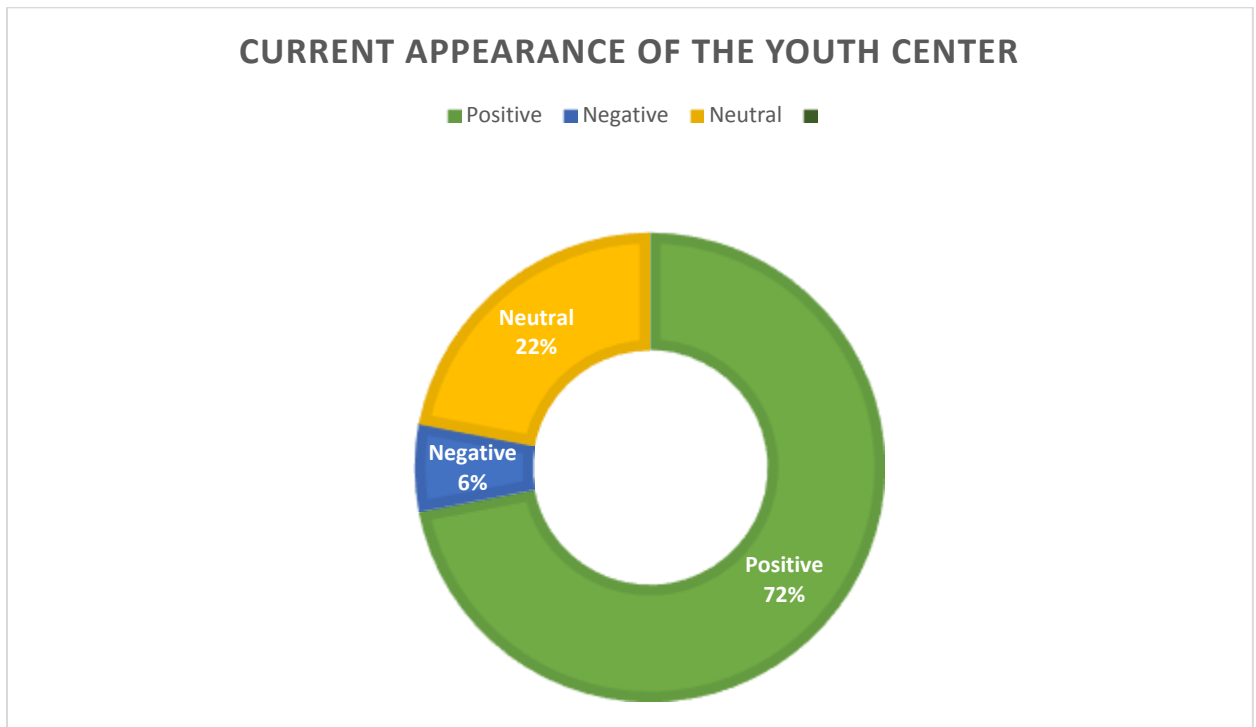


Figure 21: Current appearance of the youth center

Source: Author's construct

On the question of appeal most of the respondents found flowery, rounded forms and color most interesting followed by patterns, others were simply intrigued by the virtual texture created by the whole ensemble.

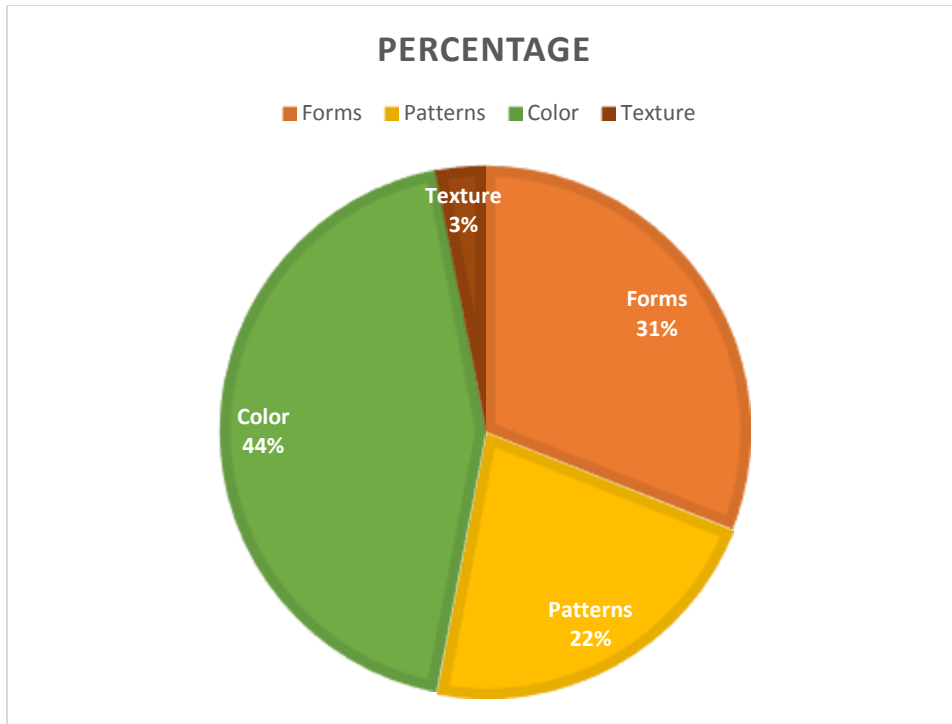


Figure 22: Different appeals of the respondents Source: Author's construct.

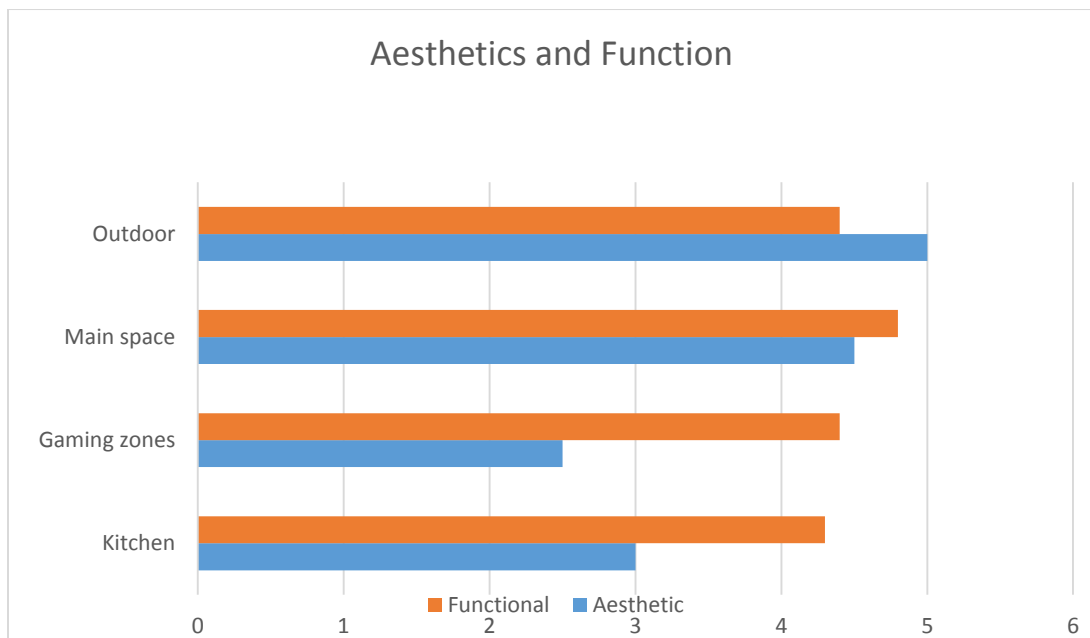


Figure 23: Shows the rate of desired aesthetics or function for the different spaces

Source: Author's Construct

From the research it was determined that most of the respondents preferred outdoor to indoor sessions, although they have never had indoor sessions they believe it would be great to try it out. During the interviews it was determined that although they enjoy coming together at the youth center, their dislike for the current state of the space is quite high, they described it as uninspiring and boring. They suggested art and paintings for the bare walls, fabric incorporation and more lighting to improve the ambience.

Most of the respondents described the environment as quiet and serene, they went on to suggest the inclusion of seats and improvement of the landscape to offer a better aesthetic quality of the space. Although they enjoy the beautiful green lawn, they felt that it was very important for them to have a place to seat either at the lawn or at the veranda to interact as they spend most of their time socializing.

Increment of the gaming zones spaces was the most voiced opinion, almost everyone felt like there should be more games, spaced out in the different areas so as to give everyone an opportunity to participate. Their biggest dilemma was that although they saw the need to increase the gaming zone, they valued the spaciousness of the center and they wanted to keep it open on serene not crowded and cluttered.

The facilitators suggested the inclusion of study boards that would enhance the sharing of ideas, good seating that is easily stacked and is easy to move around was suggested. They also had no office so the inclusion of an office space where they can meet their students for counseling was top on their list of needs. Generally, they wanted to provide safe and comfortable environments for their students, they used words like: experiential, engaging and fun to describe the youth center.

The most preferred patterns on the Kente fabric were pattern 3 and 5 shown below. This patterns will form the basis of inspiration for the new designs that will be incorporated in redesigning the youth center.



Figure 24: Selected Kente patterns

Source: Google images

4.5 Conclusion

In conclusion, there is definitely a need for both function and aesthetics in order to improve the existing conditions, this was revealed fully in the respondents' feedback. Factoring in the elements that make the center as exciting as is and improving them will improve the general appeal to the users. The challenge for the designer is therefore creating a space that minimally uses space while providing full functionality and is at the same time appealing to its users. The researcher finally concluded that the people who use this space are very energetic and vibrant, creating a space that reflects them or embodies their belief will go a long way in fostering a sense of belonging.

CHAPTER 5: SUMMARY FINDINGS AND RECOMENDATIONS

5.1 Introduction

Gathering inspirational materials was basically the first practical step towards designing. As sources of inspiration, a number of inspirational materials from books, magazines and electronic sources on the youth, African fabrics and sustainable building materials were gathered. From the inspirational materials some of the important elements in the Ghanaian textile design such as line, space, shape and color were quite sensible. They all possess elegant and delicate lines which inspired the researcher's geometric designs.

5.2 Summary of Data Analysis / Findings.

Spaces for young people have a few basic characteristics, they have to be appealing to young people, and this is described as a safe place where they could socialize with their friends, second as a place of consumption with a variety of amenities for shopping, food and entertainment. (Travlou 2007). The aim of this research was to find out the needs and wants of the young people, their preferences and likes and establish the standards that would ensure their comfort. It was evident that while the occupants need to increase the different zones, they also wanted to keep the spaces free from clutter and crowding. The research enabled the researcher understand the order of priority and areas where preferred aesthetics over function and vice versa was desired.

5.3 Recommendations

5.3.1 Interior design

Factoring in sustainable design issues in the overall design maximizes benefits, ensures sound building performance and reduces costs. The researcher proposes use of greater energy efficiency through increased building insulation and air sealing reduces heating and cooling loss, which can reduce the size of HVAC system needed to achieve the desired performance. However, it also may require special attention to building ventilation to ensure adequate indoor air quality.

Passive solar orientation of a building takes advantage of the sun's natural heat to capture solar heat, since the sun rises in the east and sets in the west, a rectangular building should be oriented with its long sides facing the north and south and the shorter sides facing east and west, this is optimal to maximize on solar energy. The windows allow illumination of natural sunlight into the interior of a building during the day, reducing the need for artificial lighting and consequently additional costs. Heat absorption can be further enhanced through inclusion of design features such as overhangs that block out additional sunlight.

Terrazzo flooring brings design flexibility not available with other types of flooring, it offers an unlimited color range coupled with a plethora of aggregate options from mother of pearl, to marble, to recycled glass; these are among the many advantages offered by terrazzo. It is very durable and has a reputation for being maintenance free, its lack of water absorption and porosity results in a surface requiring only minimal cleaning processes, without the need for use of harsh cleaning chemicals.

For the wall insulation the researcher proposes to use bamboo as the wall covering, it has good insulation properties. Lighting, inclusion of more windows will ensure enough light distribution during the day, having perforated roofing sections cut out in geometric patterns will selectively allow light into the desired areas of the room. Steel Roofing that allows installation of solar panels to tap the solar energy and inclusion of an acoustical ceiling will improve the performance quality of the space.

5.3.2 Landscape design

The landscape compliments the beautiful interior spaces, the researcher proposes to introduce fenced gaming zones, playgrounds are fertile areas of interaction. Planting planters on the walled perimeter fence adjacent to the road will add an aesthetic element to the environment. Introduction of seating spaces randomly placed on the yard will provide safe and comfortable spaces for the young people, planting a few trees whose foliage will shade the building and having beautiful flowers and plants along the edges of the compound will give the young people a beautiful and serene, yet welcoming and accessible environment where they can draw a sense of belonging.

Introduction of water recycling units will reduce water consumption. Recycled water can satisfy most water demands, as long as it is adequately treated to ensure water quality appropriate for the use, this water is most commonly used for non-potable (not for drinking) purposes, such as agriculture, landscape, toilet flushing among others. The use of gray water at decentralized sites for landscape irrigation and toilet flushing reduces the amount of potable water distributed to these sites, the amount of fertilizer needed, and the amount of wastewater generated, transported, and treated at wastewater treatment facilities. In other words, water reuse saves water, energy, and money.

5.3.3 Furniture Design

Young people enjoy keeping up with the global contemporary designs, the challenge for today's designers is how to personalize these trends and integrate the Africanity content in them. For this project, the researcher intends to creatively fuse current furniture trends like the mid-century modern furniture designs with the Kente fabric inspiration while still paying attention to the sustainability of the materials and their portability.

According to Karim Rashid, an object is meant to be a reflection of its user, it is supposed to be self-contained, the message is very simple and human, soft and engaging. Using new and advanced technology in the creation of contemporary African inspired design to speak about a digital world becomes a new way to physically interpret the digital age that young adults currently live in. The designer proposes to apply principles of minimalism and challenging the norm by moving away from the archetype and using color and shapes to create new design that perform for these young people.

5.3.4 Exhibition and display

The researcher proposes to use the kente patterns as an inspiration for the in-wall storage, in wall storage blend in into the décor rather than standing out and this makes them suitable for minimalist contemporary interiors. And because of that, a large built-in piece of furniture can look more slender and smaller than a free-standing one with the same dimensions. Moreover, built-ins provide lots of storage. They can occupy an entire wall without making the room feel considerably smaller. They help create a cohesive look throughout and can be combined and coordinated with the rest of the décor, they can also be tailored to fit your specific needs. Lighting can also be easily integrated into the built-in furniture and this can bring about a wonderful aesthetic effect.

5.4 Conclusion

In conclusion, utilizing a sustainable design philosophy encourages decisions at each phase of the design process that will reduce negative impacts on the environment and the health of the occupants, without compromising the bottom line. The implementation of these recommendations as per the four electives in interior design will result in a holistic sustainable environment that is healthy, aesthetically pleasing and functional.

5.5 Suggestions for further study

This research mainly focuses on the incorporation of African patterns and sustainable interior design materials in the creation of aesthetically appealing spaces, research needs to be done to investigate the sustainable materials and practices that can be used in other areas of design specialization. And how technology can play a part in the redesigning of other spaces especially since we are evolving technologically. With the advancement of technology comes new challenges and opportunities, African designers and artists ought to be flexible and ready to adopt to the change in globalization.

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APPENDIX:

Questionnaire: For Students

Re-designing the Garden estate youth center

Instructions: (Tick where applicable)

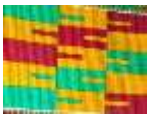
1. What is your gender?
 - Male
 - Female
2. What age group do you fall?
 - 18 - 20
 - 21 - 23
 - 24 – 25
3. Do you prefer indoor or outdoor sessions at the AIC youth center?
4. In what area do you spend most of your time?
 - Kitchen
 - Gaming zone
 - Main space
 - Outdoor
5. Describe the youth center in three words.
 - .
 - .

6. What do you like most about the youth center?

➤ .

➤ .

7. Please select the pattern design you like(you can select more than one)



Pattern 1

Pattern 2

Pattern 3

Pattern 4

Pattern 5

Pattern 6

8. What strikes you most about this picture? (specify the color, patterns or forms)



9. Do you have any comments or suggestions?

Questionnaire: For Facilitators

Re-designing the Garden estate youth center

1. What do you like most about the youth center?

➤ .

➤ .

2. What needs would you like the youth center to meet?

➤ .

➤ .

3. Describe the youth center in three words.

➤ .

➤ .

➤ .

4. What areas would you like to improve either aesthetically or functionally? And how?

- Gaming area, Kitchen area, Main hall, Landscape

5. Would you prefer an open plan or a closed plan (partitioned) set up?

6. Do you prefer indoor or outdoor sessions?

10. Please select the pattern design you like(you can select more than one)



Pattern 1

Pattern 2

Pattern 3

Pattern 4

Pattern 5

Pattern 6

11. What strikes you most about this picture?



12. Do you any comments or suggestions?

Thank You very much for you time!

Mind Map

