



## MODERN INTERIOR ECO-DESIGN FOR HOTELS: SUSTAINABLE STRATEGIES AND AESTHETIC SOLUTIONS

BULHAKOVA Tetiana<sup>1</sup>, YANG Ziheng<sup>1,2</sup>

<sup>1</sup> Kyiv National University of Technologies and Design, Kyiv, Ukraine

<sup>2</sup> Kyiv Institute at Qilu University of Technology, Jinan, People's Republic of China  
[bulhakova.tv@knutd.com.ua](mailto:bulhakova.tv@knutd.com.ua), [1119762256@qq.com](mailto:1119762256@qq.com)

*As environmental sustainability becomes a priority in contemporary architecture and design, hotels are increasingly adopting eco-design strategies that blend sustainability with high-end aesthetics. This paper explores how eco-design principles are applied in hotel interiors, focusing on material selection, spatial composition, biophilic design, and energy-efficient technologies. Through case studies of LEED-certified hotels such as Bardessono in California, 1 Hotel Brooklyn Bridge in New York, and Six Senses Fiji, this study highlights the integration of natural materials, innovative lighting systems, and sustainable furniture to enhance guest experience while reducing ecological impact. The findings demonstrate that successful eco-design not only meets sustainability standards but also redefines luxury through nature-inspired aesthetics and human-centric spatial organization.*

**Key words:** eco-design, sustainable materials, biophilic design, hotel interiors, energy efficiency, green architecture, hospitality sustainability, aesthetic perception, interior composition.

### INTRODUCTION

With the increasing urgency of environmental challenges such as climate change, resource depletion, and pollution, the hospitality industry is transforming its approach to interior design. Beyond energy efficiency and material selection, eco-design is shaping the visual and sensory experience of hotel spaces, enhancing comfort and well-being while reducing environmental impact. Modern eco-hotels prioritize a seamless integration of natural elements, smart technologies, and spatial aesthetics to create immersive environments that balance sustainability and luxury.

### PURPOSE

This paper examines the role of material selection, lighting design, biophilic principles, and spatial organization in achieving sustainable and visually compelling interiors in contemporary hotels. By analyzing case studies, we identify strategies that successfully integrate ecological responsibility with artistic excellence.

### RESULTS AND DISCUSSION

Based on the analysis of leading eco-friendly hospitality projects, several key strategies have been identified that contribute to a successful balance between sustainability and aesthetics in hotel interiors. These strategies focus on the



integration of biophilic principles, the selection of sustainable materials, and the optimization of lighting and spatial composition.

Biophilic design plays a central role in contemporary hotel interiors, aiming to strengthen the connection between humans and nature. The inclusion of indoor gardens, vertical green walls, and the strategic use of natural lighting enhances both visual appeal and guest well-being. At Parkroyal Collection Pickering (Singapore), lush greenery cascades from the building's facade into the interior, fostering a seamless transition between outdoor and indoor spaces. Organic textures, flowing patterns, and earthy tones contribute to an atmosphere of tranquility, aligning with the principles of biophilic design.

Sustainable material selection is another defining aspect of eco-friendly hotel interiors, emphasizing both environmental responsibility and aesthetic quality. The use of reclaimed wood and bamboo, as seen in Bardessono Hotel (California), brings warmth and authenticity to the interior while reducing the demand for newly sourced materials. Recycled metals and glass elements are frequently incorporated into decorative features, enhancing the ambiance with an industrial yet refined aesthetic. Additionally, the application of low-VOC paints and natural fibers in upholstery and curtains significantly improves indoor air quality while maintaining a high-end design aesthetic.

Lighting and spatial composition further shape the experience of eco-friendly hotel spaces. Natural light optimization through expansive windows and reflective surfaces, as exemplified by 1 Hotel Brooklyn Bridge (New York), reduces reliance on artificial lighting while creating a bright, open atmosphere. In combination with layered lighting techniques that incorporate ambient, task, and accent lighting, the spatial experience is carefully curated to enhance depth and comfort. The spatial organization of eco-hotels often embraces open-concept layouts, minimizing partitions to encourage airflow and maximize daylight penetration. Green zoning, using plants and natural elements as dividers, supports a flexible and adaptive environment that aligns with sustainable design philosophies.

A number of renowned eco-hotels serve as exemplars of how sustainability and aesthetics can be harmoniously integrated into interior design. Bardessono Hotel in California (Fig. 1) [1], one of the few LEED Platinum-certified luxury hotels, incorporates solar energy, geothermal heating, and reclaimed wood to create a space that is both environmentally responsible and visually appealing. The interiors feature handcrafted furniture made from repurposed local materials, offering a seamless blend of natural warmth and contemporary sophistication.

Similarly, 1 Hotel Brooklyn Bridge in New York (Fig. 2) [2] is an urban eco-retreat that redefines industrial design through sustainability. The hotel extensively utilizes repurposed wood, recycled steel, and organic textiles, creating a raw yet refined aesthetic. The integration of an advanced rainwater collection system and energy-efficient lighting further enhances its environmental impact, demonstrating how urban hospitality spaces can adopt green principles without sacrificing comfort or style.



**Fig. 1.** Bardessono Hotel in California



**Fig. 2.** 1 Hotel Brooklyn Bridge in New York

On a different scale, Six Senses Fiji (Fig. 3) [4] exemplifies a biophilic approach to hospitality design in a tropical setting. The resort's architecture is built around locally sourced bamboo, thatch, and stone, fostering a seamless indoor-outdoor experience. Passive cooling techniques eliminate the need for excessive air conditioning, while open layouts encourage natural airflow and connectivity with the surrounding landscape. The use of earthy textures, natural dyes, and ocean-inspired motifs enhances the sensory experience, emphasizing a deeper connection between design and environment.



**Fig. 3.** Six Senses Fiji in the South Pacific [4]

These case studies illustrate how sustainability in hotel interiors is not simply a matter of energy efficiency or material sourcing but extends to spatial organization, guest interaction, and multi-sensory experience. Each of these projects reflects a tailored approach to eco-design, proving that sustainability and luxury can coexist harmoniously.



## CONCLUSIONS

This study demonstrates that sustainable hotel interiors go beyond ecological responsibility—they redefine contemporary luxury by integrating nature, innovative materials, and intelligent spatial solutions. Successful eco-design harmonizes functionality, aesthetics, and sustainability, offering guests an immersive and environmentally conscious experience. Future research should explore the psychological and sensory impact of eco-friendly hospitality environments, as well as emerging trends in digital sustainability, such as AI-driven climate control systems and biodegradable architectural materials.

## REFERENCES

1. Bardessono. *Bardessono Hotel and Spa | Luxury Spa Resorts in Napa Valley*. URL: <https://www.bardessono.com/gallery.htm> (date of access: 06.03.2025).
2. 1 Hotel Brooklyn Bridge. URL: <https://www.1hotels.com/brooklyn-bridge> (date of access: 06.03.2025).
3. Patel A., Kidd A., Roetzel A., DeKay M. A critical review of Biophilic design and its design framework. *Architectural Science and User Experience: How can Design Enhance the Quality of Life: 55th International Conference of the Architectural Science Association 2022*, Curtin University, Perth, Australia. 2022. P. 22-31
4. Six Senses Residences Fiji. URL: <https://www.sixsenses.com/en/residences/fiji/> (date of access 06.03.2025)

## **БУЛГАКОВА Т., ЯН Цзихен** **СУЧАСНИЙ ЕКО-ДИЗАЙН ІНТЕР'ЄРУ ДЛЯ ГОТЕЛІВ: СТРАТЕГІЇ** **СТАЛОГО РОЗВИТКУ ТА ЕСТЕТИЧНІ РІШЕННЯ**

*Екологічна стійкість стає пріоритетом у сучасній архітектурі та дизайні, тому готелі все частіше застосовують стратегії еко-дизайну, які поєднують екологічність з високою естетикою. У цій статті досліджується, як принципи екодизайну застосовуються в готельних інтер'єрах, з акцентом на виборі матеріалів, просторовій композиції, біофільному дизайні та енергоефективних технологіях. На прикладах таких сертифікованих за стандартом LEED готелів, як Bardessono в Каліфорнії, 1 Hotel Brooklyn Bridge у Нью-Йорку та Six Senses на Фіджі, це дослідження висвітлює інтеграцію природних матеріалів, інноваційних систем освітлення та екологічних меблів для покращення вражень гостей та зменшення впливу на довкілля. Результати дослідження демонструють, що успішний еко-дизайн не лише відповідає стандартам сталого розвитку, а й переосмислює поняття розкоші завдяки естетиці, натхненній природою, та просторовій організації, орієнтованій на людину.*

**Ключові слова:** еко-дизайн, екологічні матеріали, біофільний дизайн, інтер'єри готелів, енергоефективність, зелена архітектура, сталість гостинності, естетичне сприйняття, композиція інтер'єру.