

# Architectural Multispecies Building Design: Concepts, Challenges

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## Abstract

In recent years, there has been a paradigm shift in architectural design towards embracing a more inclusive approach that considers not only human inhabitants but also the diverse species with which we share our environment. This emerging field, known as architectural multispecies design, seeks to create built environments that accommodate the needs of various living organisms, fostering biodiversity and ecological resilience. This article explores the concepts, challenges, and design processes involved in architectural multispecies building design. Architectural multispecies design is rooted in the recognition of the interconnectedness of all life forms and the acknowledgment of the impact of human activities on ecosystems.

**Keywords:** Environment • Biodiversity • Ecosystem

## Introduction

Multispecies building design aims to support and enhance biodiversity within urban environments by providing habitats, food sources, and shelter for a variety of species, from insects and birds to small mammals and plants. Rather than viewing humans as separate from nature, multispecies design promotes the idea of coexistence and coevolution, wherein human-built environments integrate seamlessly with natural ecosystems, creating mutually beneficial relationships between different species.

## Literature Review

Multispecies building design draws inspiration from biophilic design principles, which emphasize the innate human connection with nature. By incorporating natural elements such as vegetation, water features, and natural light into architectural spaces, designers can create environments that promote well-being and ecological harmony. Rapid urbanization has led to the destruction of natural habitats, forcing many species to adapt to urban environments or face extinction. Multispecies building design must address the challenge of habitat loss by providing alternative habitats within urban areas. Creating environments that accommodate multiple species requires careful consideration of species interactions, including competition for resources, predation, and mutualistic relationships. Designers must anticipate and mitigate potential conflicts between different species to ensure the success of multispecies building projects. Multispecies buildings require ongoing maintenance and management to ensure the health and well-being of all inhabitants. This includes monitoring habitat conditions, controlling invasive species, and providing supplementary resources as needed. Before beginning the design process, architects must conduct a thorough analysis of the site, including its ecological context, existing species populations, and environmental conditions.

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## Description

This information informs design decisions and helps identify opportunities to enhance biodiversity. Multispecies building projects often involve collaboration with various stakeholders, including ecologists, biologists, community members, and local authorities. Engaging stakeholders early in the design process ensures that diverse perspectives are considered and helps build support for the project. The next step is to integrate natural elements into the building design, such as green roofs, vertical gardens, wildlife corridors, and water features. These elements provide habitats, food sources, and migration routes for diverse species, enhancing biodiversity within the built environment. Sustainable and non-toxic materials should be prioritized in the construction of multispecies buildings to minimize environmental impact and ensure the health and safety of inhabitants. Designers should also consider the life cycle of materials and their potential to support biodiversity. Once the building is completed, ongoing monitoring and adaptation are essential to assess the effectiveness of design interventions and address any issues that arise. This may involve tracking species populations, monitoring habitat conditions, and making adjustments to the design as needed [1-6].

## Conclusion

Architectural multispecies design represents a holistic approach to building design that considers the needs of all living organisms, not just humans. By integrating principles of biodiversity conservation, coexistence, and biophilic design, multispecies buildings can contribute to ecological resilience, promote human well-being, and foster a deeper connection with the natural world. Despite the challenges involved, the growing interest in multispecies design suggests that it has the potential to transform the way we think about architecture and urban development in the 21st century.

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## Conflict of Interest

The author declares there is no conflict of interest associated with this manuscript.

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