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ORIGINAL

Architecture and Nature: Creating Spaces that Promote Human Well-Being

Arquitectura y Naturaleza: Creando Espacios que Fomentan el Bienestar Humano

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ABSTRACT

Introduction: the article aims to explore the relationship between architecture and nature, focusing on how this integration can foster human well-being and sustainability in built environments.
Objective: the study seeks to contribute to knowledge about natural architecture and to act as an educational resource that raises awareness of the importance of integrating nature and technology in architectural design.
Method: an exhaustive narrative review of the existing scientific literature was carried out, consulting databases such as SCIENCEDIRECT, SCOPUS and SCISPACE. Specific terms and Boolean operators were used to refine the search, compiling a final corpus of ten articles relevant to the review.
Results: the results of the review highlight the importance of integrating nature in architecture, showing that a biophilic design can reduce stress and improve people's health and well-being, as well as highlighting the need to adopt sustainable technologies in architecture to achieve a harmonious relationship with the environment, in addition, the importance of empathy in design was highlighted, considering the emotional experiences of users.
Conclusions: this study concludes that there is a growing need to comprehensively address environmental and social challenges, and to promote an awareness of the fragility of ecosystems and their relationship to contemporary architecture. It is suggested that integrating nature not only affects design but also improves people's quality of life.

Keywords: Architecture; Nature; Creating Spaces; Human Well-Being.

RESUMEN

Introducción: el artículo tiene como objetivo explorar la relación entre la arquitectura y la naturaleza, enfocándose en cómo esta integración puede fomentar el bienestar humano y la sostenibilidad en los entornos construidos.
Objetivo: el estudio busca contribuir al conocimiento sobre arquitectura natural y actuar como un recurso educativo que aumente la conciencia sobre la importancia de integrar la naturaleza y la tecnología en el diseño arquitectónico.
Método: se realizó una revisión narrativa exhaustiva de la literatura científica existente, consultando bases de datos como SCIENCEDIRECT, SCOPUS y SCISPACE. Se emplearon términos específicos y operadores booleanos para afinar la búsqueda, recopilando un corpus final de diez artículos relevantes para la revisión.
Resultados: los resultados de la revisión resaltan la importancia de integrar la naturaleza en la arquitectura, mostrando que un diseño biofílico puede reducir el estrés y mejorar la salud y bienestar de las personas, así como resaltar la necesidad de adoptar tecnologías sostenibles en la arquitectura para lograr una relación armoniosa con el entorno, además, se destacó la importancia de la empatía en el diseño, considerando las experiencias emocionales de los usuarios.
Conclusiones: este estudio concluye que existe una creciente necesidad de abordar de manera integral los desafíos ambientales y sociales, y de promover una conciencia sobre la fragilidad de los ecosistemas y su relación con la arquitectura contemporánea. Se sugiere que integrar la naturaleza no solo afecta el diseño sino también mejora la calidad de vida de las personas.

Palabras clave: Arquitectura; Naturaleza; Creando Espacios; Bienestar Humano.

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INTRODUCTION

It is a fascinating topic that has been researched and reflected for centuries. The fusion between nature and architecture has been a constant throughout human history. From the first human shelters to innovative contemporary constructions, nature's influence on architecture has been undeniable. However, this relationship has taken on a new dimension in the modern era, marked by rapid urbanization and growing environmental awareness.[1] mention that the interaction between nature and architecture is aesthetic and has profound implications for people's quality of life and the sustainability of the built environment.[2] mention that nature is a burning issue within the environment and an important facet that must be dealt with daily, affecting everything that surrounds human beings.

Humans have always conversed with nature; since they began building and using shelters, nature has been an important part of plans and designs. Sustainable architecture can, therefore, be considered as the responsible development and direction of the creation of a built environment based on ecological principles and efficient use of resources, with the understanding that buildings designed according to sustainability principles aim to minimize their negative impact on the environment through the efficient use of energy and other resources.[3]

In this context, the design of places to live involves the knowledge required to execute a project and how to understand the emotional life of the people who will inhabit the finished work.[4] and [5] state that the architecture of living spaces involves not only the knowledge required for its execution but also an understanding of life; due to the field of landscape architecture, nature is not limited to the nature of nature itself, but is understood in a broad sense as the nature of nature as an object that humans look at and give meaning to.[6]

Therefore, architecture has been influenced by nature for a long time, as architects have often sought inspiration in the natural world for their designs. Recently, two related movements have emerged that focus specifically on incorporating nature into building design: biomimicry and biophilic design[7] so integrating nature into buildings is a widespread concern. In addition, they sometimes attempt to establish a dialogue with the urban environment and sometimes with the immediate landscape or simultaneously with both. These are works in various contexts, such as those of [8] who states that it is clear that our environment is becoming increasingly deteriorating and that the problems this entails are having a more direct impact on human health and activities. For this reason, concern about environmental problems is increasing and becoming more widespread. Faced with the prospect of our planet becoming uninhabitable, humans are becoming aware, somewhat reluctantly, of the importance of ecosystems and the fragility of their balance.[9]

METHOD

A comprehensive narrative review was conducted to explore the existing scientific literature, consulting the following databases: ScienceDirect, SCOPUS, and SCISPACE. To refine the search, the following terms were used: "architecture," "natural," and "biomimetic." In addition, the Boolean operators OR and AND were used to refine and broaden the search scope, and the search period was extended from April to May 2023, considering articles published between 2021 and 2023 for review. This search covered texts written in any language, specifically excluding manuscripts that were case reports, interviews, letters to the editor, theses, and books due to their less empirical nature or specific focus.

Within the aforementioned databases, 16 articles were initially identified using the search thread designed. Next, two duplicate articles were removed. Subsequently, two articles that did not align with the study objective and two others that did not meet the established inclusion criteria were excluded. As a result of this filtering and selection process, a final corpus of 10 articles relevant to the review was obtained.

[8] highlights the importance of incorporating nature into Badajoz's architecture, emphasizing its key role in creating meaningful spaces. He focuses on the relationship with the environment, originality in design, and innovation in construction, aspects present in the projects analyzed. These results underscore how architecture can contribute to attractive and functional spaces that integrate well with the landscape, enriching urban and peri-urban environments.

Table 1. Characteristics of the included study

Title	Objective/Sample	Key findings
Learning from nature Biodigital strategy for sustainable architecture	Identify and classify the concepts that define environmentally friendly architectural projects.	It demonstrates that we are witnessing a proactive attitude, a form of bio-learning that contributes to the benefit and development of a more humane environment.
Empathy and architecture: a phenomenological proposal. Towards an enactivist theory of urban-architectural design	Develop an exactivist theory of urban-architectural design that focuses on the influence of architecture on the emotions of inhabitants.	The study highlights the importance of designing urban and architectural environments that take emotional experiences into account.
The Co-Constitutive Relationship of Humans and Nature	Share valuable ideas and key points from the document to improve understanding of the co-constitutive relationship between humans and nature in architectural design.	The project aims to rethink the relationship between architecture and the natural environment, focusing on creating a symbiosis between human beings, man-made elements, and nature.
Architecture Learns from Nature. The Influence of Biomimicry and Biophilic Design in Building	Identify and evaluate the influence of biophilic elements on the perception of a space's habitability.	It demonstrates that biophilic design offers benefits such as stress reduction, improved well-being, and productivity.

Architecture and urban planning: notions from sustainability	Promote the importance of sustainable architecture and urban planning in the rational and responsible creation of livable spaces.	It highlights the need to adopt sustainable technologies in architecture to achieve a harmonious relationship with nature and the environment.
Nature-architecture. Palladio's reflection: design, landscape, and territory	Analyze and gain an in-depth understanding of the classical and humanistic conception of this relationship in the theory, architecture, and drawings of the Renaissance architect.	The study's findings highlight Palladio's perspective on the connection between architecture and nature.
Architecture in the Landscape, Nature in Architecture	To learn how contemporary architecture in the province of Badajoz incorporates nature into its design.	The importance of integrating nature into architecture.
Towards a Definition of the Term "Nature-Equivalent Architecture"	To promote architecture that seeks to integrate and reflect nature in its designs, both aesthetically and functionally.	They focus on the notion of architecture that emulates nature, seeking to merge construction with the natural environment in a sustainable way.
Notes on Bioclimatic Architecture	To provide a concise description of the problem, as well as the objectives, scope, and limitations in order to provide appropriate solutions in bioclimatic design.	The integration of environmental, natural, and artificial variables, and the design process that includes stages of global and detailed architectural conceptualization.

[1] mention that although climate change has sparked interest among governments worldwide, strategies to counteract its effects remain limited. We are facing a complex crisis encompassing both environmental and social aspects: a series of new challenges require a global vision considering the crisis as a comprehensive situation. An approach that combines environmental, economic, and social dimensions into a single outcome is needed.

[3] refer to the fact that, in recent years, there has been a growing focus on sustainability in architecture and urban planning. This approach promotes the creation of livable spaces rationally and responsibly to conserve natural, financial, and human resources, thus ensuring the social well-being of present and future generations. As a result, contemporary scientific research focuses on assessing the economic cost and environmental impact to achieve adequate planning and design of buildings and cities.

In recent decades, interest has increased in incorporating nature into architecture, whether through biomimicry or biophilic design. Both approaches start from the premise that nature can inspire architecture and that imitating its processes and patterns can create healthier, more efficient, and more sustainable spaces. Biomimicry consists of imitating the forms, processes, and functions of nature to design buildings and structures that are more efficient, resilient, and adaptable.[7]

Similarly, [8] explains that, throughout the study, it has become clear that concern for integrating nature is common in the buildings studied. Likewise, two different attitudes have emerged in the projects analyzed: the creation of landmarks in the profile or skyline of the environment or mimicry with it. Therefore, the relationship with the place is fundamental in all the works.

Our environment is becoming increasingly deteriorated, along with the problems that this causes. For this reason, concern about environmental issues is growing and becoming more widespread. Faced with the prospect of our planet becoming uninhabitable, humans are becoming aware, somewhat reluctantly, of the importance of ecosystems and the fragility of their balance [9]

CONCLUSIONS

Finally, the study could contribute to disseminating knowledge about natural architecture and act as an educational resource for students, professionals, and the general public, raising awareness about the importance of integrating nature and technology in architectural design.

The limitations were that few files related to the topic were found, and searching for information related to the topic was a bit complicated since many did not talk about the specific topic: researching the long-term impact of integrating nature into architecture in terms of health, well-being, and sustainability. How can biophilic design principles be effectively applied in different regions of the world, considering local needs and sensitivities? Why is the interaction between architecture and nature necessary?

Rapid population expansion and uncontrolled urban growth are causing severe environmental damage, as many are unaware of or ignore the global repercussions. Although some countries are adopting different types of architecture in their buildings, such as biophilic, biomimetic, and landscape architecture, to reduce both emotional and environmental impact, many still show indifference to the consequences for the natural environment and people's emotional well-being. Despite previous attempts to integrate nature into architecture, technological advances could further facilitate this interaction.

FINANCING

None.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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