

## Chapter 3

# Biophilic Design: Benefits of Biophilic Design Towards Sustainability

**Gamze Satılmış**

*Gazi University, Turkey*

**Özge Yalçiner Ercoşkun**

*Gazi University, Turkey*

### ABSTRACT

*Humans by nature need contact with nature for their physical and mental health, productivity, and well-being. However, the natural habitat of modern humans has become the built environment where they spend most of their time. Unfortunately, most modern buildings and cities are places that are harmful to the environment, disconnected from nature, and estranged. Therefore, the need for biological contact with nature has become increasingly important in high-rise and urbanizing societies. In this context, in this study, the concept of biophilic (healing) design is explained; its physical, social, environmental, and economic benefits are revealed; and its advantages against the most important problems of the 21st century are discussed at different scales. By examining different world examples of biophilic cities and biophilic buildings, a matrix was formed, and biophilic design principles and the benefits used were evaluated. Finally, the difficulties in implementing the biophilic design are mentioned.*

### INTRODUCTION

People, by their nature, need to be together and contact nature for their physical and mental health, efficient work, and well-being. However, while modern cities have high levels of stress, mental health problems, high crime levels, and diseases, the approach adopted for the design of the modern urban environment has resulted in the unconscious consumption of energy and resources, loss of important ecosystem and biodiversity, widespread chemical pollution, contamination, intense atmospheric degradation, climate change, and alienation of humans from nature (Kellert, 2008; Soderlund & Newman, 2015). However, as Johnson stated, “leaving from nature is leaving from happiness” (Samuel Johnson). For this reason, the

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need for biological contact with nature is gaining importance day by day in high-rise and urbanizing societies. In many ways, the natural habitat of modern humans has become the built environment in which they spend most of their time. But modern buildings and cities are not built in accordance with human nature. According to Kellert, these results are not an inevitable by-product of modern urban life, but rather a fundamental design error. Modernist designs have created cities and buildings that lack the nature and living organisms we need genetically, while perceptively changing the environment to suit human needs, and have cut people off from nature. However, people have not been able to adapt physiologically, emotionally, or psychologically to gray cities, far from contemporary nature. While this situation returns to human life as a physical disadvantage, some psychological effects such as stress and difficulty in focusing have also negatively affected the quality of life. In this context, it is seen that biophilic design can reduce stress, improve cognitive function and creativity, improve our health and accelerate recovery (Beatley, 2016). The biophilic design also provides many benefits in health, socio-psychology, economy, environment, and sustainability issues. As the world population continues to urbanize, these benefits become more important than ever. Given the benefits of connecting people in the built environment to nature, “how can we achieve biophilic design?” The question comes to the fore. In this context, a study that explains what the concept of biophilic (healing) design is, justifies why design that is compatible with human physiological and psychological structure is necessary, investigates whether it can be proposed as a solution to environmental problems, which is the most important problem of our age, and reveals the advantages it provides at different scales is aimed.

## **BACKGROUND**

### **The Concept of Biophilia and the Emergence of Biophilic Design**

First of all, it is necessary to define the concept of biophilia in order to understand biophilic design. Biophilia was first described in the 1970s by the psychoanalyst Fromm as a love of life and life processes (Genç et al., 2018). Later, American biologist and evolutionary theorist Edward O. Wilson defined biophilia in his work titled “In Search of Nature” as “an innate tendency to focus on life and processes close to reality” and claimed that the connection to nature has not only a physiological but also a genetic basis. According to Wilson, this biophilic tendency develops as part of survival and therefore encompasses certain traits that remain in human even in modern cities (Wilson, 1996).

Today, the increase in the built environment and the population living in cities has given the concept of “biophilia” an important place in our lives. Wilson and his ecologist colleague, Kellert assume that fostering this innate love and connection to nature is essential to the well-being of modern urban man. They suggest that humans are biologically designed to respond positively to contact with nature and that this relationship can contribute to their intellectual, emotional, and spiritual satisfaction (Soderlund & Newman, 2015).

Human has been intertwined with nature from the day of his existence. From the past to the present, he has tried to shape his life by drawing inspiration from his experiences in nature. Most importantly, man has realized that the protecting human life and continuity is through the relationship between nature and human. For this reason, he tried to strengthen his bond with nature, both physically and emotionally, by exploring nature in depth. However, with industrialization and urbanization and the rapid advancement of technology, human-made objects have proliferated and the built environment has gained weight. As

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