



## “Analysis and Evaluation of the Role of Natural Patterns in Creating Architectural Spaces Using Successful Global Examples”<sup>1</sup>

**Tina Mirzazadeh Ghahjavarestani<sup>2</sup>, Abdolreza Mohseni<sup>3</sup>, Negar Nabavi Tabatabaei<sup>4</sup>**

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### Abstract

Humans alter their surroundings according to their needs, goals, and values, leading to rapid changes that can harm the environment and disrupt the human-environment ecosystem. However, in connection with living beings, nature breathes the spirit of life into them and ensures their growth. One of the key measures in design is to take inspiration from nature. Nature has always been a source of inspiration for architects. Natural patterns enhance the visual appeal of architectural spaces while also boosting their performance and sustainability.

The main questions in this research are: “How can we achieve suitable design by creatively utilizing existing natural patterns?”, and “What are the teachings of nature in architectural design?” This research qualitatively assesses the influence of natural patterns in design through successful global case studies, aiming to identify effective creative patterns from nature for architectural design. In the research method, by referring to texts, the meaning and patterns in nature and the principles of sustainable architecture are first discussed and then analyzed with a brief review of designs and buildings inspired by nature. The research process uses a descriptive-analytical method, and information is collected through library research. In this regard, the analysis is based on case studies, and the research findings indicate that artificial structures made by human hands and the continuity between natural systems are noteworthy be-

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2. Master student of housing architecture, Department of Architecture, Pars Architecture and Art Higher Education Institute, Tehran, Iran. (Corresponding Author). Email: mirzazadeh2867@gmail.com
3. Assistant Professor, Department of Interior Architecture, Pars Architecture and Art Higher Education Institute, Tehran, Iran. Email: mohseniabdolreza@gmail.com
4. Visiting professors, Department of Interior Architecture, Pars Architecture and Art Higher Education Institute, Tehran, Iran. Email: negar.tabatabaei@yahoo.com

cause the dynamism in nature drives its systems towards greater efficiency and optimization. Instead of replicating living organisms, the rules and principles of nature and their harmony and compatibility are considered because everything in nature has harmony and balance of forces. As a result, the universe has structure and construction in the elements of nature, and it is a solution to understanding the secrets of nature in science and art and its role in architectural design. Incorporating natural patterns in architecture enhances aesthetic appeal while improving performance and sustainability. Successful global examples demonstrate the creative and efficient application of natural patterns in architectural design. In other words, this article examines and analyzes the role of natural patterns in creating architectural spaces and their impact on the environment and society, evaluating successful global examples.

In contemporary architecture, the utilization of natural patterns has emerged as a novel approach to architectural design, attracting the attention of architects and gaining increasing recognition as a source of inspiration and a design guide. Driven by their objectives, values, and needs, humans have modified space and, in turn, been influenced by this altered environment. Some consider these rapid environmental transformations destructive, causing disruptions in the ecological order of the “human environment”, and insist that any significant changes in natural space must be undertaken with a long-term perspective on their impact on humans, anticipating both negative and positive consequences.

Nature is ubiquitous and exerts its influence on everything. It infuses living organisms with vitality and fosters their growth. A key design principle in architecture, arts, and science is the integration of patterns and inspiration from nature.

Throughout history, nature has manifested in architecture in various forms. This emergence stems from diverse concepts underlying the ideas and perspectives of their creators. The discovery of new scientific concepts has transformed human interactions with nature, resulting in various architectural trends.

A novel method of understanding the interplay between nature and humans and the establishment of order and harmony in this relationship is described as brimming with beauty.

This article aims to answer these questions: “How can we achieve appropriate design through the creative use of existing natural patterns?”, and “What are the teachings of nature in architectural design?” Furthermore, the article analyzes and assesses the role of natural patterns in creating architectural spaces, examining successful global examples.

This article is enriched by the insights of individuals like Ruskin in his book “The Seven Lamps of Architecture” and Christian Norberg Schultz in “The Spirit of Place,” among others, providing valuable guidance.

**Keywords:** Naturalism, Organic architecture, Contextual architecture, Teachings of nature, Patterning, Architectural design