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APPLYINGTHEHEALTHBENEFITSOFBIOPHILICDESIGNTOPRIESTS'RETIREMENTFACILITIES INSOUTH EASTERNNIGERIA

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ABSTRACT

This article explores the application of biophilic design principles in priests' retirement facilities in South Eastern Nigeria to harness the associated health benefits. Biophilic design integrates natural elements and patterns into the built environment to enhance well-being. The unique context of retired catholic priests, who require holistic support encompassing physical, mental, emotional, and spiritual aspects, makes this study particularly relevant. Through a comprehensive literature review, this article establishes the health benefits of biophilic design and its potential for improving the quality of life for retired catholic priests. It examines the cultural and environmental factors specific to South Eastern Nigeria and proposes a framework for implementing biophilic design principles in retirement facilities. The article highlights case studies, research findings, and best practices, demonstrating the positive impact of biophilicdesignonhealthoutcomes.Recommendationsforcollaboration, stakeholder engagement, training, long-term evaluation, knowledge dissemination, policy support, community involvement, and scaling up are provided. The findings emphasize the significance of integrating biophilic design principles to create sustainable, healthy, and spiritually nurturing retirement environments for catholic priests in South Eastern Nigeria.

Keywords*:* Biophilic design, South-East, Retirement facilities, Health

Introduction

Thenotionthatnaturehastherapeuticabilities hasbeenaroundforaverylongtime—morethana thousand years. Asian and Western civilizations are two of the most well-known cultures that have recognized the various advantages of nature and how it affects one's well-being throughout history (Ulrich and Parsons, 1992). The Greeks, who had one of the first networks of healing locations called Epidauros and employed water from a natural spring in cleaning rites and otherhealingceremonies,wereoneparticular civilizationthatutilizednatureasatherapeutic ingredient.Ancient Roman military hospitals are another illustration; they wereamongtheearliesthospitalseverandwer enaturallyilluminatedandventilated(Heathc ote,2010).Monasteries were one of the earliest places where a garden was used as a therapeutic garden(MarcusandSachs,2013).Largetreesi nthemonasterygroundsprovidedshadeforthe pathwaysandprovidedvisualstimulationfort

hepatientswithinthebuilding.Waterwasoccasionallyusedinritualsalongwithotherelements.Additionally,thestructuresfrequently used cross-ventilation and natural lighting (ibid). Those who were ill might utilize the gardens at monasteries as relaxing diversion (Gerlach-Spriggs et al., 2004).As a result, throughout history, gardens were important components of the built environment and healing locations could be found in nature. Unfortunately, more people now view nature as a decorative aspect than as a key component of design (Bennett and Marcus, 1999).

In South Eastern Nigeria, as in many other regions, the elderly population of catholic priests is growing at a significant rate, necessitating a greater focus on providing quality care for them. As the demand for priests' retirement facilities increases, it becomes essential to explore innovative approaches that prioritize the well-being and enhance the quality of life for retired catholic priests. One such approach gaining recognition worldwide is the application of biophilic design principles in these facilities. According to Kellert and Wilson (1993), "biophilia" is a theory that describes how people engage with nature and is described as "the innate desire among humans to interact with nature to maintain optimal health and well-being." Edward O. Wilson first proposed the biophilia theory in his book Biophilia. According to this theory, there is a natural affinity between people and the natural world. Because of this, most individuals like environments that resemble savannahs (Kellert and Wilson, 1993). Additionally, being in a natural setting can aid with sleeping habits, pain management, recuperation time, and even lifespan (Rodiek, 1993).According to Laumannetal.(2003),biophilia benefits the aged in terms of productivity, emotional health, stress reduction, learning, and healing.

This work aims at exploring the potential benefits of applying biophilic design principles to priests' retirement facilities in South-Eastern Nigeria. By examining the health advantages associated with biophilic design and its alignment with the spiritual values and lifestyles of retired priests, the article seeks to advocate for the integration of nature-inspired elements in these facilities. The ultimate goal is to create environments that promote holistic well-being, peace, and spiritual growth for retired priests as they enter this significant phase of their lives.

Research Method

A qualitative research approach was employed, with this, comprehensive data and insights were gathered. The relevant literature on biophilic design, its advantages for health, and its use in a variety of contexts was thoroughly reviewed. The theoretical framework of the study was developed by analyzing books, reports, academic papers, research articles, and other resources. The literature study concentrated on two important theories in the environmental psychology literature: Stress Recovery Theory (Ulrichetal., 1991) and Attention Restoration Theory (KaplanandKaplan,1989,Kaplan,1995) in order to examine the evidence for positive experiences in environments with natural

features. The review looked for evidence of the three biophilic experiences 'beneficial benefits on a variety of psychological outcomes, including enhanced cognitive function, decreased stress, and improved mood, which all contribute to improved health and well-being. Case studies of some existing religious retirement facilities in the south east were also carried out, to assess their level of compliance to the principles of biophilic design. The case studies featured; on-site visits, interviews with retired priests, facility managers, and documentation of findings.

Findings

Casestudieswereundertakenatthefollowingpriests'retirementfacilities;

i. Pastor Bonus Villa, Pastor Bonus villa is the retirement facility for Umuahia Diocesan priests, it is located at Ohokobe-Afaraukwu, Umuahia, Abia State andwas built in2018.



Plate1:AerialoftheCourtyardatPastorBonusVilla,Ohokobe-Afaraukwu,Umuahia.Source:Researcher'sfieldwork2023



Plate2:ApproachviewofPastorBonusVilla,Ohokobe-Afaraukwu,Umuahia. Source:Researcher'sfieldwork2023

ii. Priests'WelfareHome,Priests'WelfareHomeistheretirementfacilityforAwkadiocesan priests. It is located behind St Thomas Aquinas Catholic Church, alongBishop Simon Okafor Avenue, Awka, Anambra State. This edifice was erected in2003.



Plate3:FrontviewofPriests'RetirementHome, AwkaSource:Researcher'sfieldwork2023



Plate4:AlobbyinPriests'WelfareHome,AwkaSour ce:Researcher'sfieldwork2023



Plate5:AerialviewofthecourtyardatSpiritans'Haven,MgbidiSource:Rese archer'sfieldwork2023



Plate6:ChapelinterioratSpiritans'Haven,MgbidiSource:Researcher'sfieldwork2023

It was observed that the retirement facilities visited have very minimal applications of the principles of biophilic design, as can be seen in the plates above. The area of hard surface outweighed the area of vegetation. Biophilia is literally the love of living things, and it refers to the psychological connection between humans and the natural world, Biophilic design implies the incorporation of nature and living things into design choices from architecture to interior lay out (Haldane, 2022). The interior spaces of the retirement facilities visited have no trace of living things in them.Again, the surrounding outdoor spacesare not pleasing to view, even where one has a swimming pool within the courtyard, it is surrounded by hard surfaces. A blend of vegetation would have really complimented the water body. Given these observations, one can rightly surmise that the design of these facilities were not informed by biophilia hypothesis.

Biophilia and Biophilic Design

The biophilia hypothesis, which informs biophilic design, is a viable method for developing a healing environment that can enhance the health and welfare of the elderly. According to Louise Delagran (2016), our circumstances may either make us more or less stressed, which has an effect on our bodies. Environmental psychology research has demonstrated that what one sees, hears, or experiences at any one time has the power to alter not just one's mood but also the functioning of one's neurological, endocrine, and immunological systems. One could experience fear, sadness, or helplessness as a result of the stress of an undesirable situation. As a result, the immune system is suppressed and one's blood pressure, heart rate, and muscular tension are all increased. On the other hand, a pleasant setting changes everything.

A large and expanding body of research in the area of healthcare for older individuals supports the significance of natural components to human health by demonstrating that contact with the urban green environment has a wide variety of beneficial health outcomes and advantages. According to numerous studies (Kaplan, 1995; Berman et al., 2008; Pearson and Craig, 2014;Capaldi et al., 2015; Lawton et

al., 2017), spending time in natural settings promotes physical activity and engagement, boosts energy, fights depression, improves memory, improves physical health, reduces stresses, offers restorative experiences, and promotes social relationships.

German social psychologist Eric Fromm (1964, 1973) used the word "biophilia" to describe a psychological orientation of attraction to all living things, recognizing this underlying bond between people and the natural world. Edward O. Wilson (1984), a biologist and professor of science at Harvard University, expanded and popularized the "biophilia hypothesis" in response to Fromm's research. This idea was described by Wilson as "the innate tendency to focus on life and lifelike processes". He outlined how humans are physiologically related to nature on a physical, psychological, and spiritual level in his book Biophilia. Wilson went on to say that this strong connection to life is a complicated process that helps to advance mental health and wellbeing. Wilson's later text The Biophilia Hypothesis was co-edited by Stephen Kellert, Senior Research Scholar at Yale University and Emeritus Professor of Social Ecology. According to Kellert (1993), the biophilia theory asserts that humans are dependent on nature in ways that go well beyond basic needs for physical and material nourishment to also address the need for appealing, mental, logical, and even spiritual satisfaction.

Author of Last Child in the Woods Richard Louv (2011) developed the concept of "nature-deficit disorder" by extending the idea of biophilia. This phrase was coined by Louv to express the growing disconnect between people and the natural world, not as an actual medical condition. Louv later added the "Nature Principle" to this concept in his book The Nature Principle: Human Restoration and the End of Nature – Deficit Disorder. This idea was developed via the collaboration of several ideas based on nature, all of which were based on the idea that nature offers healing for the improvement of bodily, psychological, and spiritual health. On a larger scale, the concept also defines how nature affects human senses and the bonds that form between family, friends, and other social groups.

Through the development of this concept, according to Louv (2008, 2011), mankind should strive to become as engrossed in the natural world as it has been in the realm of technical breakthroughs and computer augmented realities. The future, according to him, will belong to the nature-smart-those people, families, enterprises, and political leaders who have a better awareness of nature and who balance the virtual with the real - in an era of fast environmental, economic, and social transition (Louv, 2011). According to Louv, the Nature Principle encourages the incorporation of biophilia into the built environment, arguing that locations where people live, work, and interact should try to restore and conserve human energy in addition to natural resources. Additionally, he submits that the inclusion of outdoor spaces in developed settings will support this idea of conserving human energy (Louv, 2011).

A growing body of theoretical and empirical research has been conducted to support the biophilia theory, and its underlying assumptions have grown more intricate. The "learning rules “of culture and emotional reactions that make up the foundation of the biophilia theory are not single but rather interwoven and might

each be studied separately to have a better understanding (Wilson, 1984). This stated collection of learning principles includes several expressions that look at basic human propensity traits related to nature (see Table 2.1). Learning expressions like these serve as an example of the hypothesis that human evolution has always depended on the natural world for a feeling of general wellbeing (Kellert, 1993).

Perspective	Theory	Description
Biophilia	**The Biophilia Hypothesis** (Wilson,1984,1993)	Biophilia is 'the innately emotional affiliation of human beings to other living organisms.' Afterhuman migrated to the built environment, we inherited a need for nature, which evolved into 'thinkingaboutnature'.
	Biophilia Values (Kellert,1993)	The dependence on nature is 'for survival and personal fulfilment', and the nine biophilia values are:'utilitarian,naturalistic,scientific,aesthetic,symbolic,humanistic,moralistic,dominionistic,andnegativistic'.
Habitat andDwelling	**Prospect-RefugeTheory**(Appleton,1975)	Prospect and refuge occur simultaneously, that is, 'the ability to see without being seen'. Prospectprovides 'an unimpeded opportunity to see' (to find and gather sources), and refuge offers 'a shelter tohide'(to beprotectedfromoutside threats).
	The Savanna Hypothesis (OriansandHeerwagen,1992)	The savanna is the mixed woodland and grassland landscape commonly seen in Africa. It affordsabundant resources, open views, and climbable trees that are conducive to survival. Today, people stillhave aestheticpreferences forsavanna-likeenvironments.
	The Aesthetics ofSurvival (Hildebrand,1999,2008)	Survival advantageous characteristics are identified to discuss landscape preferences and explain whynature is fascinating in architecture. The five characteristics are: 'prospect and refuge, enticement,peril,and complexorder'.
Restoration	**StressRecoveryTheory** (Ulrich, 1983;Ulrich etal., 1991)	StressRecoveryreferstounthreatenedexposuretonaturethatproducespositiveemotionsandcontributestohealthandwellbeing.Itissupportedbysomepreferrednaturalfeatures(e.g.vegetations,water,andnaturalstructures,textures,images,andvistas).
	AttentionRestorationTheory (Kaplan,1995; Kaplan andKaplan,1989)	AttentionRestorationhelpsrelievementalstressandbrainfatigue.Interactionswiththenaturalenvironmentdonotrequire muchcognitive work,whichisbeneficialtorestoringexhaustedattention.
Place	**Place AttachmentTheory** (HidalgoandHernández,2001;Manzo,2003)	PlaceAttachmentTheoryexplorestheemotionalconnectionwithplacesandexplainsthe'senseofplace'and 'senseofcommunity'.

Plate7:Theoreticalbasisofbiophilicdesigninenvironmentalpsychology.Source:https://www.sciencedirect.com

According to Kellert (2008), one of the field's pioneers, biophilic design is a conscious effort to meet people's demand for interaction with natural systems and processes in the modern built environment as well as to enhance their mental and physical health, productivity, and wellbeing. Kellert (2005) asserts that biophilic design may foster beneficial relationships between people and nature and have a positive effect on the environment. To put it another way, biophilic design (Berkebile et al., 2008) does not just focus on reducing the environmental consequences of the building sectors while omitting touch with nature.

To provide "good habitat[s] for people in our cities and other designed environments that satisfies our inherent need for beneficial contact with the natural world" (Kellert, 2012) is one of the major problems of our time. By using design modes defined in the book Biophilic Design: The Theory, Science, and Practice of Bringing Buildings to Life (Kellert & Heerwagen, 2008), biophilic design is the practice and practical implementation of the biophilia hypothesis. The manifestation of the innate human need to identify with

nature in the built world is how StephenKellertandJudithHeerwagendefinethedesigncomponentofbiophiliawithinthis.Thefundamental tenet of biophilic design is that human performance and well-being depend on experiencing beneficial natural systems and processes in our built environments (Kellert&Heerwagen,2008).

From the original, simpler biophilia basic ideas, biophilic design has evolved in to a more complicated design discipline. In addition, biophilic design describes design elements required to promote the interconnectedness between humans and the natural environment. It emerged from the realization that the psychological and spiritual aspects of humanity have evolved in an interconnected environment, one that is still essential for productivity, psychological health, and spiritual well-being (Kellert &Heerwagen, 2008).

It's important to realize that while biophilic design stresses the relationship between people and nature, it is not only about including more trees and other vegetation in constructed environments. Instead, biophilic design places a strong emphasis on how people interact with environment and how to sustainably and culturally integrate nature into civilization. According to Kellert and Heerwagen (2008), it is critical that biophilic built environments actively encourage a connection with nature that is reciprocal, respectful, and nourishing to human well-being. Therefore, in order to restore the best possible level of human wellbeing, design that fosters the link between humans and environment is required. Kellert continues by stating that an adversarial strategy for reestablishing this connection would result in further environmental deterioration and separation from biological ecosystems and natural components in urban settings (2012).

Biophilic Design, Health and Well-Being

If specific natural settings have benefited human survival and reproductive success throughout evolution, it might be argued that these landscapes nourish human physiology and foster a feeling of emotional well-being. Nature is not just a preference for humans; it also plays a crucial role in maintaining our physical and mental wellbeing. Numerous studies have demonstrated the significant benefits of frequent contact with nature for mental health, notably for stress management (Kahn, 1997). Even additional advantages come from being immersed in natural settings. Patients who are exposed to sights and components of nature both before and after surgery recover physically more quickly (Dillon, 2008).

Researchers have consistently found that people with access to nearby natural settings are healthier than other individuals (Grinde and Patill, 2009). Connections with nature are immensely helpful both mentally and physically when encouraged and enabled. The isolation of the community from its natural surroundings puts our mental and physical health at risk. Perhaps more troubling, this separation between humankind and the natural surroundings has resulted in apathy toward the effects of our actions on the biosphere, which causes greater environmental problems (Dillon, 2008). Nature is beneficial to all regardless of age, race, gender, or ethnicity. It has been shown that exposure to outdoors helps people recuperate from stress and dysfunction. The placement of patients in therapeutic gardens can result in symptom relief. Certain plants and habitats have been linked to stress reduction, curative

benefits, and relaxing, healing effects on the unwell (Bender, 2007; Dillon, 2008). Patients need a variety of social connections when they are receiving medical treatment, but it's also important for them to be able to choose the interactions. They should have the option to choose between being alone and interacting with others as well as the kind of the interaction.

Social engagement often provides patients with diversion, support, and relaxation, according to the Netherland Board for Healthcare Institutions [NBHI] (2008). An array of studies have found that exposure to nature's sights, sounds, and other sensory experiences can help individuals with clinically diagnosed diseases feel less stressed and anxious while also promoting their recovery. Roger Ulrich, a psychologist and environmental geographer, and his colleagues did an amazing research on patients recuperating from gall bladder surgery. One of two types of hospital recovery rooms, one with a window view of trees and other greenery, and the other with a view of a brick wall, were randomly allocated to the patients. Patients who could see the outside had much higher rates of recovery, more favorable treatment outcomes, and a markedly lower need for medicine than those who could only see the brick wall. Patients with the nature window view had shorter post-surgical hospital stays, fewer minor post-surgical complications, and received far fewer unfavorable evaluations in nurses' notes (Ulrich etal, 1991).

In Sweden, 160 patients recuperating from cardiac surgery participated in a similar study that was undertaken by Ulrich and his colleagues. This time, the patients were divided into three recovery rooms at random: the first had pictures of water and trees on the wall; the second had abstract wall art; and the third had nothing but empty walls. The patients who viewed images of water and trees reported much less anxiety and fewer requests for powerful painkillers, according to the study. Contrarily, patients whose walls were covered in abstract art had the highest levels of stress. Ulrich and his colleagues again exposed patients in a study of Swedish mental patients to representational art, with one group watching images of flowers and a lovely lands cape and the other group viewing abstract art. Those who saw works of nature art exhibited greater positive benefits; those who saw works of abstract art showed more negative impacts. Some patients, who are typically nonaggressive, even assaulted and destroyed the artwork.

StephenKellert'sresearchoftheVillageHomesneighborhoodinCalifornia, a 30-year-old residential area, examined the practical application of biophilic design in the built environment. Over 200 homes, a modest office building, and a community center were all part of the construction. The design allocated open space, agricultural land, pedestrian walkways, and recreational areas for one-fourth of the overall community area. According to the study's results, inhabitants maintained a high quality of life in terms of contentment and well-being, stayed in the community for extended periods of time, and expressed strong support for the biophilic features built into the neighborhood. According to the findings, low environmental impact design elements, notable biophilic design components, such as narrow streets that encouraged neighborly relationships, winding paths lined with shrubs and trees, and the natural contours of the original landscape, all contributed to the success of the community (Kellert, 2012).

According to related studies, biophilic offers older people with tangible assistance that can be quantified or demonstrated (Herzog and Bryce, 2007). According to Laumann et al. (2003), biophilic design benefits the elderly in terms of productivity, emotional wellbeing, stress reduction, learning, and rehabilitation. Additionally, similar research have shown that biophilic design helps the elderly in real-world ways that can be quantified or demonstrated (Herzog andBryce,2007).Theprimarygoalofanelderlyresident'sresidentialenvironment,accordingto

Lee and Park (2020), is to induce and promote experiences that are connected to their health and well-being.

The14PatternsofBiophilicDesign

A thorough framework known as the "14 patterns of biophilic design" (Browning et al., 2014) was created by Terrapin Bright Green, a biophilic design-focused design company located in the USA. There are14 patterns total, divided into three categories.

	14 PATTERNS	-	STRESS REDUCTION	COGNITIVE PERFORMANCE	EMOTION, MOOD & PREFERENCE
NATURE IN THE SPACE	Visual Connection with Nature	- - -	Lowered blood pressure and heart rate (Brown, Barton & Gladwell, 2013; van den Berg, Hartig, & Staats, 2007; Tsunetsugu & Miyazaki, 2005)	Improved mental engagement/ attentiveness (Biederman & Vessel, 2006)	Positively impacted attitude and overall happiness (Barton & Pretty, 2010)
	Non-Visual Connection with Nature	- -	Reduced systolic blood pressure and stress hormones (Park, Tsunetsugu, Kasetani et al., 2009; Hartig, Evans, Jamner et al., 2003; Orsega-Smith, Mowen, Payne et al., 2004; Ulrich, Simons, Losito et al., 1991)	Positively impacted on cognitive performance (Mehta, Zhu & Cheema, 2012; Ljungberg, Neely, & Lundström, 2004)	Perceived improvements in mental health and tranquility (Li, Kobayashi, Inagaki et al., 2012; Jahncke, et al., 2011; Tsunetsugu, Park, & Miyazaki, 2010; Ken, Ren, & Fielding, 2007; Stigsdotter & Grahn, 2003)
	Non-Rhythmic Sensory Stimuli	- -	Positively impacted on heart rate, systolic blood pressure and sympathetic nervous system activity (Li, 2009; Park et al, 2008; Kahn et al., 2008; Beauchamp, et al., 2003; Ulrich et al., 1991)	Observed and quantified behavioral measures of attention and exploration (Windhager et al., 2011)	
	Thermal & Airflow Variability	- -	Positively impacted comfort, well-being and productivity (Heerwagen, 2006; Tham & Willem, 2005; Wigö, 2005)	Positively impacted concentration (Hartig et al., 2003, Hartig et al., 1991; R. Kaplan & Kaplan, 1989)	Improved perception of temporal and spatial pleasure (allisthesia) (Parkinson, de Dear & Candido, 2012; Zhang, Arens, Huizenga & Han, 2010; Arens, Zhang & Huizenga, 2006; Zhang, 2003; de Dear & Brager, 2002; Heschong, 1979)
	Presence of Water	- -	Reduced stress, increased feelings of tranquility, lower heart rate and blood pressure (Alvarsson, Wiens, & Nilsson, 2010; Pheasant, Fisher, Watts et al., 2010; Biederman & Vessel, 2006)	Improved concentration and memory restoration (Alvarsson et al., 2010; Biederman & Vessel, 2006) Enhanced perception and psychological responsiveness (Alvarsson et al., 2010; Hunter et al., 2010)	Observed preferences and positive emotional responses (Windhager, 2011; Barton & Pretty, 2010; White, Smith, Humphryes et al., 2010; Karmanov & Hamel, 2008; Biederman & Vessel, 2006; Heerwagen & Orians, 1993; Ruso & Atzwanger, 2003; Ulrich, 1983)
	Dynamic & Diffuse Light	- -	Positively impacted circadian system functioning (Figueiro, Brons, Plitnick et al., 2011; Beckett & Roden, 2009) Increased visual comfort (Eryezadi, 2012; Kim & Kim, 2007)		
	Connection with Natural Systems				Enhanced positive health responses; Shifted perception of environment (Kellert et al., 2008)
NATURAL ANALOGUES	Biomorphic Forms & Patterns	-			Observed view preference (Vessel, 2012; Joye, 2007)
	Material Connection with Nature			Decreased diastolic blood pressure (Tsunetsugu, Miyazaki & Sato, 2007) Improved creative performance (Lichtenfeld et al., 2012)	Improved comfort (Tsunetsugu, Miyazaki & Sato 2007)
	Complexity & Order	- -	Positively impacted perceptual and physiological stress responses (Salingaros, 2012; Joye, 2007; Taylor, 2006; S. Kaplan, 1988)		Observed view preference (Salingaros, 2012; Hagerhall, Laike, Taylor et al., 2008; Hägerhäll, Purcell, & Taylor, 2004; Taylor, 2006)
NATURE OF THE SPACE	Prospect	- - -	Reduced stress (Grahn & Stigsdotter, 2010)	Reduced boredom, irritation, fatigue (Clearwater & Coss, 1991)	Improved comfort and perceived safety (Herzog & Bryce, 2007; Wang & Taylor, 2006; Petherick, 2000)
	Refuge	- - -		Improved concentration, attention and perception of safety (Grahn & Stigsdotter, 2010; Wang & Taylor, 2006; Wang & Taylor, 2006; Petherick, 2000; Ulrich et al., 1993)	
	Mystery	- -			Induced strong pleasure response (Biederman, 2011; Salimpoor, Benovoy, Larcher et al., 2011; Ikemi, 2005; Blood & Zatorre, 2001)
	Risk/Peril	-			Resulted in strong dopamine or pleasure responses (Kohno et al., 2013; Wang & Tsien, 2011; Zald et al., 2008)

Plate 8: 14 Patterns of Biophilic Design Source:http://www.academia.edu/2911321154/4_PATTERNS_OF_BIOPHILIC_DESIGN_IMPROVING_DESIGN_IMPROVING_HEALTH_and_WELL_BEING_IN_THE_BUILT_ENVIRONMENT

Nature in the Space

Nature in the Space focuses on the immediate, tangible, and transient presence of nature in allocation or space. In addition to winds, noises, smells, and other natural components, this includes vegetation, water, and animal life. Potted vegetation, flower gardens, bird feeders, insect gardens, aquatic attractions, a waterfall, aquariums, courtyard gardens, green walls, and green roofs, are a few typical examples. Making meaningful, direct connections with these natural components, especially via variety, mobility, and multi-sensory experiences, yields the most powerful Nature in the Space experiences.

ii. Natural Analogues

Natural Analogues discusses direct, indirect, and organic allusions to the natural world. Nature's elements—including materials, colors, forms, and patterns— appearasart, adornment, furnishings, textiles, and other elements of the built world. Shell and leaf mimicry, furniture with organic shapes, and naturally occurring materials that have undergone significant processing or modification (such as wood planks or granite tabletops) all offer a tangential connection to nature; despite being real, they are only analogous to the objects in their "natural" state. Rich information is provided in an ordered, occasionally dynamic way for the best Natural Analogue experiences.

iii. Nature of the Space

Nature of the Space discusses spatial arrangements seen in nature. This encompasses our intrinsic and taught desire to be able to look beyond our immediate surroundings, our fascination with the somewhat risky or unknown, veiled vistas and revelatory moments, and occasionally even phobia-inducing characteristics when they include a trusted aspect of safety. The best Nature of the Space experiences are created by combining patterns of Nature in the Space and Natural Analogues with purposeful and captivating spatial configurations.

Conclusion

Applying the health benefits of biophilic design to priests' retirement facilities in South Eastern Nigeria can have numerous positive impacts on the well-being and quality of life of the retired priests. Biophilic design, which incorporates elements of nature into the built environment, has been proven to promote physical, mental, and emotional health. By integrating biophilic design principles into the retirement facilities, such as incorporating natural light, green spaces, and natural materials, the overall ambiance of the environment can be transformed. Exposure to natural light has been linked to improved sleep patterns, enhanced mood, and increased vitamin D levels. Access to green spaces, both indoor and outdoor, can provide opportunities for relaxation, social interaction, and physical activity, promoting a sense of connection with nature and reducing stress levels.

Moreover, biophilic design can contribute to the overall sustainability and energy efficiency of the facilities. For instance, incorporating natural ventilation systems,

such as courtyards or atriums, can enhance air quality and reduce the reliance on artificial cooling systems. The use of locally sourced, renewable materials can also minimize the carbon footprint and create a more eco-friendly environment. In addition to the physical benefits, biophilic design can also

positively impact the psychological well-being of retired priests. Being surrounded by natural elements, such as plants, water features, or natural materials, can evoke a sense of calmness, improve concentration, and enhance cognitive function. Studies have shown that exposure to nature can alleviate symptoms of anxiety, depression, and stress, contributing to an overall improved quality of life.

Furthermore, the integration of biophilic design can support the spiritual aspect of the retirement facilities. Nature has long been associated with spiritual well-being and can facilitate moments of reflection, meditation, and connection with a higher power. By creating spaces that promote a sense of tranquility and harmony, retired priests can find solace and spiritual rejuvenation in their daily lives. By creating environments that mimic the healing properties of nature, these facilitiescanpromotephysicalhealth,mental well-being,sustainability,andspiritualconnection .Investing in biophilic design is not only beneficial for the retired priests but also for the staff, visitors, and the surrounding community, fostering a holistic and nurturing environment for all.

Recommendations

1. Relevant stakeholders, in priests' retirement facilities including; administrators, architects, designers, healthcare professionals, and policymakers should collaborate and advocate for the inclusion of biophilic design principles in the planning and development stages of retirement facilities.
2. Staff members of priests' retirement facilities should be educated about the principles and benefits of biophilic design via workshops or seminars to enhance their understanding of the impact of the environment on the health and well-being of retired priests.
3. Biophilicdesignprinciplesshouldbeintegratedinrelevantpoliciesandregulationsgoverningretirement facility design and construction.
4. The replication of successful biophilic design interventions in other retirement facilities across South Eastern Nigeria and beyond should be encouraged.
5. Knowledge, resources, and lessons learned should be shared to inspire similar projects indifferent regions, this will in turn foster a collective effort to improve the well-being of retired priests and promote sustainable and healthy environments.

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