

# An Investigation into the Potential of Architects' Contribution to Furniture Design in Uganda

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## Abstract

The purpose of the study was to investigate how architects in Uganda can contribute to the enhancement of the quality of furniture produced in Uganda. The objectives of the study were to investigate the relevance of architects in the field of furniture design and to find out the extent of architects' involvement in furniture design and production in Uganda. Data was obtained from literature, interviews with architects, furniture manufacturers and carpenters. The study revealed that furniture makers in Uganda obtain designs from catalogues of furniture manufacturers in Asia like China. It was found that some manufacturers have designers some of whom are carpenters. The researchers investigated architects' perception of furniture design in relation to their other architectural responsibilities and found that architects agreed that furniture is part and parcel of architecture. Architects also expressed willingness to design furniture for projects because they understand that furniture is intrinsic to architecture. The level of involvement of architects in furniture design is however limited by challenges which are contractual and economical among others. The research concluded that there are design gaps in the furniture industry because the responsibility of designing furniture is relinquished to people who have no knowledge of design principles, resulting in repetition of the same design by different producers and consequent lack of variety on the furniture market. The research also concluded that architects have the potential to make revolutionary contributions to the industry through collaborating with furniture producers.

**Keywords:** Quality, Furniture, Design, Production, Architects, Uganda.

## 1. Introduction

The Government of Uganda, through the Ministry of Trade Industry and Cooperatives, in 2014, launched the Buy Uganda Build Uganda (BUBU) policy to promote consumption of products made in Uganda. One of the products the policy focuses on in its first three years of implementation is furniture. Uganda is the fourth largest furniture consumer in East Africa and the furniture market in Uganda is one of the fastest growing in the region. However, furniture design and production in Uganda is dominated by crafts people, carpenters and welders, among others. Some of these people are formally trained in technical schools while others learn on the job. As a result of their lack of credible design knowledge, among other reasons, the furniture produced in Uganda is not internationally competitive. The quality of the furniture produced is hinged on the design process because it is during this process that important considerations like proportions, ergonomics, function, detail, aesthetics and materials, are made. Specifications of materials and joinery are also made during the design process. The architect, as a professional designer, has the potential to contribute to the improvement of furniture design and production in Uganda. For the quality of furniture produced in Uganda to improve, there have to be improvements in the design and production. This way, the furniture made in Uganda can compete favourably in the Uganda furniture market and also on the international market. We investigated into how architects can contribute to the improvement of quality of furniture. The study was conducted among, practicing Architects in Kampala, manufacturers of furniture products in Kampala and carpenters. The researcher assessed the processes of furniture design among these groups and the technologies employed in the processes of design and production.

## Objectives

The main objective of this research was to reveal architects' potential in the enhancement of the quality of furniture produced in Uganda. Specific objectives included: to establish the relevance of architects in the field of furniture design and the extent of architects' involvement in furniture design and production in Uganda and also to propose ways in which architects can contribute to the improvement of the quality of furniture in Uganda.

## Methodology Used

The key concepts which guided this research were the Architects' involvement in furniture design, furniture design process, furniture design and production technology and collaboration between architects and furniture producers. On the involvement of architects, the researcher established the relevance of architects in furniture design by reviewing literature on the influence architects had in the evolution of furniture design and the contributions architects have made to the field of furniture design in the present day. Through interviews, the extent of architects' involvement in furniture design and the issues affecting their level of involvement were found in addition to architects' views on furniture design. This was to find out what is preventing architects from taking part in furniture design so that then we could later recommend how these challenges can be overcome. On the concept of furniture design processes, we reviewed literature on furniture design principles and process to have a criterion for assessing the design processes of carpenters and manufacturers. Through interviews, observation and photography, the design processes of architects, carpenters and manufacturers were studied and the effect of the nature of these processes on the quality of furniture produced. Studying the design processes was to identify design gaps and how these gaps affect the quality of furniture in the industry. The researcher engaged in oral interviews with some craftspeople and manufacturers dealing in furniture design to acquire information on their level of skill and training, the technologies they employed in design and production. We also developed interview guides; sets of questions to ask the subjects without limiting their responses. Through these interviews, we acquired information regarding architects' views on furniture design, the extent of architects' involvement in furniture design, the issues which affect architects' involvement, the challenges architects face when they engage in furniture design, to what extent architects acknowledge furniture design as a responsibility and their degree of collaboration with manufacturer's and other producers of furniture.

## Literature Review on the Relevance of Architects in Furniture Design

According to the Design Institute of Australia, 2018, furniture design can be considered to be a specialist area of product design or industrial design. However, the specific ergonomic knowledge that a furniture designer must apply and the specialized construction methods and pre manufactured components that undergo constant change in the industry make it a large area of specialization. It is the development and preparation of furniture for manufacture. Furniture design is particularly concerned with those aspects of furniture that relate to human usage and behaviour, product appeal and fashion. According to Kendall College of Art and Design, 2018, furniture design is the use of a variety of skills to design new furniture and related products for industrial, commercial and domestic use. The products vary greatly from bespoke design to mass produced items.

Deutscher Werkbund (1907-1938), also known as the German Association of Craftsmen, was influential in its attempts to inspire good design and craftsmanship for mass produced goods and architecture. Founded in Munich in 1907, it was composed of artists, artisans, architects and industrialists who designed commercial and household products as well as practicing architecture. (Encyclopedia Britannica, n.d.). The group's intellectual leaders, architects, Herman Muthesius and Henry van de Velde were influenced by William Morris, who, as the leader of the 19<sup>th</sup> century English arts and crafts movement proposed that industrial crafts be revived as a collaborative enterprise of designers and craftsmen (Encyclopedia Britannica, n.d.). Rather than viewing industrialization and art as separate opposing entities, the Deutscher Werkbund was an integration of craftsmen, artists, and industrialists together in the design process (Pigeonsblue, 2014). Influential architects in the movement include, Peter Behrens, Ludwig Mies van der Rohe, Lilly Reich and Henry van de Velde. The movement began the development of Bauhaus school where its designers were trained (Pigeonsblue, 2014).

Modernism (1918-1970) began in the early twentieth century by rejecting the traditional rules of art that came before. In furniture, modernist designs were minimalist, monochromatic and focused on the use of new synthetic materials (Muscato, n.d.). The modern movement evolved overtime and some of the modern movements are Bauhaus modern and Mid-century modern. Bauhaus modern was fostered by Germany's Bauhaus school and gave rise to some of the greatest designers of all time including architects who were also furniture designers, Walter Gropius, Ludwig Mies van der Rohe innovator of the chromium plated steel furniture, and Marcel Breuer. This group of designers promoted new technologies and defied traditional ideals of décor and created a whole new aesthetic based on form and function.

Postmodern furniture design is described by Artquid as a reaction against the cold simplification of forms of the 1920's. In the 1970's and through the 1980's designers sought to break free from the stifling rules and rationality of modernism (Gross, 2015). In postmodern design, form does not follow function. Components of objects were often superfluous and there only for decoration to make a visual statement. Form was whatever postmodern designers wanted it to be. Postmodern design shuns minimalist design and celebrates ornament. In the postmodern era, architects have made remarkable contributions to the field of furniture design. Paradigm Shift

by Rem Koolhaas; the idea was using three horizontal shelves on top of each other which can be rearranged according to the requirements of the user. The concept of making the shelves act as a sofa was practical as he only focused on performance of the product rather than aesthetics (arch20, n.d.).

After the involvement of the architects in furniture design, furniture was no longer just horizontal surfaces with vertical supports, it was reinvented. Human experiences with furniture were reimagined. The way we see furniture changed, the ways in which we use furniture were multiplied and the ways in which we experience and feel about furniture greatly increased.

### **Furniture design principles and process**

Every furniture design ought to be created basing on one or more rules of design. These rules guide the fashioning of the design. These rules guide the furniture designer's decisions ranging from choice of materials, to form, support structures, joinery details, among others. Every decision the furniture designer makes at every stage in design contributes to the overall composition of the furniture design product and has an effect on how the user perceives the product, uses the product and how the user feels about the product. There are known furniture design principles and these include: Balance - a psychological sense of equilibrium (Yangjoo, n.d). It is the equal distribution of visual weight; Harmony involves thinking of the object as a totality; Variety is the use of several elements in design to hold the viewer's attention and to guide the viewer's eye through and around the design (Paul, 2011); Emphasis is where an element is dominant to draw attention; Rhythm is visual pattern repetition. Rhythm is continuity, recurrence or organized movement (Mihai, 2007); Proportion is the ratio of one design element to another and finally scale is the size of one design element relative to another (Mihai, 2007). The above are the rules which form the basis for conceiving, fashioning and creating furniture pieces by designers. Where the designer subjects his or her creation to the above principles, the resultant product is a visually appealing one. To achieve the above described principles, the designer uses elements of design.

The design processes used when developing a piece of furniture include: empirical knowledge; intuition; judgement based on assessment; deductive and inductive reasoning; creative improvisational methods of working; designing for accessibility; designing according to codes, health and safety and welfare of users (John Wiley and Sons, 2012). Components of the design process include conceptualization, sketching, drawing, computer rendering and model making (John Wiley and Sons, 2012).

### **Discussion and analysis of findings**

It was established that a few of the craftsmen are formally trained in carpentry and hold a diploma or certificate in carpentry from vocational training institutions in Uganda but majority of the craftsmen acquired their skills in carpentry on the job. They learnt by doing, which means they learnt how to accomplish a task by actually executing the task. The training is hands-on, which is good since carpentry is a hands-on craft. The training on job begins by learning how to sand a piece of furniture, he then learns how to mix varnishes and stains before finally learning how to varnish. The level of skill or expertise of the furniture maker contributes to the quality of the structural properties of the furniture for example, the quality and reliability of joints, surface quality and finish, durability and reliability of the whole structure.

How much the on job learning craftsman learns is limited to how much the person they are learning from knows. The level of learning is limited to what is in their specific environments for example, if the workshop one is learning from only makes beds and sofas, the learner will only learn how to make beds and sofas. Training on the job limits how much a person can learn because some parts of the production process are executed by machine owners. The learner's chance to spend adequate time at the machine to learn how to use it is therefore limited. The quality of joints and surface finishes is low because the informally trained craftsman does not learn the discipline of paying attention to details like neatness of joints and consistency of surface finishes.

The technology carpenters have available to them is wood working technology only. The technology used is determined by the materials the craftspeople specialize in. This means that the craftsmen do not create any innovative combinations of different materials because they do not have the technology and skill to execute them. Available technology like machinery for moulding, slot cutting and engraving enhances the quality of technological properties of produced furniture by making execution of tasks easy and accurate. This enables the craftsman to achieve consistency in the aspects of furniture like surface design details and joinery. The craftsman's range of technology is limited and many of the tasks are executed manually like sanding wood, mixing varnishes and stains and varnishing. This manual execution of tasks results in low surface quality and finish, where surfaces are sometimes unevenly sanded and finishes are inconsistent. The craftsman has some good quality fabrics, but because of limited design ability, limited technology and limited skill, the products produced by the craftsman have low quality of aesthetic, functional and structural properties.

The craftsmen are open to the concept of working jointly with others on a piece of furniture. This willingness is expressed in a project the researcher observed, a classroom desk which has a metal frame and wooden surfaces. The project is a collaboration between the carpenters and welders from a different workshop. Craftsmen also produce custom designs for clients who present photographs and for representatives of clients who present sketches. To ensure that the client's requirements are met, the client's representative oversees the production process. This means that craftsmen are willing to work under instruction and supervision. Collaboration with others expands the range of products made by the craftsmen in terms of materials and designs. Collaboration also stretches the limits of the craftsman's ability in cases where they are requested to produce furniture outside the range of what they are used to. Collaboration therefore brings variety and improves the skill of the craftsman especially in cases where he works under instruction of a professional designer. The result is better quality furniture and a wider range of furniture designs on the market for the consumer.

All the architects interviewed reported involvement in the design of fixed furniture in their projects, for example fixed countertops and fixed benches. However, the extent of involvement of architects in the design of loose furniture for example chairs, is 40%. For most architects, involvement in design of loose furniture was limited to reception desks. Two out of five of architects reported being often involved in the design of loose furniture like chairs. One architect does not engage in the design of loose furniture because it is not part of the normal service offered by the architect, it is not part of the contract. Sometimes the architect may advise the client on the kind of furniture to procure for the project. Most of the furniture designed by architects is timber, iron and masonry because these are the most available materials in Uganda. To achieve the level of output they require, the architect supervises the production process.

Architects are adequately equipped with formal design knowledge and experience. They possess full knowledge of the principles of design and are aware of the complete design process. However, the extent of involvement of architects in furniture design is influenced and restricted by a variety of factors. The researcher grouped the limitations as: Contractual Limitations; Clients' Preference; Architects' lack of interest; high cost of production and technological limitations. Findings show that all architects have engaged in furniture design before where 60% have designed only fixed furniture like counters and fixed benches in materials like masonry, concrete and terrazzo. 40% reported having been engaged in the design of loose furniture including reception desks and chairs in materials like wood.

### **Conclusion and recommendations**

Architects reported a growing class of clients who desire new and unique furniture designs and are willing and able to pay the price for it but because their need is not met, they procure imported furniture instead. An example is a client who had the furniture for their project designed in Uganda and manufactured in China. In this case, the client fully paid the architect for the design service and also paid the cost of producing the furniture in China. The challenges faced in this case was that it was not cost effective and the Uganda based architect could not oversee the production of the furniture.

In Uganda, one of the ways carpenters get furniture designs is from photographs presented by clients and clients' representatives oversee the design process. This shows that carpenters are willing to work with designers and under supervision and instruction. In addition to working with designers, carpenters work jointly with welders on furniture in which wood and metal are integrated. This shows that furniture producers specializing in a particular material are willing to work with other producers specializing in a different material. Manufacturers also produce furniture on order. In some cases, architectural plans of the rooms for which furniture is required are provided by the clients' representatives and the manufacturer tailors the furniture to the space. This manifests their willingness to work with the designer of the space. The furniture producers' willingness to work jointly with designers and with each other proves that the design gaps in the furniture design and production industry can be filled.

The views expressed by architects exhibited their understanding of the fact that furniture is an essential constituent of architecture and that it should be designed to suit the needs of the user. The architects acknowledged their ability to design furniture for projects and expressed willingness to do so in spite of the factors which limit their involvement.

To foster interest in furniture design among architects, efforts can be directed towards students of architecture. To promote students' interest in furniture design, the department can hold furniture design competitions every year where a panel of architects assess the students' designs. Students can design all kinds of furniture like lighting, partitions, seating, and storage. This will open the minds of students to furniture design.

To add variety to the products on the furniture market, the architects involved in furniture design can initiate

collaboration among manufacturers specializing in different materials by designing furniture which integrates different materials for example furniture which is a combination of glass and granite to cause glass furniture manufacturer to work with the granite furniture manufacturer, to create a new product.

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