

Research Article

Wood detritus: A functional concept in interior design

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Received: 13.08.2021 Accepted: 07.09.2021

Citation:

Donkor, E. K., Eshun, J. F., Micah, V. K. B. (2021). Wood detritus: A functional concept in interior design. *IDA: International Design and Art Journal*, *3*(2), 184-197.

INTRODUCTION

Abstract

The cutting of trees for site construction and development had become a predominant factor in Ghana. Besides, the practice of cutting and leaving tree roots in the soil had become an impediment, such as harbouring wild reptiles like snakes, iguanas and an infestation of termites. These factors endanger individual lives, especially living in such environments. This study focused on repurposing wood detritus as a functional concept in the interior design. The study sought to analyse neem tree roots and their properties for a decorative piece in interior design. As a studio-based inquiry, the study employed the aesthetico-action model with a narrative method on the techniques and procedures for executing the studio work. It was evident from the studio practice that wood detritus such as neem tree root serves as an embodiment of inherent qualities, ideas and artistic expressions based on its roots' natural forms. Artists should focus on tree roots (stumps) left in the soil and on the environment as a material for art production in the interior space design.

Keywords: Environmental Issue, Interior Space Design, Neem Tree Roots, Studio-Based Research, Wood Detritus.

Contemporary interior design provides the artist with enigmatic ideas to create different dimensions and depths by playing with wood detritus and the interior space. Kucirkova (2018: 2) elucidates that wood has been always a traditional material for interior design. With the use of softwoods and also hardwoods, numerous styles have been created for people to fall in love with. With material diversification in contemporary interior design, the technique of repurposing and morphing wood detritus into the interior design gives this concept as decorative artwork which practically serves a beneficial role in the interior space or the environment. Considering wood detritus from the perspective of interior design, it can aesthetically serve as an inspiration to the artist in diverse ways by repurposing tree roots for interior design. In this sense, exploring tree roots has evolved through its artistic purpose where artists find a beautiful way to bring nature into artistry. The beauty of tree root lies in its twists and turns, intertwine and flow of the natural form of its interlocking roots that can be interpreted as the energy that gives life and the endless transformations in the universe. The interlocking appearance of the tree roots is appreciated for its association with the aesthetic concepts of its eccentricity.

The production of root sculpture is a process of creating based on the shape of the tree root. Cheng (2018: 10) considers this reason as to why an artist depends 70% on the work of God while 30% counts on the work of the artist. In this context, the twists and turns, intertwine and flow of the natural form of the interlocking roots give the artist an idea and sense of finishing. Oko-Mantey (1996: 1) establishes that the carving of stem-branch and stem-root in Ghana is quite an abundance. To Oko-Mantey, some trained sculptors from schools practice



this technique. Besides, these trained sculptors once in a while carved this stem branch which suggests a recognizable image. The trained sculptors carve the stem branch directly following the representation of the stem. In most cases, jutting out branches and roots from the main stem most often serve as heads or arms of humans or animals, leaving the bulk of the wood, the main stem, for the artist to create something out. This practice can be a difficult task, a tedious and slow problem-solving process, to the extent of limiting the artist from working with a particular piece of wood with which he can express himself. In an artistic context, the choices or limits of the artist are expressed within the boundaries of the stem. The usage of tree roots for artefact production gives it a uniform composition by making it attractive. The natural plant root is firmed in nature. When used for a work, it affects the durability of the artefacts positively. In other words, it gives a perfect picture for artefacts as a natural feature and a longer life span.

From a diverse view, tree root sculpture has many interesting features sometimes bizarre to the eyes and scattered around the environment. The practice of tree root art has been greatly appreciated elsewhere, as in Ghana, much has not been seen. The tree root sculpture is relative to stem-root carving where the artist carves roots and stumps of huge trees made available in the environment. Generally, the tree has been exploited for commercial and medicinal purposes. Trees such as maple, cedar, baobab, pine, neem and many more are mostly found in Ghana. Neem tree among these trees has important values in the field of herbal medicine that includes the usage of the leaves, bark and the root. Plants for herbal cure have been long practised where medicinal uses of Neem plant have been explored fully by some African countries of which Ghana is a member of CRMP (Centre for Plant Medicine Research) at Mampong, Akwapim. The uses of the Neem tree lies within its leaves, stem, bark and root particularly its uses for malaria treatment. Biologically, trees help humanity in everyday lives by providing oxygen and serving as a shade for relaxing moments.

In another sense, cutting trees for site construction and urban development has become a predominant factor. Besides, the practice of cutting and leaving tree roots in the soil has become an impediment, such as harbouring wild reptiles like snakes, iguanas and an infestation of termites. These factors contribute to endangering individual lives, especially living around such an environment. Amidst all these factors, however, little attention has been placed on the artistic and functional qualities of tree roots and their potential to serve as a decorative piece for interior design and as a possible raw material for the artist. Artists such as Samuel Ebo Bentum, Frederick Martey Oko-Martey, John Dahlsen and others have established the practice of stem-root art, however, much has not been seen by way of using such endless transformations and twists pieces to promote an interior design. This creative practice exploits and intensifies the production of tree roots as artistic relevance towards the beautification of interior design. The study was based on the assumption that the cutting of trees for site construction and development has become a predominant factor in Ghana. Besides, the study focused on repurposing wood detritus as a functional concept in interior design. The study, therefore, sought to analyse neem tree roots and their properties for a decorative piece in the interior design.

Tree Root

Trees have a natural form that beautifies the environment. Telkamp (2020: 1) advises that when one is planting trees in the yard, the essence adds natural beauty and offers privacy. It also provides shade that can impact utility costs and helps sustain birds and other wildlife. Visual landscapes of trees of all sizes are important from the context of beauty, hardiness and stature. Tree roots serve a vital purpose as they anchor the stem and help stabilize the soil and prevent erosion. The Chinese artists have established tree roots for art as root carving. It is a traditional Chinese art form that consists of carving and polishing tree roots into various artistic creations (Wikipedia, 2020). It further discusses that:

Root carving preserves natural beauty. Ancient artists created lifelike and vivid works by a special technique using an expression based on the roots' natural forms. This kind of creation is not completely artificial but created by both human beings and nature. Root carving is different from engraving, as it combines peculiarity with ingeniousness. Despite its aesthetic principles, it shares common ground with engraving, at the same time they are applied uniquely. The difference lies in the natural shape of the roots. During the creative process, root carving mostly maintains the natural form of the root, adding some artificial polishing. In other words, root carving is guided by the inherent qualities of the roots, rather than by strictly carving images (Wikipedia, 2020).



In the context of root carving, it is inferred from Green Wood Guild's (2020: 2) statement that hardwood tree roots are the best for carving, rather than softwoods tree roots such as pines and conifers. The characteristics of hardwood tree roots often have a denser grain structure that tends to be nicer to carve. An example is that they absorb less moisture, which is important when making something functional such as a spoon. Considering softwood tree roots such as Lime, Alder, Willow, Poplar, Birch, they are easier to carve as an amateur, making them perfect for practicing. There is more to what makes tree roots easier to carve than how soft it is though. Trees are some of the longest and oldest living things on earth (Bios Urn, 2020: 1). In reacting to this statement, trees are susceptible to breakage. Individuals, who are not creative artists might discard tree branches or stumps as artists can put them to good use. It is not only in the power of recycling but also in the power of upcycling. To Bios Urn (2020: 1), upcycling is a process of converting old or discarded materials into something useful and often beautiful. The tree roots are beautiful in their multifaceted textures and colours. Trees have served their benefit to humanity in several ways. They have been used for furniture, buildings and others. For this reason, there is much that the artists can do in their way to upcycle those beautiful tree roots. Trees possess a significant value that can be used by the artist in diverse ways (Telkamp, 2020: 1; Bios Urn, 2020: 1). Wikipedia contributors (2020) support that tree root as root carving originated as a traditional Chinese art form into artistic expressions. Tree roots have the potential value to serve as a material for sculpture. Its potencies can be derived from its types, sources, uses, finishes and properties.

Sources

Sourcing tree roots that are pruned, cut-offs or on-site processing for artworks can typically be found in the forest, bushes around the household and other commercial ventures such as lumbering and logging. In addition, tree roots in a locality can be sourced from the demolition and construction sites. The tree root identified for the study was a neem tree root. This tree dominates towns and villages all over Ghana. The cultivation of trees such as Neem is a forestry species among the warmer parts of the world. It grows well on the plains. An example is near Ghana's capital, Accra, since the 1920s. It has now scattered all over many areas in Ghana. With their vigorous growth, the neem trees have become Ghana's major source of firewood. Alongside many highways and byways, it is common to see stacks of neem wood awaiting trucking to the cities (Board on Science and Technology for International Development (BOSTID), 1992: 84).

Types and Uses

A tree is used for shade and firewood, and it has very beneficial ecological consequences, including the saving of many indigenous trees that would, in its absence, have been felled for fuel. Cammidge (2020: 1) supports that:

The root crafts in their originality can be made from many different types of roots, depending mainly on the length and pliability. Thyme plants have great roots, textured and tobacco coloured, perfect for tying the uprights of twig obelisks together. It is simply wrapping into a bow to decorate twig wreaths, a birdcage or other rustic craft. Typically, spruce roots have been valued for many crafts, especially baskets made by First Nations people for fruit collecting, catching fish or storage. Larger roots can be used for root planters, filled with a cup or two of soilless potting mix and planted with Jovibarba, Sempervivum or other hardy succulents. Some of the most interesting and beautiful root baskets are made with this unusual natural material (Cammidge, 2020).

Lumen learning (2020: 1) argues that in the root systems, there are two main types: the Dicots and Monocots. The Dicots have a tap root system, while Monocots have a fibrous root system, which is also known as an adventitious root system. A taproot system under the Dicots has the main root that grows down vertically, from which many smaller lateral roots arise as shown in Figure 1. An example is Dandelion; its taproots usually break off when the weed is pulled from the ground; it can regrow another shoot from the remaining root. A taproot system penetrates deep into the soil. In another context, a fibrous root system under the Monocots is located closer to the soil surface, where it forms a dense network of roots that also helps prevent soil erosion (lawn grasses are a good example, as are wheat, rice, and corn). Some plants have a combination of taproots and fibrous roots. Plants that grow in dry areas often have deep root systems, whereas plants that grow in areas with abundant water are likely to have shallower root systems.





Figure 1: Taproot and Fibrous root systems

Ray (2020: 22) shares some of the uses of tree roots to humans as:

Tree prevents soil erosion in the sense that the destruction of forest trees exposes the soil to erosion, which eventually carries the rich topsoil away to the sea. Again, some individuals use roots as a direct source of food. Sweet potato and cassava are common root crops in the Philippines. Yam varieties include ube, tugi, and nami. Carrots and radishes are also used as vegetables. Singkamas is another juicy root that most Filipinos and other tropical countries are fond of. Other examples of roots, used as food, are parsnip, beetroot, and aroids, which belong to different botanical families. Moreover, spices and dyes are obtained for roots. For example, sarsaparilla is a soft drink made from plants like Smilax ornata, commonly known as sarsi. Sarsaparilla is originally made from a blend of birch oil and sassafras, which is the dried root bark of the sassafras trees. The roots are also used as medicine. Different roots are valued for a variety of medicinal uses. One medicinal root is chamomile, which is considered a cure-all. It is used as a sedative for anxiety disorders and relaxation. Another medicinal root is turmeric. Turmeric root can cure a lot of internal organ problems such as arthritis, liver and gallbladder disorders, infections, and stomach problems. Some other roots that are considered medicinal are ginger root, maca root, valerian root, licorice, and coconut root (Ray, 2020).

In Ray's submission, tree roots are very vital for humanity in diverse ways but for the artist, they can serve as a material for sculpture. This is ascertained by Artsy Editors (2013: 1) that, "Whether captivated by their formal beauty or drawn in by their spiritual symbolism, artists have turned to trees for inspiration for millennia". Looking at the uses of roots specifically the tree production in Ghana has been a trade among the people for lumber and logging within a social and economic context. It is no wonder that there had been a phenomenal increase in deforestation and timber business in our environment and these practices have contributed to illegally cutting trees for large and small-scale lumber and logging companies in the country due to individual preferences for income.

Properties

Tree roots have the physical and mechanical properties to withstand the weather and working conditions. The physical and mechanical properties of tree roots for art productions are characterized by their structural integrity and visual attributes (Kamarudin et al., 2019: 113). One of the physical properties is brittleness that implies its sudden failure. This is the property of failure without warning that is to say without visible permanent deformation. It is the reverse of toughness in the sense that a brittle piece of metal has little resistance to rupture after it reaches its elastic limit. A tree is less ductile, in that it implies a fracture with very little deformation. The impact force allows the work to be absorbed without breaking. In other words, it has resilience in the ability to restore the original shape after the termination of the external forces. Its tenacity is the ability of one material to resist penetration and wear from another material. It requires a combination of hardness and toughness to endure a heavy blow (Archiline, 2020: 1).

Some Tree Root Artists

Artistically, tree root art is a composition of tree roots found in the environment. Sculptors like Samuel Ebo Adentwi Bentum, Oko-Martey, John Dahlsen, Tach Pollard and others have exploited tree trunks and roots for



art in diverse ways. In addition, these root artists have been great carvers for a very long time. Therefore, the study introduces some artists who are widely proficient in this trade and turned tree trunks and roots into wonderful sculptural pieces.

Samuel Adentwi Bentum

Samuel Adentwi Bentum a.k.a. Ebo Bentum is an anthropologist, culturist and an art historian. He holds a Ph.D. in African Art and Culture and MFA in Sculpture and Painting all from Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana. As an art educator at Takoradi Technical University, Takoradi, Ghana, Bentum is a practicing artist who works with wood, concrete and acrylic. From a muralist and interior artistic point of view, he has added the following books to his collection, "Chiefdom: The Women's World" and "That Root You Left Behind". Bentum (2014: 1), as cited in Menz's (2014: 1) article, shares his experiences on the Aesthetics and Appreciation of Tree Trunks and Branches into Sketches and Sculptures as his book introduces a way of seeing and experiencing art. To Bentum, over the centuries, nature has been the greatest source of inspiration for the artist. In that favour, tree trunks and branches are comparable natural sculpturing materials that are worthy of adoration and adoption. It is no doubt that nature, in this sense, directs the liberation of the images within these tree trunks and branches. The fundamental concept deduced from his philosophy of truth is the tree trunk, its sources and physical appearances as the basis for his sculptures. Therefore, Bentum's artistry to preserve and present the material is crucial. His style centres on simplified realism that clinches on plain geometric shapes and forms. He uses carving techniques to intersperse the tree bark texture, surface defects and marks from chain saw and machete. His sculptures have titles that reflect the Akan-Fante culture and offer their translation in English as shown in Figure 2. Hence, Bentum portrays the dignity of the African culture through the form and imagery created from these tree trunks and branches.



Figure 2: "Itu a Ennkopen" (Flight to safety)

Frederick Oko-Martey

Tiga African Art (2020: 1) discloses that Frederick Oko-Martey, born on March 23, is a graduate and a former Lecturer of the College of Art at the Kwame Nkrumah University of Science and Technology at Kumasi, Ghana. Oko has exhibited in numerous solo and group exhibitions in Ghana and the USA. His works are widely collected in both private and public collections in Ghana and abroad. He now lives and works in Ghana as a freelance Sculptor, working in wood, stone and panels. He studied sculpture at the College of Art, KNUST, graduating with a Bachelor and Master Degree in Fine Art. He also has a certificate in Foundry Art Practice from Johnson Atelier in New Jersey, USA. He taught Art at the College of Art -KNUST. Working in wood, cement, and bronze, Frederick tries to integrate traditional themes of Ghanaian visual arts into a contemporary idiom. He is particularly interested in recycling tree trunks, branches and other matter left over from the exploitation of nature as provided in Figures 3 and 4. Through the representational, he created a new life in planes; distortions; texture. The joy of creation is that it opens the life of Frederick. His works are widely collected and have been exhibited in Ghana and the USA.



Figure 3: Chiseled rotten wood



Figure 4: Tree trunk

John Dahlsen

Dahlsen is an Australian contemporary environmental artist. He uses found objects, primarily ocean litter plastics from Australian beaches in his work. He was born in 1963. He studied from 1977 to 1979 at the Victorian College of the Arts and in 1989 at the Melbourne College of Advanced Education. "Monumental Environmental Artwork", tells how he uses the trunk and root ball of a camphor laurel tree. He worked on this artwork for over 2 years between 2008 and mid-2010. This monument was initiated with his receiving calls from a local Eco-tourism facility owner, who knew his works. In addition to his art, he also holds a PhD in philosophies. He has exhibited works in many solo and group exhibitions since 1979. Dahlsen lives in Byron Bay, New South Wales, Australia. He won the People's Choice Award in the Artscape Biennial Sculpture Exhibition in 2010. Figures 5 and 6 show his work "Monumental Environmental Artwork" from various angles.



Figure 5: Monumental environmental artwork



Figure 6: Monumental environmental artwork

Wood, Furniture Design and the Interior Space Design

For so long, the significant role of furniture in interior space designing has served humanity in many purposes such as sitting, relaxing, sleeping and eating (Brooks, 2021: 5). Kaptan (2001: 26), as cited in Yıldırım et al.'s (2021: 18) article, states that "furniture is one of the indispensable elements of interior design". Yavuz Öden (2020: 163) supports that, "throughout its history, design is intertwined with daily life and culture". In practice, interior space design requires the integration of original, innovative and stylistic furniture designs. In that sense, creative artists like architects, interior and furniture designers who want to create their unique style in a particular room use wood furniture in diverse ways (Girltalkhq, 2019: 9). In this view, wood is a natural, traditional, beautiful and always a modern interior design material. From this context, interior space design integrates wood furniture design can be considered as one of the main tools of interior space design (Girltalkhq, 2019: 1; Russ, 2017: 1). Tree root furniture has a striking beauty and brings forth a twist and rustic shape of



100% natural material. The style of tree root furniture provides interior spaces with a touch of freshness and nature, also elegance and simplicity (Jonson, 2021:2; Geiger, 2012: 1). The artists or designers consider all the design aspects in tree root furniture and their designs maintain the primary concepts and ideas that inspire them. Tree roots involve ideas of beauty, elements and principles of design, design theory, material properties, fabrication techniques, ergonometric and the surrounding of spatial context. The design techniques of tree root involve aesthetics (the meaning of form) and the principles of design (i.e. unity, harmony, hierarchy, spatial order). Again, its design processes and design matters include sketching, iterative studies, digital enhancement, sustainability, spatial setting in the interior space. Functionality in furniture and interior design practices is all about finding the purpose of the material. Wood (tree root) as a material has evolved by reflecting various designs for decoration. Wood has been used in various forms of furniture design in the interior space. Some production concepts of furniture design in the interior space are shown in Figures 7 to 11.



Figure 7: An integration of wood furniture design in the interior space design



Figure 8: Wooden dining furniture, rectangular table, and modern chairs



Figure 9: Burnished teak root coffee table



Figure 10: Round teak root coffee table



Figure 11: Root furniture from Indonesia



METHODS

This section describes in detail the methods, tools, materials and equipment used in the study. As a studiobased inquiry, the study employed the aesthetico-action model with a narrative method on the techniques and procedures for executing the studio work. The aesthetico-action model is expressed as "a cyclic, open-ended, active process that involves observing, reflecting, planning, acting, observing and reflecting" (Marshall, 2010: 80). This practice explains the praxis in art and design as a research project in which creative practice plays the most important role in the cluster of the research methods used (De Freitas, 2002: 1). This studio-based research design was considered appropriate to emphasize the repurposing of tree roots left in the environment for artistic and functional relevance in interior design. This studio practice challenged the study to observe, reflect, plan and create decorative artworks using tree roots (stump) for interior spaces. This practice brings out the relevance of a studio-based approach as a basis for producing such artefacts, because the purpose and aim of the studio-based research are to contribute knowledge in the creative field (Newbury, 1996: 215; Sullivan, 2006: 19).

Tools, Materials and Equipment

Hand tools, materials and equipment for the execution of the artefacts have been used in the study. This tools consist mainly of hammer, saw or file for performing and facilitating mechanical operations on the tree root. These tools were the foundations of the accuracy of the works by ensuring the artist to achieve more precise and accurate angles and curves (Taunton Press, 2018: 1).

Tools

The following tools were used for the creation of the artefact:

Shovel and spade: They were used for digging around the stump to uproot it.

Pickaxe: It was also used in digging the tree root out of the soil. It was also used to remove the soil and stones from the root.

Chisel and mallet: They were used together to aid in the removal of the root bark.

Tape measure: It was used to take accurate measurements of the work.

Spirit level: It was used to determine the flatness of the surface and the base of the work.

Angle grinder: It was fixed with a wooden disc to trim the shape of the tree root into the desired form.

Die grinder: It was used for sanding and smoothing out surfaces of the tree root.

Material

Material plays an important role in the production of art, because attaining a good sculpture depends on the choice of material. Materials used for sculptural productions can be traditional or non-traditional depending on the physical substance (such as clay, wood, stone, metal, fiberglass, scrap metals, plastics, and others) (Barrie, 2006: 1). The basic material used for the creation of the artefact in this study was a neem tree root (stump). The following materials were used for the production of the work.

Neem tree root (stumps): It is the main material used for work.

Abrasive paper: It was used to smoothen the surface of the work.

Dursban: It was used as a chemical treatment to prevent termites and other insects from infesting the tree root.

Petrol: It was mixed with Dursban chemical for treating the root from decaying.

Lacquer: It was used as a finishing agent for the tree root. It also served as a protective agent for the sculptural piece produced.

Equipment

The following equipment were used for the execution of the work:



Chainsaw: It was used for cutting and shaping the tree root (stump) into the desired shape.

Air compressor: It was used for blowing dust from the work.

Knapsack sprayer: It was used for spraying the treatment mixture on the root.

Design Brief and Concept Development

A collective involving design outlines and concepts were considered to establish this exploration with neem tree root as a decorative piece for interior design. This process of creating a design concept led to a careful consideration of a good design. In the context of interior design, the study solves a problem to satisfy the interior decorating space by repurposing the leftover and byproducts of tree roots in the art-making process that artists do not discard for several compelling reasons when it comes to material diversification. The provision of the design concept gives direction and the need to make design decisions (Wolfe-Rizor Interiors, 2020: 2). Design brief and concept development help create a roadmap for a design and lead to choices in aesthetics, type of design, colour, and other considerations. The design concept was visual. Visual design concept puts specific ideas of making the decorative piece a little more concrete as ideas are put on paper. The creation of a design brief and concept development in a computer-aided design platform meant dealing with virtual sketches and manipulating digital software such as CorelDraw. The use of the CorelDraw software tool facilitated an easier rendition of drawing to ensure the final output of the work. Regardless of the software used, the most important task was deciding what content to include. After all, a design brief was valuable in this study as it captured the correct, relevant information on the work. Figures 12 and 13 show the design brief and concept development of the artefact with Computer-Aided Design (CAD).



Figure 12: A design concept



Production Process

Securing and Preparing the Material

The tree root was dug out of the soil then transported to the studio. It was prepared by cleansing the sand and other dirt with the pressure of water. Removing the stones from the tree root was done with a pickaxe. This process was a very difficult part, however important that no stone was left to damage the chainsaw and carving tools. The tree root was left in its natural shape rather than being carved. The securing and preparing stages of the tree root chosen for the work are shown in Figures 14 and 15.



Figure 14: A design concept

Figure 15: A design concept

Treatment and Finishing Processes

The treatment of tree roots with an application of chemical agents like Dursban and petrol is very crucial. The application of chemicals mixed with water onto the tree root prevents decay and termites from destroying the work. After the mixture, the spraying was done by using a knapsack sprayer. The work was finalized by spraying wooden lacquer on every corner of the tree root. The lacquer gave the work lustre effects. Figure 16 shows these processes altogether.



Figure 16: A design concept

Appreciation of the Artefact: Context, Content and Philosophy

The work is titled "Inner beauty". It is chosen from the aphorism that "when the root is deep, there is no reason to fear the wind". In other words, giving life back to the root is the art of repurposing the beauty of the wood detritus. In this context, the existence of tree roots left or buried in the ground would sooner or later decay or become firewood for its passers-by. Through the repurposing of the material, this content would remain forever as an artefact without being destroyed. The artefact is made of a neem tree root. It has a dimension of 156 cm x 128 cm x 77 cm with wood lacquer finishes. The tree root artefact has twists and turns and flows of the natural form of the tree root. The philosophical expediency is clamoured on the features of the tree root. The work interprets the dynamism to give life and the endless changes in the materiality of art. The rough appearance is associated with the artistic ideas of oddness and uniqueness. It also communicates the full awareness of repurposing found objects in the environment as artists should not see found objects as junk but good qualities for artworks. In other words, the artefact as a wood detritus transforms the environment by bringing back the old into new as an interior beautification.



Figure 17: Inner beauty, Tree root (Stump), 156x128x77cm, Wood Lacquer on tree root



Figure 18: Tree root centre table in the interior space

CONCLUSION

The motivation for this study was based on the gap identified in the practice of leaving tree roots in soil or environment. This practice has become an impediment, such as harbouring wild reptiles like snakes, iguanas, and the infestation of termites. These factors contribute to endangering individual lives, especially living around such an environment. Material diversification in art brings about different methods and styles of practice. Little has been considered in line with the production of tree root as a functional object for interior decoration. It is, for this reason that materials like a tree roots that can bring about new ideas ought to be explored. The study gives a systematic studio-based approach to the practicality of how a tree root artwork can be created using various tools, materials and equipment. There has been enough evidence from the study to conclude that tree root has such a natural beauty that can be converted into sculptural or functional objects. The artistic characteristics of tree roots have such an inherent nature, which enables good designs without needing any further operation. It was appropriate to use design brief and concept development with computeraided design software (CorelDraw) to achieve the output of the study as it was evident in the creation of the tree root centre table for the interior design space. Based on the discussion, the following recommendations are made to improve the interior space design practice and development by using wood detritus as part of furniture design for material diversification of art. From the aesthetics perspective, the artists should focus on considering tree roots (stumps) left in the soil and on the environment as a material for art production. The policymakers such as the forestry commission and all stakeholders should collaborate with artists to make policies that will make tree roots or stumps more meaningful to environmental beautification.

Acknowledgements

We express our sincere gratitude to Joel Baako Nzeh for his assistance during the study. We are also grateful to the Department of Sculpture Technology and the Department of Interior Design, Takoradi Technical University, Takoradi-Ghana.

Authors' Contributions

The authors contributed equally to the study.

Competing Interests

The Authors declare no conflict of interest.



REFERENCES

Archiline. (2020). Wood main physical properties. *Own Wooden House*. <u>https://ownwoodenhouse.com/index.pl?act=NEWSSHOW&id=2011062001</u> (10.08.2021).

Artsy Editors. (2013, November 13). The artist and the tree. <u>https://www.artsy.net/article/editorial-the-artist-and-the-tree (10.08.2021)</u>.

Barrie, B. F. (2006). A sculptor's guide to tools and materials (Second Edition). Palm City, A.B.F.S. Publishing.

Bios Urn. (2020, April 20). 10 Clever things to do with fallen tree branches and tree trunks. https://urnabios.com/upcycling-fallen-tree-branches-trunks/ (10.08.2021).

Board on Science and Technology for International Development (BOSTID). (1992). *Neem: A tree for solving global problems*. Washington, D.C: National Academies Press.

Brooks, S. (2019, June 28). Importance of furniture in interior design. *Wanderglobe*. <u>https://www.wanderglobe.org/importance-of-furniture-in-interior-design/</u>(10.08.2021).

Cammidge, J. (2020). Root crafts: Using roots for crafting and art. *Bluefoxfarm*. <u>https://www.bluefoxfarm.com/root-crafts.html</u> (10.08.2021).

Cheng, K. (2018, December 29). Root sculpture reinvigorates a physically-challenged life. *Ichongqing*. <u>https://www.ichongqing.info/2018/12/29/root-sculpture-reinvigorates-a-physically-challenged-life/</u>(10.08.2021).

De Freitas, N. (2002). Towards a definition of studio documentation: Working tool and transparent record. *Working Papers in Art and Design, 2.*

https://www.academia.edu/3295026/de_Freitas_N_2002_Towards_a_Definition_of_Studio_Documentation_ working_tool_and_transparent_record_Working_Papers_in_Art_and_Design_Vol_2_ISSN_1456_4917_ (10.08.2021).

Geiger, O. (2012, April 14). Tree root furniture. *Natural Building Blog*. <u>http://www.naturalbuildingblog.com/tree-root-furniture/</u>(02.09.2021).

Girltalkhq. (2019, May 21). The role of furniture in interior design. *Girltalkhq*. <u>https://www.girltalkhq.com/the-role-of-furniture-in-interior-</u>

design/#:~:text=%20The%20Role%20Of%20Furniture%20In%20Interior%20Design,When%20designing%20bedrooms%20that%20display%20outstanding...%20More%20 (02.09.2021).

Green Wood Guild. (2020). Sourcing wood. *The Green Wood Guild*. <u>https://thegreenwoodguild.com/sourcing-wood/</u> (10.08.2021).

Jonson, J. (2021, March 09). Wood as the best option in interior decoration – 2021 guide. *Chart Attack*. <u>https://www.chartattack.com/wood-as-interior-decoration/(02.09.2021)</u>.

Kamarudin, Z., Othman, R. & Nazuki, S. N. (2019). Scientific study of physical and chemical properties of elemental carving for woodwork preservation. *International Journal of Recent Technology and Engineering (IJRTE)*, 7(6S2), 113-120. <u>https://www.ijrte.org/wpcontent/uploads/papers/v7i6s2/F10170476S219.pdf</u> (02.09.2021).

Kaptan, B. B. (2001). İç mekânın niteliğini belirleyen ögelerin görsellik kazanmasını sağlayan oluşumlar. *Anadolu Sanat, 11*, 113-130.

Kucirkova, A. (2018, July 13). Using wood in interior design in 2018. *Faburous Architecture and interior design*. <u>http://www.faburous.com/interior-design-ideas/using-wood-in-interior-designing/</u> (02.09.2021).

Lumen learning. (2020). Plant form and physiology: Root. *Lumen Learning*. https://courses.lumenlearning.com/boundless-biology/chapter/roots/ (10.08.2021).

Marshall, C. (2010). A research design for studio-based research in art. *Teaching Artist Journal*, 8(2), 77-87.



Menz, K. (2014, March 22). Aesthetics and appreciation of tree trunks and branches into sketches and sculptures. *News Ghana*. <u>https://newsghana.com.gh/aesthetics-appreciation-tree-trunks-branches-sketches-sculptures/</u> (10.08.2021).

Newbury, D. (1996). Knowledge and research in art and design. Design Studies, 17, 215-220.

Oko-Martey, F. M. (1996). *Stem-branch and stem-root formation for sculpture*. Unpublished Master of Fine arts thesis, Postgraduate Studies, Kwame Nkrumah University of Science and Technology, Kumasi. <u>http://ir.knust.edu.gh/handle/123456789/3207</u> (10.08.2021).

Ray, J. C. (2020, May 9). How do roots work? Functions, structure, and human uses. *Owlcation*. <u>https://owlcation.com/stem/Roots-Functions-Structure-and-Uses-to-Man</u> (10.08.2021).

Russ, E. (2017, September 04). Best types of wood for furniture and modern interior design. *Lushome*. <u>https://www.lushome.com/best-types-wood-furniture-modern-interior-design/165425</u> (02.09.2021).

Sullivan, G. (2006). Research acts in art practice. Studies in Art Education, 48(1), 19-35.

Taunton Press. (2018). *Woodworking with hand tools: Tools, techniques & projects / Editors of Fine Woodworking*. Newtown, CT: The Taunton Press, Inc.

Telkamp, M. (2020, March 30). Know your tree roots. *Hgtv*. <u>https://www.hgtv.com/outdoors/flowers-and-plants/trees-and-shrubs/know-your-tree-roots</u> (10.08.2021).

Tiga African Art. (2020). Fredrick Oko Martey. *Tigaafricanart*. <u>https://www.tigaafricanart.com/oko-martey/</u> (10.08.2021).

Wikipedia contributors. (2020, April 24). Root carving. In Wikipedia, *The free encyclopedia*. https://en.wikipedia.org/w/index.php?title=Root_carving&oldid=952937080 (10.08.2021).

Wolfe-Rizor Interiors. (2020, May 02). Concept development. *Wolferizor*. https://www.wolferizor.com/service/concept-development (10.08.2021).

Yavuz, Öden, H. (2020). İllüstrasyon sanatının çocuklara yönelik iç mekân ve mobilya tasarımında kullanılması: uygulama örnek ve teknikleri. *IDA: International Design and Art Journal*, 2(2), 161-175.

Yıldırım, K., Yıldırım Kaya, N. N., Deli, İ., Gökbulut, N. (2021). Konut mekânlarında kullanılan mobilya aksesuar ve gereçlerinin kullanıcı memnuniyetine etkisi. *IDA: International Design and Art Journal, 3*(1), 17-24.

Figure References

Figure 1: Taproot and Fibrous root systems: Gupta, M. (2021). The root of plants (With diagrams): Botany. Biology Discussion. <u>https://www.biologydiscussion.com/root/the-root-of-plants-with-diagrams-botany/49156</u> (10.08.2021).

Figure 2: "Itu a Ennkopen" (Flight to safety): Bentum, S. A. (2013). Aesthetics and appreciation of tree trunks and branches into sketches and sculptures. Trafford Publishing.

Figure 3: Chiseled rotten wood: Oko-Martey, F. M. (2015, January 15). Chiseled rotten wood. Instagram. <u>https://www.instagram.com/p/yVlxgquc2b/</u> (10.8.2021).

Figure 4: Tree trunk: Oko-Martey, F. M. (2019, January 18). Tree trunk. Instagram. <u>https://www.instagram.com/p/B7eChiWlUpv/</u> (10.08.2021).

Figure 5: Monumental environmental artwork: Croak, J. (2020). Trees a crowd: John Dahlsen, Monumental environmental artwork. Artnet. <u>http://www.artnet.com/magazineus/features/croak/trees-in-contemporary-art-1-31-12_detail.asp?picnum=12</u> (10.08.2021).

Figure 6: Monumental environmental artwork: Dahlsen, J. (2011, December 29). Monumental environmental artwork. John Dahlsen. <u>https://johndahlsen.com/monumental-environmental-artwork/tree-</u>



stump-environmental-

artwork/#:~:text=ACCLAIMED%20Byron%20Bay%20artist%20John,ball%20standing%20threemetres%20high (10.08.2021).

Figure 7: An integration of wood furniture design in the interior space design: Terramai. (2021). Experiential design and interior spaces: The new movement that is shaping the way we connect. *Terramai*. <u>https://www.terramai.com/blog/experiential-design-interior-spaces/</u> (02.09.2021).

Figure 8: Wooden dining furniture, rectangular table, and modern chairs: Lushome. (2021). Best types of wood for furniture and modern interior design. *Lushome*. <u>https://www.lushome.com/best-types-wood-furniture-modern-interior-design/165425</u> (02.09.2021).

Figure 9: Burnished teak root coffee table: Zaklyn. (2021, September 09). Teak root coffee table terrain ideas. *Pictpico*. <u>https://pictpico.eu.org/teak-root-coffee-table-terrain/</u> (02.09.2021).

Figure 10: Round teak root coffee table: Zaklyn. (2021, September 09). Teak root coffee table terrain ideas. *Pictpico*. <u>https://pictpico.eu.org/teak-root-coffee-table-terrain/</u> (02.09.2021).

Figure 11: Root furniture from Indonesia: Geiger, O. (2012, April 14). Tree root furniture. *Natural Building Blog*. <u>http://www.naturalbuildingblog.com/tree-root-furniture/</u> (02.09.2021).

Figure 18: Tree root centre table in the interior space: Oko-Martey, F. M. (2019, January 24). Centre table with glass top. Instagram. <u>https://www.instagram.com/p/BtBMmytFWU-/</u> (20.02.2021).