

Chapter 1

Biophilic Design: Integrating Nature Into the Urban Environment

Lâl Dalay

 <https://orcid.org/0000-0001-7419-3552>

Istanbul Technical University, Turkey

Gülşen Aytac

Istanbul Technical University, Turkey

ABSTRACT

The concept of biophilic design emerges as a solution in an environment where urbanization drives people away from nature, and the built environment becomes increasingly critical to people's productivity; emotional, physical, and mental health; and leads to the pursuit of nature. Examples in which the understanding of including nature in the built environment is adopted, and the human-nature interaction is emphasized, which can be seen in many scales, within the framework of biophilic design. Designs with the same concern from the dimension of urban design to the scale of the architecture are designed in a way that appeals to the senses by taking shape in the human focus. In this chapter, the biophilia phenomenon is examined from different design scales, and principles of the biophilic design are discussed through theoretical bases and practices.

INTRODUCTION

Loss of green areas with urbanization causes people to break their ties with nature and therefore, need and long for nature. The term biophilia, defined as “love for life and living systems”, argues that people's relationships with nature are effective on their health and productivity. When the biophilia theory is embodied in design to strengthen the bond between man and nature, it is defined as “biophilic design”.

While the tendency of man, coming from evolution towards nature, was broadly defined by psychologist Erich Fromm for the first time with the term biophilia, as “the passionate love of man for life and all living organisms” (Fromm, 1973), by Edward O. Wilson, Biophilia, described as “The urge to affiliate

DOI: 10.4018/978-1-7998-6725-8.ch001

with other forms of life” (Wilson, 1984), at his book *Biophilia* in 1984. In the Biophilia Hypothesis, Kellert and Wilson argue that the emotional response that occurs in the direction of nature and biophilic design elements, as well as the instinctive tendency of the human to nature, originates from culture and that this knowledge is gained through symbols through learning (Kellert & Wilson, 1993).

Biophilic Design, which can be seen in any scale, from urban to architectural design, seeking an answer with the question of, *“How does the built environment affect the natural environment, and how will nature affect human experience and aspiration?”* (Kellert et al., 2008). Design at all scales, while trying to answer this question, offers a solution to strengthen the connection of humans with nature in an ecological and sustainable manner, and at the same time responds to the functional needs of the human being.

The aim of this chapter is to introduce the terms “biophilia” and “biophilic design” on a theoretical basis while focusing on the integration of biophilic design strategy at different scales into contemporary urban life with an architectural approach. For this purpose, the relationship between man and nature, which can be defined as the basis of biophilic design, will be examined by analyzing the relevant terms, design elements and parameters of biophilic design at different architectural scales.

BACKGROUND

Increasing urbanization, human population, and industrialization in cities, while driving people further away from nature, it also brings ecological problems and global warming with it. Designers, on the other hand, are trying to find design solutions for better futures by developing sustainable design methods. At this point, the Biophilic design method aims to propose design solutions that take its reference from the connection with nature by going down to the foundations of humanity in order to create spaces that will affect human well-being as well as for the future of the world (Caan, 2011; Kellert & Wilson, 1993).

There are different ways of experiencing nature, such as direct, indirect and being integrated with space. Being able to experience nature in the built environment through senses, can be considered as the key point of biophilic design within the framework of a design focusing on the human experience. Biophilic design can be experienced in a variety of sensory ways such as sight, sound, touch, smell, and taste (Kellert & Calabrese, 2015). However, in addition to sensory perception of space and integration with nature, another dimension of biophilic design is the use of materials that will affect human well-being. The materials used in the designs should not only appeal to the visual but also should be designed in a way that will not be harmful to human health.

The reason why is the well-being of humans affected by natural connection in the built environment caused by the fact that human beings are a part of nature. Although the relationship of man with nature has changed over the years, the time spent in cities since the beginning of urbanization has only been 0.01% or less since the beginning of humanity (Song, et al 2016). Considering the history of humanity, the desire and longing for a connection with nature manifests itself as an inevitable result. At this point, designers try to re-open the space for nature in built areas with sometimes re-establishing ecological ties, taking reference from historical, cultural, and geographical elements, and sometimes to produce solutions that affect the mental and physical comfort of people on smaller scales.

17 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/biophilic-design/293308

Related Content

The Project Site: Survey Studies and Evaluation of Findings

(2020). *Re-Coding Homes Through Flexible Interiors: Emerging Research and Opportunities* (pp. 41-62).

www.irma-international.org/chapter/the-project-site/232479

A Methodology for Interior Design: Manifesto Against the Photogenic

Ervin Garipand Ceren Çelik (2021). *Handbook of Research on Methodologies for Design and Production Practices in Interior Architecture* (pp. 161-178).

www.irma-international.org/chapter/a-methodology-for-interior-design/265767

Architectural Form and Energy Integration: The Impacts of Renewable Energy Use on Configuration of Form in Architectural Design

Fulya Pelin Cengizolu (2023). *Contemporary Manifests on Design Thinking and Practice* (pp. 19-46).

www.irma-international.org/chapter/architectural-form-and-energy-integration/316379

The Participation of Biophilic Design in the Design of the Post-Pandemic Living Space

Miray Gürand Timur Kaprol (2022). *Emerging Approaches in Design and New Connections With Nature* (pp. 75-106).

www.irma-international.org/chapter/the-participation-of-biophilic-design-in-the-design-of-the-post-pandemic-living-space/293311

The Embodied Impact of Existing Building Stock

Ming Hu (2020). *Examining the Environmental Impacts of Materials and Buildings* (pp. 1-31).

www.irma-international.org/chapter/the-embodied-impact-of-existing-building-stock/250560