THE CREATIVE ENVIRONMENTS OF HUMAN BEINGS AND ANIMALS: WHO IS THE ARCHITECT AND WHAT IS ARCHITECTURE?

Obiadi, Bons N., Onochie, A. O.
Department of Architecture, Faculty of Environmental Sciences
Nnamdi Azikiwe University, Awka, Anambra State, Nigeria

Uduak, Peter Umo.
Department of Architecture, Faculty of Environmental Studies
University of Uyo, Akwa Ibom State, Nigeria

Abstract

A linear definition of Architecture may never be possible given the ample ramifications of Architecture as a discipline that straddles diverse human experience. A lot of the definitions were based on interests, foci, techniques and materials and the profession of architecture appears to have been cornered by few individuals and groups, qualified as "architects" based on legal interpretation of the word, even when they may not be enhancing the profession. It can be argued that Architecture is not a business, nor a career, but a crusade and a consecration to a joy that justifies the existence of the earth, but its primary concern remains the design and construction of buildings, the style in which a building is designed and constructed, and the complex structure of something. It is both a process and a product. It is a derivative as well as the process of planning, designing and constructing forms, spaces and the corresponding accommodating ambience. However, these definitions do not include the animal and other creative works of architecture. Architecture is broad and all-encompassing: the works of animals, auto-mechanics' reconstruction works, hair designers and their designs, among others. However, these works of architecture have often been excluded and unduly undermined in the definitions of architectural works despite the fact that animal architecture constitute part of most communities' tourist parks and centers. This paper hopes to engage this interesting perspectives that border on definitions.

Key Wards: Architecture, birds, hair, infrastructure, growth, development, buildings

Introduction

Architecture is the total environment made visible (Langer, 1953). But, by whom? And that is the question. As human beings, we have our architecture and animals have their architecture too. However, human beings have, for generations, looked at architecture with interest in human satisfaction and have not given enough attention to animals and their unique architecture. It is not arguable, architecture has always been diversified covering human beings and their architecture, animals and their architecture, urban areas and the urban architecture that are sometimes, good and sometimes, bad. Good in the sense that, the architecture of the urban areas are good and bad in the sense that, the good architecture of the urban areas are abused, deformed, altered with unwanted and unauthorized additions, structures, littering, dumplings and filled with abandoned and decaying vehicles, security gates, etc. Yet, scholars have from generations to generations, defined architecture to suit the interest of the human beings without adequately addressing the definitions to include animal and urban front architecture. Agbonome and Obiadi (2015), extensively detailed

the definitions of architecture from different perspectives and views and out of their explanations that the present authors extracted greater part of what is presented in this section, as it were an account of a broader view in the definitions of architecture and who the architects are.

Architecture may never be fully defined because the parameters for the definitions are wide and endless. Attempts, however, have been made at defining architecture in the past. A lot of the definitions were based on interests, foci, techniques and materials. The profession of architecture appears to have been cornered by few individuals and groups, qualified as "architects" based on legal interpretation of the word, even when they may not be enhancing the profession.

Architecture evolves in and with time. The evolution implies that architecture changes over time and can be traceable to works produced by previous generations of architects (Brown, 2006). Each epoch offered something new while modifying its antecedents because architecture continues to be influenced by past civilizations even as it captures and midwives the birth of new ideas. From Greek to Roman and Contemporary architectures, the evolution has remained integral, yet there are elements that have remained conservatively canonical. According to CITE (2013), Architecture is the art of building in which human requirements and construction materials are related so as to furnish practical use as well as an aesthetic solution, thus differing from the pure utility of engineering construction. Neufeldt et.al (1993) looked at Architecture as a science, art, or profession of designing and constructing buildings, bridges, a building, or buildings collectively; a style of construction [Elizabethan architecture] design and construction {the architecture of a beehive}; any framework, system, the design and interaction of components of a computer or computer system. While it is not the intent of this paper to get into the detailed evolution of architecture, it is important to understand architecture, how it progressed and the influences experienced in relation to human environment and technology. As Allegretti (2011) indicated, architecture is not a business, not a career, but a crusade and a consecration to a joy that justifies the existence of the earth. It is certain that architecture has undergone transformations in time and at the same time, has defined many histories, but its primary concern remains the "design and construction of buildings, the style in which a building is designed and constructed, and the complex structure of something (Soanes, 2001). From the Greek perspective, arkhitekton (which draws from all the components from "chief" and "builder, carpenter, mason") can mean: "the art and science of designing and erecting buildings and other physical structures, the practice of an architect, where architecture means to offer or render professional services in connection with the design and construction of a building, or group of buildings and the space within the site surrounding the buildings that have as their principal purpose human occupancy or use; a general term to describe buildings and other structures; and a style and method of design and construction of buildings and other physical structures" (Teacher, 2014).

These definitions address all aspects of designing human environments and habitation by architects. They present architecture in a broader perspective involving all aspects of design and construction. Architecture is both a process and a product. It is a derivative as well as the process of planning, designing and constructing forms, spaces and the corresponding accommodating ambience. Architecture involves functional, technical, social, and aesthetic considerations (Teacher, 2014). It is a collaborative process where materials, technology, labor and reason interact to create a physical form. The process also involves drawings, specifications, estimation, scheduling, administration and management of construction. These are anchored on the architect who is empowered by law and training to design, supervise the erection of buildings (Dale, 2005).

However, in the animal kingdom, they execute beautiful creations without been empowered bylaw and trained to design, supervise the erection of their buildings. Hence, in human kingdom, it is the responsibility of an architect to plan a project, coordinate the activities of professionals needed in the construction of building structures. Corroborating this, Uji (2010) stated that, all over the world, the architect continued to be recognized as the central figure in the building industry without whose initiative in design and specifications there would not arise any need for the input of the other professionals in the first place. The acceptance of the architect as leader of the building team, even if grudgingly, has not been repudiated. While this is true, in the animal kingdom and animal architecture, who is the leader in their building industry? That answer may never be known. Animals build according to their species, life styles and needs. Some occupy the ones built by others (snakes for example, plates 1, 46 and 47).

Plate 1. A bush rat hole located at science village Unizik, Awka, Anambra State.
Source: Nnamdi Victory's field work.

While reviewing the roles architects play in the building industry, Uji (2010) asserted that architecture is the means through which man intervenes in the natural environment and reshapes or refashions the physical environment for the purpose of sheltering himself from the elements, while he carries out activities that help him meet the biological, social, cultural, physical and spiritual needs. This function encompasses the organization of spaces and the enclosure, definitions or delineation of such spaces with physical features or structural components, in accordance with rules, norms, values or socio-cultural and economic characteristics of the people. Thee equally apply in the animal architecture except, we have not paid attention and credited them. According to Teacher (2014), the earliest surviving written work in the early 1st Century on the subject of Architecture - De architectura, by a Roman architect, Virtruvius, indicated that a good building should satisfy three basic attributes:

- Durability - it should stand up robustly and remain in good condition.
- Utility - it should be useful and function well for the people using it
- Beauty - it should delight people and raise their spirits.

These attributes listed by Vitruvius have remained till date. Also in that era, Teacher (2014) pointed out that, Leone Battista Alberti who supported Vitruvius, went further in his essay - De Re Aedificatoria, to declare that beauty is a matter of proportion supported by ornaments.

Following Alberti's idea that beauty comes from properly proportioning buildings and that, "the rules of proportion were those that governed the idealized human figure- the Golden mean," this important aspect of beauty or aesthetics should be integrated in an architectural design process and not superficially added to improve its products.

The debate on what architecture is and what constitutes a good architecture continued into the 19th Century when, according to Teacher (2014), an English art critic, John Ruskin (1849), averred in his Seven Lamps of Architecture, that "Architecture was the art which so disposes and adorns the edifices raised by men ... that the sight of them contributes to his mental health, power, and pleasure." He believed that the aesthetics of a building is mostly important because it creates the first impression that is healthy to the viewer, and "a building is not truly a work of architecture unless it is in some way adorned." In his views, a building could be well-constructed, proportions well resolved, materials properly used and the building very functional, but if it is not admired and pleasant to users, it is not good architecture. Again, in the 20th Century, Le Corbusier made a sharp and simple clarification between "ideals of architecture and mere construction" when he indicated that "you employ stone, wood, and concrete, and with these materials you build houses and palaces: that is construction, ingenuity is at work. But suddenly you touch my heart, you do me good. I am happy and I say: This is beautiful. That is Architecture (Teacher, 2014). In the animal kingdom, their creations and architecture are increasingly admirable, pleasing and enjoyed by them and us, the human beings. In some cases, forming part of our parks and tourism (termite hills and bird nests, plates 26 to 33, 35 to 51, 54 to 56, 61 to 77**)**Architecture is not just for Architects; it is for people, and whatever creative instincts and theories architects may have, it is through the senses that architecture can be felt (Allegretti, 2011).

Following all the definitions of architecture cited, architects have narrowed the field exclusively to buildings not minding, according to Uji (2010) that out of all known disciplines of learning, architecture appears to be the only one that derives its existence from all the spheres of the learning process. It is a science, an art domiciled in the environment and drawing its essence from the humanities. The inter-disciplinary nature of Architecture profession requires being abreast of developments in other related fields of study (Allegretti, 2011).

The focus of this paper is the architecture of human beings and animals, be it buildings, refuse dumps, buildings in disrepair, bad business signs, bird nests, anthills, etc. According to Hiller (1996), the relationship between human beings and space was, at a deep level, governed by two laws: laws of spatial emergence, by which the larger-scale configurational properties of space followed as a necessary consequence from different kinds of local physical intervention; and laws of generic function by which constraints were placed on space by the most generic aspects of human activity, such as the simply facts of occupying space and moving between spaces. Hiller (1996) further states that, to a significant extent, the spatial forms of cities are expressions of these laws, and that if we wish to understand them we must learn to see them as "things made of space," governed by spatial law whose effects, but not whose nature can be guided by human agency. One implication of this argument will be that twenty-century design has often used spatial concepts for urban and housing areas which fall outside the scope of these laws, creating space which lacks elementary patterning which these laws have normally imposed, in some shape or form, in the past. If as is argued here, such laws exist, then it will be necessary to revise current concepts of the well-ordered city back in the direction implied by the laws.

Architecture has equally been defined as, the design and construction of buildings, the style in which a building is designed and constructed, and the complex structure of something (Soanes, 2001).The communities urban environmental fronts littered with garbage dump sites form default architecture that graced most cities, forming part of that city's architecture. Looking at architecture from a broader perspective, it covers all aspects of designs from the urban design to the construction and finishing aspects. Architecture is both the process and product of planning, designing and constructing form, space and ambience that reflect functional, technical, social, and aesthetic considerations (Architecture, 2011). In general terms, it is a collaborative process where materials, technology, labour and mind come together to create a physical structure or form.

Considering all these definitions, it would be agreed that the dumping and concentration of urban refuse dumps in major areas of the communities are the work of architecture by human beings although; it could be argued that they are negative architecture. However, in a broader perspective, the rapid increase in municipal solid waste is a significant global problem. Municipal solid waste is what everyone else calls garbage. It's about bottles, cans, disposables, diapers, uneaten food, scraps of wood and metal, worn-out tires, and used-up batteries, papers and plastic packages, boxes, broken furniture and appliances, clippings from our lawns and shrubs-the varied human refuse of our modern industrial society according to Porter (1989). As the Organization for Economic Cooperation and Development (1976) states, Population growth and increasing per capital output have led to an increasing generation of goods, and hence of waste. Also increasing per capita income and changing patterns of consumption have resulted in materials previously regarded as useful now being discarded. In short, per capita waste generated has been rising sharply, leading to increased disposal cost; there is no indication that this trend would significantly be reversed in near future unless appropriate measures are taken. Additionally, location changes such as the continuing migration of people to urban Areas, and the concentration of livestock into intensive production units, exacerbate local problems of waste disposal. This resulted in hips of municipal waste dump sites seen in urban areas and city centers yet, forming part of the architectural front of the areas (solid waste dump sites, plates 2 to 7).

Ukpong and Udofia (2011) note that in Nigeria, a major feature of the urban environment, particularly from the beginning of the oil boom in the 1970's was the rapid takeover of the cities by all kinds of waste. Most states capitals and other large cities are littered with solid waste (plates 2 to 7) despite the presence of state and local government-owned waste management agencies including private waste collectors (Ukpong and Udofia, 2011). Asante-Duah et al. (1995, 232) note that in Nigeria, heaps of refuse and garbage are a common sight in most state capitals and other urban areas. The shapes and heights of these wastes form the default architecture of those solid waste dumps and their continual expansion deforms the architecture of the areas.

Plate 2. Itire Road, Surulere, Lagos dump site
Source: Author's field work (1996)

Plate 3. Fegge, Onitsha dump site
Source: Author's field work (1996)

Plate 4. Broad Street, Lagos dump site
Source: Author's field work (2012)

Plate 5. Randle Street, Surulere, Lagos site
Source: Author's field work (2012)

Plate 6. Surulere, Lagos canal (behind Fountain School) filled with plastic materials
Source: Author's field work (2012)

Plate 7. Owerri dump site
Source: Don Emeka Anetoh (2013)

Aim of the article

It is the primary aim of this paper to detail and document the bias and the focus of architects and researchers in concentrating and narrowing the definition of architecture to buildings and architects, to human-beings licensed by law to practice architecture. The exclusion of other creative works including, but not limited to computer designs, vehicles, clothing, hair designs and designers and animal creations have left a lot of unanswered questions as to the proper definition of architecture and who is really the architect. It is equally, to point out that, architecture is broad and should not be narrowed. It should include the creative work of the municipal refuse dumps in the communities, defacing the architecture of the areas, hairstyles, clothing designs, houses designed and built by animals, etc. It also, highlights the domination of the use of the title "architect" by professionally trained architects leading to the use of the title by automobile mechanics, panel beaters, wheelbarrow builders, etc. The questions are: 1. Are animals not architects? 2. Are refuse dump sites not architectural work, be it default or not? 3. Are bird nests,

termite and ant hills not architectural works? 4. Are hair designers not hair architects and are hair designs not architectural?

Research Methodology

The authors adopted content base analysis (secondary data sources), where they carefully analyzed and interpreted works of other authors and used them in buttressing their points as applied to the issue at hand, "the creative environments of Human-beings and Animals: who is the Architect and what is Architecture?" The topical issues of focus are the creative environments of the human-beings and animals and who is the architect and what is architecture? Or better said, the acceptance of other creative works as the works of architecture and not only the works of human architects to be known and recognized as architectural work. As such, the authors laid emphasis on qualitative research method that considered previous works on the subject matter.

Findings

From the prehistoric to the present day, women have designed and wore beautiful hair styles, carefully designed to meet their desires. According to Odusanya (2018), Ghana braids will instantly make everyone fall in love with them. They are versatile, neat, and fashionable, while also preserving the original African spirit. There is such a huge variety of Ghana weaving hairstyles that you could always wear in everyday life. If you thought there was only one way to braid your hair, you were completely mistaken. Ghana cornrows are one of the most popular Nigerian hairstyles, and they definitely drive people's attention to whoever is wearing those (plates 8 to 10). Besides, they are not only pretty, but also extremely protective against different environmental factors. All in all, if you have long hair that could easily be braided, Ghana weaving should be your solid number one choice. Some hairstyles suit the ladies with round face, while some are good for women with oval face shape. Theoretically, and as applied in the architecture of the buildings and structures, the hairstylist analyzed the facial features of their clients to determine the best hairstyle for them. The designed hairs are usually, proportionally worked out to fit the individual wearing the hair and according to Le Corbusier, you touch my heart, you do me good. I am happy and I say: This is beautiful. That is Architecture" (Teacher, 2014), but in this case, the architecture of the hair and, that is beautiful, that is Architecture.

Plate 8. African ladies hairstyles
Source: Odusanya, Rachael (retrieved June 17, 2018)

Plate 9. African ladies hairstyles
Source: Odusanya, Rachael (retrieved June 17, 2018)

Plate 10. African ladies hairstyles
Source: Odusanya, Rachael (retrieved June 17, 2018)

Arshiya (2018), started her discussion of hairstyle with, "let's kick off this list with a bang with this gorgeously embellished cornrows style. The highlight of this hair look is the singular cornrow that runs down the center of the model's head, from which shoot out all the cornrows from the sides. Hair extensions have been fed into the cornrows and embellished with beads in a variety of shapes and colors to make this a look fit for a princess (plates 11)."

Plate 11. African ladies hairstyles
Source: Syeda, Arshiya (retrieved June 17, 2018)

Plate 12. African ladies hairstyles
Source: Syeda, Arshiya (2018).(retrieved June 17, 2018)

Whoever said that you cannot sport a protective style on your wedding day was so wrong! The stunning bride pictured above (plate 12) has gone for two simple diagonal cornrows on either side of her head and left her natural hair loose at the back to create a unique half up/half down look. To complete the floral queen vibe of the look, red carnations have been used to adorn the crown of her head (Arshiya, 2018).

If you define your style as quirky and "out there", here's a style that may pique your interest. While thin cornrows that contain most of the natural hair have been done up in a horizontal manner, the fed-in braids go from the front to the back (plate 13). The think ginger braids have then been tied up into a high ponytail to create a look that is especially suitable for an athlete (Arshiya, 2018), not in doubt, a creative architectural hairstyle.

Plate 13. African ladies hairstyles
Source: Syeda, Arshiya (2018). (Retrieved June 17, 2018)

Hop onto the white hair bandwagon with this side parted cornrows style that is nothing if not insanely awesome. With its off-center parting and combination of thick and thin cornrows, there is nothing that can stop you from being at the top of the style game. And don't worry, you don't really need to bleach your hair white to sport this look (plate 14). All you need are white hair extensions (cantilever in building architecture) and you're good to go (Arshiya, 2018)! This is emphasis on hair design and rendering for the comfort of the wearer and pleasing to the admirers (architecture of the hair).

Plate 14. African ladies hairstyles
Source: Syeda, Arshiya (2018). (Retrieved June 17, 2018)

From the above presentations, it is obvious and not in doubt, that hair designs and styles are architectural however, the question remains, are hair designers architects? The question may never be answered if the law keeps protecting the "title, architects" to a professionally trained architects, limited to practice architecture. Another design and constructed house worthy of mention, is a sick woman's house at Isiagu, Ebony State (plate 15), designed and built by her with community wastes (recycled materials as could be seen from urban poor settlements in the urban areas). The building constructed with mostly empty cement bags has a door, windows and well ventilated for her comfort. Yet, she is not an architect neither is she a builder, but designed and built her comfortable house.

Plate 15. A mad woman's house at Ishiagu, Ebonyi State built with waste materials.
Source: Ogbonna Jonadab (April, 2018)

From the sick woman's house to the buildings designed and built by animals (plates 16 to 68), it is not arguable, that the definition of architecture by architects, researchers and the general public is limiting and not inclusive. Animals have for centuries, designed and built their homes with all qualities and attributes of the houses designed and built by human-beings.

Plate 16. A termite channel at Unizik, Awka, Anambra State
Source: Nnamdi victory (2018)

Plate 17. A full structured and completed ant hill located opposite utility building, Unizik, Awka, Anambra State.
Source: Nnamdi Victory's field work.

Plate 18. A spider web construction at M.Sc. studio
Department of architecture, Unizik, Awka, Anambra State.
Source: Nnamdi Victory's field work.

Plate 19. View of ant house, Nnamdi Azikiwe University, Awka, Nigeria.
Source : Uzoagbala Modesta (February 2018)

Plate 20. Clear view of an ant house, Nnamdi Azikiwe University, Awka, Nigeria.
Source: Uzoagbala Modesta (February 2018)

Plate 21. An ant hill, at Ifite, Nnamdi Azikiwe University
Awka, Anambra State
Source: Mbam Oluoma David (February 2018)

Plate 22. Wasp nest on the wall
Nnamdi Azikiwe University
Awka, Anambra State
Source: Mbam Oluoma David (February 2018)

Plate 23. A massive ant hill, Nnamdi Azikiwe University
Awka, Anambra State
Source: Oduche Chidera Victor.

Plate 24. Bee colony constructed in a hollowed tree at Agbani, Enugu state.
Source: Ogbonna Jonadab N.

Plate 25. Ant colony atop a tree at Ishiagu, Ebonyi State.
Source: Ogbonna Jonadab N.

In some cases, human-beings are still wondering and marveled, how creative animals are in designing and building their homes. Their dedication and focus in building their homes are without a doubt, unbelievable. According to Lou (2011), we have a pretty good idea about what sets humanity aside from the animals. We built the Pyramids, but animals have been cranking out architectural marvels since humanity was still trying to figure out how pooping works.

Plate 26. The Great Wall of Beavers
Source: Lou (2011), retrieved June 16, 2018

Contrary to popular belief, the Great Wall of China cannot be seen from space, but the 2, 790-foot beaver dam of North Alberta, Canada could be seen (plates 26 and 27).

First discovered by someone messing around on Google Earth, it is the largest piece of animal-built infrastructure on the planet, and according to some science people, it would have taken upwards of 20 years to build, and can be seen in satellite images from 1990.

Plate 27. The Great Wall of Beavers
Source: Lou (2011. Via telegrapg.co.uk), retrieved June 16, 2018

Originally constructed to keep out enemies -- like China's Great Wall, it is now a tourist attraction for humans astonished about how such a huge thing was built by such inferior creatures. The dam acts as a moat and protects the beavers from much of their land-based adversaries such as foxes and bears. In addition, the monstrous constructs also house several generations of beavers. For reference, normal beaver dams clock in at around half the size of this one, but nonetheless, they can typically rival the Hoover Dam in length, which is pretty good for giant rats whose only method of construction is slapping things with their tails (Lou, 2011).

Termites are probably more renowned for tearing down infrastructure than building their own, but the bastards that actually take up residence in *your* house are really just the lazy ones. In the wild, termites live in elaborate mounds built out of soil, mud, chewed wood and clumps of their own poop. Though the word "mound" doesn't quite do them justice, as each one is a 30-foot-tall self-sustaining megacity that can be seen on satellite images. When we said they are a "mile high" we of course mean that on termite scale as in, that is how massive these structures would be if humans were to build one(plates 28 to 32), architecture of the termites, tourist attraction.

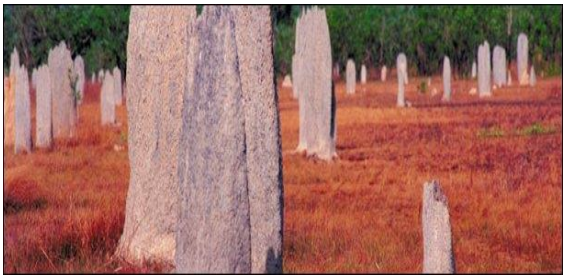

Plate 28. Mile-High Termite Megacities
Source: Lou (2011, Photos.com). Retrieved June 17, 2018

Plate 29. Mile-High Termite Megacities
Source: Lou (2011, Photos.com). Retrieved June 17, 2018

Underground, the termite colony can sprawl for several acres, and provides a self-sustaining city with everything the bugs need for survival (plates 29 to 34). They even have little termite motel rooms just for mating.

Plate 30. Termite Skycity
Source: Lou (2011, Photos.com). Retrieved June 17, 2018.

The termites even farm their own resources. Colonies are equipped with underground farms where fungus is cultivated with collected plant matter. Most impressive is the fact that all of this is centrally heated. Not only do they build their towers facing north to south to regulate heat, tunnels throughout the mound serve as ducts to regulate the air flow and temperature of the colony, which is crucial to the upkeep of those cute little mushroom farms. To put this in perspective: Back when humans were still all living in huts made from mud and bark, the termites were already chilling out in enormous, air-conditioned ecologies (Lou, 2011).

The compass termite builds large wedge-shaped mounds for nests (plates 31 to 33). These wedges are roughly oriented in a north-south orientation, which gives them their name. It is believed that this shape helps their mounds stay thermo-regulated.

Plate 31. Compass termite mounds in open field
Source: De Volder (retrieved June 17, 2018.
Credit: dabendansbookshelf.wordpress.com)

Plate 32. Compass termite mounds in open field
Source: De Volder (retrieved June 17, 2018. Credit: Travel NT)

Plate 33. Termite in action
Source: Lou (2011, Photos.com). Retrieved June 17, 2018.

The synergy and bond found in the termite kingdom also exist in the birds' family. Social weavers are kind of the Hilton family of the bird world. Not only do they build the biggest nests of any bird, but the constructions are permanent -- housing hundreds of birds over several generations. And they actually rent out the extra rooms to birds of other species (plates 34 to 48).

Plate 34. Social Weaver Birds and Their Sky Condominiums
Source: Lou (2011, Photos.com). Retrieved June 17, 2018

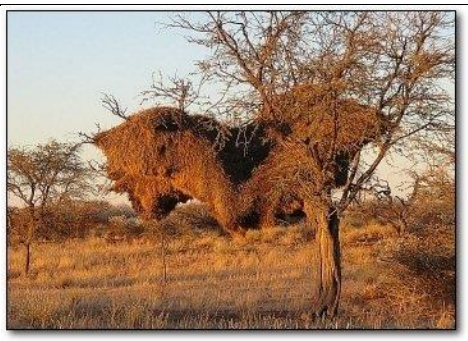

Plate 35. Social Weaver Birds and Their Sky Condominiums
Source: Lou (2011, Via Harald SA ¼ pfle). Retrieved June 17, 2018

According Lou (Lou), their housing projects are as elaborate and decadent as any human condominiums, considering their entire decor is made of twigs. One pair of birds occupies each chamber, which is further subdivided into several rooms with entrances below the nest. The inner rooms retain heat and are used during the night, while the outside rooms are actually cooler than their surroundings and are used during the day. Social weaver nests are so sturdy that they can last for hundreds of years, and the birds can even booby-trap the entrances with sharp sticks if they are vulnerable to snake infiltration. Life in the nest is so snug that other kinds of bird, even carnivorous pygmy falcons, are known to move in under the condition that they do not eat anybody.

Plate 36. Social Weaver Birds and Their Sky Condominiums
Source: Lou (2011, Getty). Retrieved June 17, 2018

Plate 37. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018.
Credit: Mike Soroczynski)

Plate 38. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018.
Credit: Tyne Wear-Rob)

Plate 39. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018)

Plate 40. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Dillon Marsh)

Plate 41. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Denis Roschlau)

Social weaver birds, native to South Africa, Namibia and Botswana, weave huge communal nests that can hosts hundreds of birds across multiple generations. These nests, woven from sticks and grass, are permanent. The deeper inner chambers maintain a higher temperature at night, allowing the birds to stay warm). This noticeable characteristic equally applies' in the houses, designed and lived-in, by human-beings (the comfort of the user).

Baya weavers often build their elegant hanging woven nests in thorny palm and acacia trees or above bodies of water, where predators may have difficulty reaching them (plates 42 to 44). The nests can often be found in colonies, although isolated ones do exist as well (De Volder, 2018).

Plate 42. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Ramnath Bhat)

Plate 43. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Farhan Younus)

Plate 44. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Subroto

The red ovenbird builds its nest out of clay and mud. These strong nests help prevent predation and, once abandoned, can provide other birds with a relatively secure place to live (plates 45 and 46).

Plate 45. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit:merlinsilk.com)

Plate 46. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Eric Henrique)

The Montezuma oropendola weaves its nests out of small vines and grass (plates 47 and 48). They usually live in colonies of roughly 30 birds, which include a dominant male that mates with the females (De Volder, 2018).

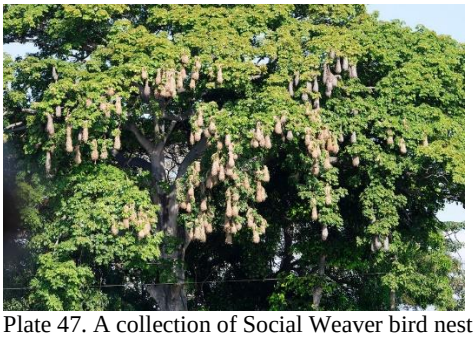

Plate 47. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Andrew Block)

Plate 48. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Simon Valdez)

In another situation, Gophers (giant rodents), are bright and brilliant (plates 49). According to Lou (2011), you might think you learned everything you need to know about gophers from *Caddyshack,* the film classic in which Bill Murray is driven insane by a single gopher digging holes in his golf course. Surprisingly, this is misleading as a nature documentary, and if Murray's character knew what was really going on behind the scenes, he probably would have climbed a clock tower with a sniper rifle years before.

Plate 49. Gopher Towns
Source: Lou (2011, Photos.com).
Retrieved June 17, 2018

Gophers' burrows are really called "towns," owing to the fact that they can spread hundreds of acres and contain thousands of rodents at a time. They keep themselves relatively self-sufficient by hoarding an incredible amount of food from the area above, which they smuggle back into town inside their cheeks (plate 52).

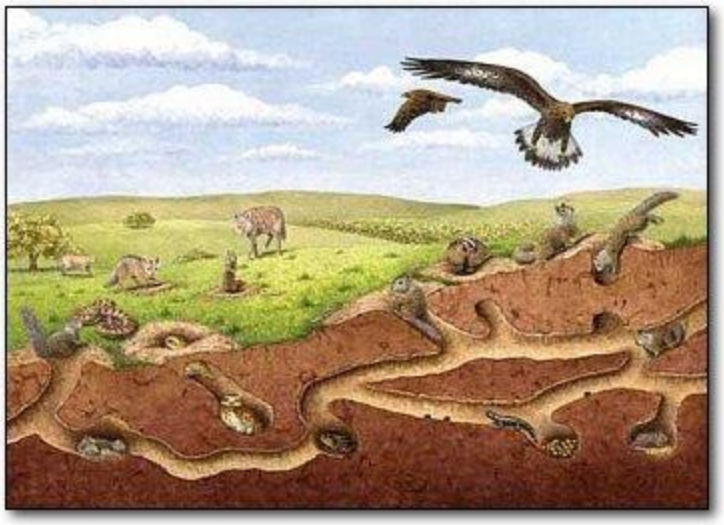

Plate 50. Gopher
Source: Lou (2011, by Tim Gunther). Retrieved June 17, 2018

Their underground tunnels are astonishingly well organized, with rooms for sleeping, for keeping warm in winter and even nurseries for junior gophers (plates 50 and 51). On top of that, they (like the termites) have air chambers to regulate temperature. You might be thinking that an underground city is particularly susceptible to flooding, but the gophers have that covered. They actually build leaves around the entrances (defensive design) and laugh at any creature that has not developed the technology to withstand natural disasters.

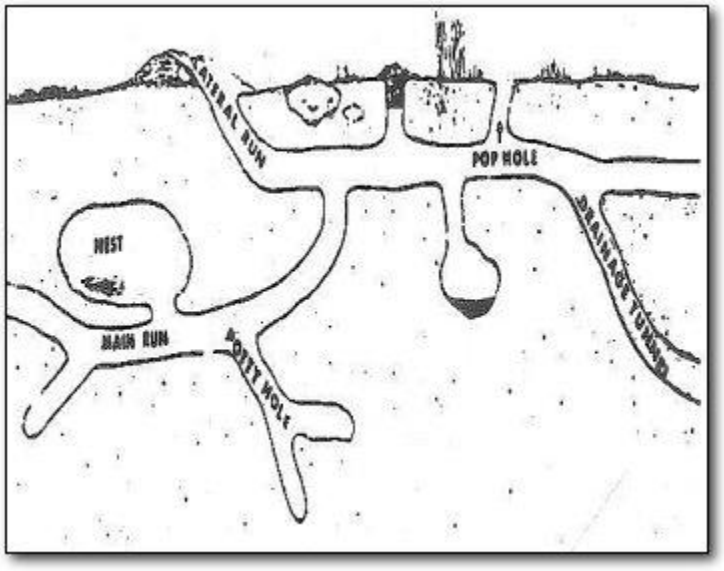

Plate 51. Gopher
Source: Lou (2011, Via pesteducation.com). Retrieved June 17, 2018

Despite these, your typical gopher town is as well protected from enemy invasion as Helm's Deep. The gophers have little watchtowers (security towers) which are formed from the dirt they dug out of their tunnels. Gophers will stand on top of their mounds and silently watch for enemies. When the gopher on duty (we assume they work in shifts) sees something suspicious, it sends a high-pitched whistle into the burrow and all the gopher archers and gopher berserkers arm the walls and brace the main gates (Lou, 2011). Furtherance to that, another animal that builds and lives in chambers are the Wasps. According to Lou (2011), if spiders are the villains of the bug world, mud dauber wasps can be described as the Batmen of said world. Like most wasps, they capture spiders for food, but mud daubers go one step further and imprison their nefarious prey in little asylums made of mud and wasp barf (plates 52 to 54).

Plate 52. Mud Dauber Prisons
Source: Lou (2011, Via gophergoner.com). Retrieved June 17, 2018

Plate 53. Mud Dauber Prisons
Source: Lou (2011, Getty). Retrieved June 17, 2018

Plate 54. Mud Dauber Prisons
Source: Lou (2011, Via billofthebirds.blogspot.com). Retrieved June 17, 2018

Mud dauber nests are composed of dozens of distinct prison cells, each of which contains up to three spiders. At any one time, there can be as many as two dozen prisoners inside plotting their next brazen escape. However, because wasps are neither idiots nor very good wardens, they paralyze the spiders first, limiting their ability to incite riots. Of course, the criminal justice system works a little differently for bugs. All of the inmates of wasp prison are convicted on one count of

being delicious, and sentenced to be devoured by wasp larvae once the wardens' eggs hatch on their paralyzed bodies.

Animals are unique and with different creative skills. The Trapdoor Spiders live like the Gophers, under the ground (plates 55 to 56). According to Lou (2011), unlike most spiders, who prefer to terrorize us from above, spiders in Australia have naturally learned a more subversive style of horror. Trapdoor spiders dig burrows under the ground where they spend their entire lives and by that we mean up to 20 years.

Plate 55. Mud Dauber Prisons
Source: Lou (2011,Via hiltonpond.org). Retrieved June 17, 2018

Plate 56. Trapdoor Spiders Build Doors with Hinges and Trip Wires
Source: Lou (2011, Getty). Retrieved June 17, 2018

But the trapdoor spider has a name to live up to. These spiders equip their burrows with a door made from soil and leaves, *complete with a hinge* made from their own silk, which makes the spider burrow completely invisible while sealed.

Of course, the spiders have yet to master the technology of electronic surveillance, but they do have the next best thing. Sitting just behind their closed door, they utilize a complex system of tripwires with their webbing, so that when an unsuspecting victim passes close to the burrow, they fall victim to sudden underground spider attack. At least regular spiders are polite enough to spin a web at face-level so that you at least know when you're about to walk into one. Spiders are normally competitive, solitary and stay away from each other. It is rare to see too many spiders in the same place at the same time except in Texas, United States of America (plates 57 to 61).

Plate 57. Spiders Nightmare Mega-Web
Source: Lou (2011, Photos.com). Retrieved June 17, 2018

Plate 58. Spiders Nightmare Mega-Web
Source: Lou (2011, Via sciencedaily.com). Retrieved June 17, 2018

Apparently, this happens when an increase of humidity levels cause an abundance of the things spiders like to eat, and so the spider population explodes in a contained area. Unable to disperse, the spiders decide to put aside their differences and form a terrible army of *Red Dawn* proportions as was equally the case in Canada (Lou, 2011).

Plate 59. Spiders Nightmare Mega-Web
Source: Lou (2011, Via flatrock.org.nz). Retrieved June 17, 2018

This time, the web covered 24 hectares of farmland, and housed something in the order of tens of millions of arachnids. Cell biologist Brian Thair speculates, "Maybe it was an effort collectively by these spiders to try and catch a sheep," but of course, he is only kidding (Lou, 2011).

Plate 60. Spiders Nightmare Mega-Web
Source: Lou (2011, Via flatrock.org.nz).
Retrieved June 17, 2018

Plate 61. Spider design
Source: Lou (2011, Via flatrock.org.nz).
Retrieved June 17, 2018

According to De Volder (retrieved June 17, 2018), most animals are content with finding a slightly softer and more sheltered space to sleep for the night, but there are also wild animals out there that demand nothing but the finest accommodations. Home building is probably the closest that many animals will come to tool use, in the sense that we think of it. It seems that the jury is still out on whether or not nest (or dam, in the beaver's case) building can be considered to be tool use – these animals do carry sticks, twigs and leaves for intentional future use, but they do not "use" them on other things the way a chimpanzee uses a stick to hunt termites. In animal architecture, Ingo Arndt, created an extensive collection of images of structures by animals (plates 16 to 68).

Human-beings create beautiful environments in most cases, to exhibit wealth and sometimes, to attract attention to themselves. In the animal kingdom and according to De. Volder

(2018), the male Vogelkop bowerbird creates bowers, or small huts, out of grass and sticks to attract females to mate with. The consummate interior designers of the animal world, these birds arrange berries, beetles, flowers and other colorful and eye-catching ornaments into artistic arrangements to attract their mates. Ironically, the females do not actually use these bowers to raise their young (plates 61 to 64).

Plate 61. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018.
Credit: thewildernessalternative.com)

Plate 62. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018.
Credit: thewildernessalternative.com)

Plate 63. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018.
Credit: cannedyams.wordpress.com)

Plate 64. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018.
Credit: thewildernessalternative.com)

Honeybees' entire lives revolve around their nests (plates 65). It is in these nests, which they construct out of secreted wax, that they process their food and raise their young (De Volder (2018)).

Plate 65. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Damian Biniek)

For the Wasps, the majority of them actually do not build nests, preferring solitary or even parasitic arrangements. Social wasps, on the other hand, build elegant paper nests out of plant pulp, spit, resin and other materials (plates 66). These consist of internal paper honeycomb tiers (similar to a honey bee's comb in appearance but not material) surrounded by a paper wrapping.

Plate 66. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Antoiette)

Wallows build their nests out of various materials, and some do not even build any at all, choosing instead to nest in found or abandoned cavities (plates 75 to 77). Certain species of swallow, however, create their nests primarily out of their own saliva. These nests are edible, and are considered a delicacy by some.

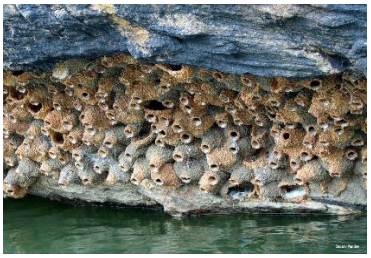

Plate 67. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Sauray Pandey)

When it is time for the caddisfly to pupate, it spins a tough cocoon out of pebbles, sand, shells, and other lake- and river-bed detritus (plates 68). It weaves these elements together with strands of its own silk to safely grow to adulthood.

Plate 68. A collection of Social Weaver bird nest
Source: De Volder (retrieved June 17, 2018. Credit: Heatherkh)

Conclusion

The creative environments of Human beings and Animals have left more questions than answers. Who is the Architect and what is Architecture? Human beings and animals who came to this world first? With all these questions, one will conclude that, the definitions of architecture by architects, researchers and the general public is limiting and not inclusive. Architecture is a very vast field that must be inclusive and not discriminatory. The entire creative fields, be it, auto mechanic body repair work, arts and craft, refuse dumps formation, weaving, plant growth formations, buildings, etc. must be included in the definitions of architecture and all involved the works are architects.

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