

# Biophilic Design: Lifestyle or Style of Life?

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**Abstract:** *Human beings have an inherent need to affiliate with nature. Biophilic design seeks to satisfy this innate need to associate and connect with nature even when surrounded by a built aesthetic habitat. The author strongly argues that incorporating elements of nature in everyday activities has been a way of life and an inherent aspect of the Indian cultural systems and has proven benefits and advantages on the human wellbeing and his/her performance.*

**Keywords:** Biophilic, Lifestyle,

2 Dimensions, 6 Elements, and 72 Attributes of Biophilic Design (Kellert, 2008b)					
I. Organic or Naturalistic			II. Place-based or Vernacular		
1. Environmental features	2. Natural shapes and forms	3. Natural patterns and processes	4. Light and space	5. Place-based relationships	6. Evolved human-nature relationships
<ul style="list-style-type: none"> <li>Color</li> <li>Water</li> <li>Air</li> <li>Sunlight</li> <li>Plants</li> <li>Animals</li> <li>Natural materials</li> <li>Views and vistas</li> <li>Façade greening</li> <li>Geology and landscape</li> <li>Habitats and ecosystems</li> <li>Fire</li> </ul>	<ul style="list-style-type: none"> <li>Botanical motifs</li> <li>Tree and columnar supports</li> <li>Animal (mainly vertebrate) motifs</li> <li>Shells and spirals</li> <li>Egg, oval, and tubular forms</li> <li>Arches, vaults, domes</li> <li>Shapes resisting straight lines and right angles</li> <li>Simulation of natural features</li> <li>Biomorphy</li> <li>Geomorphology</li> <li>Biomimicry</li> </ul>	<ul style="list-style-type: none"> <li>Sensory variability</li> <li>Information richness</li> <li>Age, change, and the patina of time</li> <li>Growth and efflorescence</li> <li>Central focal point</li> <li>Patterned wholes</li> <li>Bounded spaces</li> <li>Transitional spaces</li> <li>Linked series and chains</li> <li>Integration of parts to wholes</li> <li>Complementary contrasts</li> <li>Dynamic balance and tension</li> <li>Fractals</li> <li>Hierarchically organized ratios and scales</li> </ul>	<ul style="list-style-type: none"> <li>Natural light</li> <li>Filtered and diffused light</li> <li>Light and shadow</li> <li>Reflected light</li> <li>Light pools</li> <li>Warm light</li> <li>Light as shape and form</li> <li>Spaciousness</li> <li>Spatial variability</li> <li>Space as shape and form</li> <li>Spatial harmony</li> <li>Inside-outside spaces</li> </ul>	<ul style="list-style-type: none"> <li>Geographic connection to place</li> <li>Historic connection to place</li> <li>Ecological connection to place</li> <li>Cultural connection to place</li> <li>Indigenous materials</li> <li>Landscape orientation</li> <li>Landscape features that define building form</li> <li>Landscape ecology</li> <li>Integration of culture and ecology</li> <li>Spirit of place</li> <li>Avoiding placelessness</li> </ul>	<ul style="list-style-type: none"> <li>Prospect and refuge</li> <li>Order and complexity</li> <li>Curiosity and enticement</li> <li>Change and metamorphosis</li> <li>Security and protection</li> <li>Mastery and control</li> <li>Affection and attachment</li> <li>Attraction and beauty</li> <li>Exploration and discovery</li> <li>Information and cognition</li> <li>Fear and awe</li> <li>Reverence and spirituality</li> </ul>
3 Experiences and 25 Attributes of Biophilic Design (Kellert, 2018)					
1. Direct Experience of Nature	2. Indirect Experience of Nature		3. Experience of Space and Place		
<ul style="list-style-type: none"> <li>Light</li> <li>Air</li> <li>Water</li> <li>Plants</li> <li>Animals</li> <li>Landscapes</li> <li>Weather</li> <li>Views</li> <li>Fire</li> </ul>	<ul style="list-style-type: none"> <li>Images</li> <li>Materials</li> <li>Texture</li> <li>Color</li> <li>Shapes and forms</li> <li>Information richness</li> <li>Change, age and the patina of time</li> <li>Natural geometries</li> <li>Simulated natural light and air</li> <li>Biomimicry</li> </ul>		<ul style="list-style-type: none"> <li>Prospect and refuge</li> <li>Organized complexity</li> <li>Mobility</li> <li>Transitional spaces</li> <li>Place</li> <li>Integrating parts to create wholes</li> </ul>		
3 Categories and 15 Patterns of Biophilic Design (Browning and Ryan, 2020)					
1. Nature in the Space	2. Natural Analogues		3. Nature of the Space		
<ul style="list-style-type: none"> <li>Visual Connection with Nature</li> <li>Non-Visual Connection with Nature</li> <li>Non-Rhythmic Sensory Stimuli</li> <li>Thermal &amp; Airflow Variability</li> <li>Presence of Water</li> <li>Dynamic &amp; Diffuse Light</li> <li>Connection with Natural Systems</li> </ul>	<ul style="list-style-type: none"> <li>Biomorphic Forms &amp; Patterns</li> <li>Material Connection with Nature</li> <li>Complexity &amp; Order</li> </ul>		<ul style="list-style-type: none"> <li>Prospect</li> <li>Refuge</li> <li>Mystery</li> <li>Risk/Peril</li> <li>Awe</li> </ul>		

**Figure 1:** Three key frameworks of biophilic design: (Source: Browning and Ryan, 2020; Kellert, 2018, 2008b).

<https://www.sciencedirect.com/science/article/pii/S2095263521000479>

## 1. Introduction

The Contemporary situation in the ever-growing urban agglomerations is the obvious distancing of the population from nature and natural areas. Experts opine of such situations directly affecting the physiological, psychological, behavioral, affective and cognitive aspects of the city dwellers. Biophilic concepts and principles hold the

potential to enable human beings to develop and cherish a close and essential connection with Nature. Biophilic design, Biophilic architecture and planning helps bring closer Man and Nature and enhances the user experience with enhanced performance.

The biophilic design focuses on aspects of the natural world that contribute to human health and productivity. “New research supports measurable, positive impacts of biophilic design on health, strengthening the empirical evidence for the human-nature connection.” The term Biophilia meaning ‘love of nature’ was first coined by the social psychologist Erich Fromm. The word ‘biophilia’ was first used by Edward O. Wilson in his 1984 book ‘Biophilia’ in which he defined the term as ‘the connections that human beings subconsciously seek with the rest of life’.( Pranjale-Bokankar, 2019)

An ecosystem performs at a level greater than the sum of its individual parts, when all its constituent units are connected and sustainably dependent. Nature as an object in human surroundings have an impact on the mental and physical wellbeing. Human involvement and integration mattered just as well. This fact, the author feels, was well acknowledged by our forefathers who incorporated and interwoven nature and natural elements in every walk of life and with a complete entirety in every aspect of our living. Trees, plants, fruits and flowers, animals all mingled with humans in spirit and actual physicality, on a daily and seasonal basis, effortlessly. It is thus strongly felt that the Biophilic aspect of design and its benefits need not be incorporated as a theory anew but need to be revived, as traditional knowledge system / wisdom, with a better adaptability to our contemporary urban way of life in our context.

Professor Stephen R. Kellert from Yale University lists one of the distinct characteristics of effective Biophilic design as “*Biophilic design depends on repeated and sustained engagement with nature. An occasional, transient, or isolated experience of nature exerts only superficial and fleeting effects on people, and can even, at times, be at variance with fostering beneficial outcomes.*” (Kellert, 2015) Three types of experience of nature signify the basic categories of Biophilic Design. These include the Direct Experience of Nature, the Indirect Experience of Nature, and the Experience of Space and Place. (Calabrese, 2017)

The traditional Indian way of living has always ensured a constant linkage, (*Direct Experience of Nature*) interaction (*the Indirect Experience of Nature*) and a repetitive association to the nature and natural elements around us (*the Experience of Space and Place*). The various daily engagements and religious activities, events, periodic rituals and seasonal festivities, the customs and manners of festive celebrations, and the do’s and don’ts of age-old belief systems and superstitions have ensured a constant direct interaction of all human beings with the natural elements around us with our immediate surrounding human habitat. This is profoundly yet unconsciously weaved into our daily endeavors, seasonal engagements and annual festivals.

## 2. Direct and Indirect Experiences

Associating with and embracing the flora and fauna, water elements and atmospheric features have been a part of our living. Paying obedience to the sun god in the morning, connects us to the sky. Milking the cows of the household and putting in the fresh layer of the cow dung on the kitchen floor marks the first activity of many rural ladies even today.

Worshipping the basil/ Tulsi tree in the courtyard begins the day-long association of nature’s involvement.

Plants are seen, worshiped, used and consumed as food and medicine. A backyard full of trees is a typical feature of any vernacular settlement across the country. A green corner with the Tulsi Vrindavan practically finds a place, even in every urban tenement balcony of the metropolis. A lot of culinary basics like coriander, curry leaves, etc are a part of the kitchen garden itself. The consumption of food and household menus also changes from season to season making us aware of the rich biodiversity of the species that nature holds. Major Astronomical phenomenon link with agricultural cycles chalking out a yearly festival calendar.

The religious rituals and the seasonal cultural occasions are an interesting display of the human nearness to nature as well as respect accorded to the agricultural, in turn, the nature produce. Requirement of specific tree leaves (Referred to as ‘Patri’ for the pooja) and explicit flowers for specific rituals and customs also announces their seasonal availability. Religiously significant trees and godly associations also ensure their safety and their convenient accessibility. Mango leaves for the door Torana, Banana leaves for the pooja Torana, betel leaves in religious worship, find place in most of the religious ceremonies and also in most of residential backyards. A wide variety of different species of leaves, with religious and customary associations are a part of the religious undertakings during the Hartalika puja (a puja done by the unwed girls), Mangalagaur Puja (puja done by newly married brides), and the Ganesh festival puja (a household festival in major part of the country) which fall in the month of Shraavan and Bhadrapad of the Hindu Calendar, (August/September) after the onset of the monsoons in the state of Maharashtra. Tradition demanded the collection of these leaves for godly offerings, from the forest by individuals, thus ensuring people to go to nature and its seasonal blossoms. This also ascertains a thorough knowledge of these species and their importance as medicinal flora, by the young and the elders, and also ensures their pruning after the monsoon growths.

A number of festivals and time-honored traditions uniquely amalgamate the concept of festivities, religion and nature ensuring and accommodating the man-nature relationship in new perspectives each time. The Vat Savitri pooja brings all household ladies to the community Banyan tree to be worshiped in situ by all the married women wishing for the long life of their husbands. Tulsi Vivah, with a ritualistic veneration is a big event marking the end of Diwali celebrations in every household. Very interestingly, even the oceans and the seas are worshiped before initiating the fishing season, on Narali Purnima. The Kojagiri festival in the month of Ashwin, (late September – early October) ensures that people enjoy the late full moon night and appreciate the heavenly beauty and the depths of the star filled sky above.

The significant camaraderie with the fauna is not forgotten and is intervened for interaction with same respect and vigor. The Pola festivals worship the domestic farm help, the cows and the oxen. Nag Panchami reverse the snakes. The festivals serve to safeguard the species who due to rains,

vacate their burrows and are seen on the land. Chitravali (this is laying a morsel of food outside the plate as an offering) is laid every time the food is consumed, which also serves as food for the ants on the floor.

The tree produce also gets exclusively and yet abundantly introduced into the lifestyle as per nature's cycle. Coconut is omnipresent in Indian Culture and a coconut tree in every rural house. The (betel nut) Supari is given the godly status. The newly born in the house are showered with the first harvest of the season to celebrate the Sankranti festivities in the month of Paush (January). Mango recipes abound after the new year celebration of Gudhipadwa in Chaitra. (April). Neem leaves are consumed to start the Diwali celebrations as also the crushing of a bitter berry (kareet) is crushed under the feet in token of killing the demon Narakasura, symbolizing the removal of evil and ignorance.

It is these small things and definite relationships with the components of nature and occurrence of the natural cycle that has got defined and theorized in the west and is making a comeback with a strong advocacy for enhancing the wellbeing and performance of human beings in the urban built environments. But it is strongly felt that this should not surprise us as new discoveries for they have been our way of life since time immemorial. Our forefathers have been doing these for ages as a lifestyle principle and not as research conclusions or science lessons, though they were a result of a thorough study and a systematic understanding of the benefits from our natural surroundings. All the elements and parts of nature, its flora and fauna, its flowers and fruits, have been intelligently and perspectively incorporated into every walk of our life, repeatedly ensuring a very unconscious and effortless human interface with natural aspects.

The traditional social and cultural norms ensured a more indirect experience of nature in addition to the direct experience of space and nature through the traditional built environment. The Indian scenario exhibits a wide range of vernacular architecture deeply rooted to the land and its environmental profile. The vernacular design concerns effectively responded to the geography, geology, topography, climate and ecology, local material resulting in a very passive and sustainable built environment aptly sited and molded to the nature around. The connections of the interiors to the exteriors and the flow of landscape elements from the exterior to the interiors was an inbuilt and deep rooted effort of the designers to include nature into the built form.

It has time and again been proved that a human's physical and mental well-being relies on the quality of his relationship to the natural world around him. Biophilic design is **an approach, which strongly advocates the designed urban architecture to seek a connection of the occupants with the surrounding nature.** Biophilic designed buildings promote and incorporate natural landscape features and connectivity with the elements of nature for a more productive and healthier built environment for people. **The inherent human inclination to affiliate with nature** is thus encouraged visually and physically in the designed spaces and through the designed areas.

Exposure and interaction with nature enhances the well being of a human being. Incorporating 'nature' elements into built up environments also make the design passively responsive.

Kellert (2008) lists 2 Dimensions (organic or naturalistic or Place based and vernacular), 6 elements (Environmental features, natural shapes and forms, natural patterns and processes, light and space, place-based relationships, evolved human nature relationships) and 72 attributes of Biophilic design and later 3 experiences (Direct Experience of nature, Indirect Experience of nature and experience of Space and Place) and 25 attributes. 3 categories (Nature in space, Nature Analogues and Nature of the Space) and 15 patterns of Biophilic design are also studied. The three key frameworks holistically envelope the human- Nature relationship.

### 3. Conclusion

Visual Connection with Nature and Non-Visual Connection with Nature form the top two of the fourteen patterns of Biophilic Design. And traditionally, we Indians have been following it for ages. The Biophilic connect was very intangibly incorporated in our actions through our customs and day to day beliefs and that it also reflected in our spatial designs as principles of traditional and vernacular design. We may have lost touch with the principles which our forefathers have been advocating, but the concepts of including nature and habitat elements are inbuilt in our culture and traditional way of life. It is time to re-adopt them and re-adapt them into our designs.

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