



## Sustainable Approaches to Inclusive Design in 4-Star Hotels: A Systematic Review of User Comfort in Circulation Spaces

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### ABSTRACT

*This study presents a systematic review of sustainable approaches to inclusive design in four-star hotel circulation spaces, with a focus on user comfort. Fifteen peer-reviewed studies, published between 2022 and 2025, were analyzed to synthesize current knowledge on sustainability strategies, inclusivity measures, and comfort outcomes in hotel circulation areas such as lobbies, corridors, and staircases. Findings reveal that sustainability interventions such as passive ventilation, natural lighting, and energy-efficient materials enhance comfort but are rarely applied to circulation zones. Inclusive design principles improve accessibility, yet experiential comfort in transitional spaces is underexplored. The review highlights a critical gap in integrating sustainability and inclusivity within circulation areas, emphasizing the need for design guidelines and empirical studies tailored to urban four-star hotels in Lagos. The study provides insights for architects, planners, and researchers seeking to optimize user comfort while promoting sustainable and inclusive hotel environments.*

**Keywords:** Sustainable Design, Inclusive Design, Circulation Spaces, User Comfort, Four-Star Hotels

### INTRODUCTION

#### Background of the Study

In contemporary built environment research, sustainable and inclusive architectural strategies are recognized as critical determinants of occupant comfort and spatial usability in hospitality environments. Studies have demonstrated that integrating human-centred design principles, such as accessibility, natural lighting, and spatial legibility, can significantly improve users' comfort and satisfaction in built spaces (Abdulaali et al., 2025; Akinyemi, Adewole, & Tejumaiye, 2024). In hotel architecture, where circulation spaces such as lobbies, corridors, stairwells, and access routes form the backbone of user movement, these design principles are particularly important. For instance, research on indoor environmental quality illustrates how indoor air quality, acoustics, lighting, and thermal conditions correlate with occupant comfort and satisfaction in green and sustainable hotels (Abdulaali et al., 2025). Moreover, inclusive design frameworks that prioritize barrier-free access and user-centred layouts are increasingly advocated in architectural scholarship to ensure equitable use by diverse populations (Ekhaese & Oyelude, 2025).

#### Problem Statement

The growing attention to sustainability and inclusivity in architectural research, there remains a persistent gap in systematic synthesis specifically linking these approaches to user comfort in circulation areas of 4-star hotels. While studies have examined biophilic strategies in hospitality settings (Akinyemi et al., 2024) and user comfort in hotel indoor environments (Abdulaali et al., 2025), the specific intersection of inclusive circulation design, sustainable architectural approaches, and guest comfort outcomes in mid-range hotel settings has not been comprehensively reviewed. Furthermore, existing research often focuses on general environmental quality or external sustainability metrics, with limited emphasis on how circulation spaces critical to movement and wayfinding in hotels affect comfort and accessibility.

#### Aim and Objectives

This systematic review aims to synthesize existing research on sustainable and inclusive design approaches as they relate to user comfort in circulation spaces of 4-star hotels. The objectives are to

- i identify design strategies linked to sustainability and inclusivity in hotel architecture,

- ii examine how these strategies influence user comfort within circulation areas,
- iii highlight research gaps and opportunities for future practice and scholarship.

### **Justification of the Study**

This review is justified by the need to consolidate fragmented research findings on sustainability, inclusivity, and comfort into a coherent thematic framework that can inform architects, hotel designers, and hospitality researchers. Although individual studies have explored components such as indoor environmental quality and biophilic design in hospitality (Abdulaali et al., 2025; Akinyemi et al., 2024; Sholanke et al., 2025), there is no comprehensive review that focuses on circulation spaces as a unique spatial and functional category within hotels. By addressing this gap, the study advances knowledge that can enhance design quality, accessibility, and guest satisfaction in hotel environments.

### **Scope and Limitations**

This review focuses on scholarly articles published from 2022 to the present that address sustainable and inclusive architectural design in hotel settings with relevance to user comfort. Studies that do not directly engage with circulation spaces or lack empirical or conceptual linkage to comfort-related outcomes will be excluded. The review is limited by the availability and quality of published research in selected databases and may not include unpublished or proprietary industry studies.

## **LITERATURE REVIEW**

### **Sustainable Design in Hotel Architecture**

Sustainable design in hotel architecture involves strategies that minimise environmental impacts while enhancing operational performance and guest experiences. Recent research highlights that sustainable interior design criteria including energy efficiency, environmental comfort, ergonomic considerations, and biophilic elements positively influence both operational performance and user satisfaction in hotel settings (Che Abdullah et al., 2023). Indeed, integrating energy-efficient systems, natural ventilation, and environmentally responsive materials is increasingly recognised as essential for modern hotel architecture that seeks to reduce carbon footprints while maintaining high comfort standards. Such sustainable design interventions are not only relevant for luxury hotels but also for mid-range 4-star establishments that balance cost effectiveness with ecological responsibility and guest satisfaction.

### **Principles of Inclusive Design in Hospitality Buildings**

Inclusive design principles emphasise accessibility, equitable use, and adaptability to diverse user needs, which are crucial in hospitality environments where users vary widely in age, ability, and cultural background. Although much of the inclusive design literature has historically focused on public buildings and innovation hubs, the fundamental principles of accessibility compliance, spatial flexibility, and universal usability apply directly to hotel circulation spaces (Ekhaese & Oyelude, 2025). Inclusive architecture aims to remove barriers that limit movement and participation, ensuring that all users regardless of physical ability can navigate and use hotel facilities comfortably. Research emerging from global architectural discourse further suggests that embedding inclusivity into design frameworks fosters social participation and enriches user engagement across varied contexts.

### **Circulation Spaces in 4-Star Hotels**

Circulation spaces in hotels such as lobbies, corridors, staircases, and access routes play a central role in shaping user experiences because they mediate movement and spatial orientation. Although specific empirical research focusing on circulation in 4-star hotels is limited, broader hospitality environment reviews demonstrate that physical environmental elements significantly impact guest movement patterns and satisfaction. A large systematic review of hospitality research emphasised the importance of physical environment quality and spatial organisation in shaping overall guest experiences, highlighting the need for more research on how spatial elements such as circulation influence comfort and behavioural responses (Tuzovic et al., 2024). Effective circulation design also aligns with sustainable approaches when it promotes efficient wayfinding, reduces congestion, and enhances spatial legibility.

### **User Comfort in Built Environments**

User comfort within the built environment emerges from multiple environmental parameters, including thermal comfort, indoor air quality, acoustics, lighting, and spatial layout. In hospitality contexts, comfort is closely linked to satisfaction, behavioural intentions, and perceived value. For example, a study on green hotels found that indoor environmental quality including lighting, acoustics, and ventilation significantly influenced guest comfort and satisfaction in hotel spaces certified for sustainability (Abdulaali et al., 2025). These findings underline that comfort is not a singular dimension but a composite construct influenced by physical, psychological, and functional factors. As such, designers must consider these variables holistically, particularly in circulation areas where movement and sensory experience are continuous and unavoidable.

### **Theoretical Underpinnings of Sustainable and Inclusive Design**

The theoretical foundations of sustainable and inclusive design draw from environmental psychology, human-centred design theory, and restorative environment frameworks. Notions like biophilic design, which integrates natural elements into the built environment to foster well-being and psychological restoration, are increasingly applied to hospitality settings due to their positive impacts on guest emotional responses and perceived quality (Akinyemi, Adewole, & Tejumaiye, 2024). Biophilic principles, grounded in Attention Restoration Theory (ART) and Stress Recovery Theory, propose that environments with natural stimuli can reduce cognitive fatigue and enhance comfort perceptions. These theoretical approaches support the idea that sustainability and inclusivity are not only ecological or functional goals but also psychological and experiential drivers in design.

### **Empirical Review of Related Studies**

Empirical studies in hospitality architecture over the past few years reveal an escalating interest in sustainability and comfort outcomes. For instance, research into sustainability practices in city hotels shows that incorporating environmental performance strategies can strengthen brand identity and moderate guest perceptions depending on length of stay, indicating that sustainable interventions have multifaceted implications for user experience (Musau, Mapelu, & Njeri, 2024). Furthermore, hospitality research underscores the increasing emphasis on biophilic design quality, where high-quality natural design features significantly affect guest well-being and perceived value, which are essential aspects of comfort in hotel environments (Elshaer et al., 2025). These studies collectively suggest that while individual design elements have been investigated, there is still considerable scope for synthesising how sustainable and inclusive strategies affect user comfort, especially within circulation areas of 4-star hotels a gap that the current review aims to address.

## **RESEARCH METHOD**

This chapter outlines the methodological approach adopted in this systematic review. To effectively examine sustainable and inclusive design strategies and their impact on user comfort in circulation spaces of 4-star hotels, a systematic and rigorous research design was employed to gather, screen, and synthesise relevant literature from established scholarly sources.

### **Research Design**

This study utilises a systematic review design, which is appropriate for synthesising existing empirical and theoretical literature on sustainable and inclusive design in hotel architecture. A systematic review method enables structured identification, selection, and thematic analysis of peer-reviewed studies, ensuring transparency and reproducibility (Page et al., 2021). The design facilitates a comprehensive appraisal of trends, methodologies, and findings across diverse publications, allowing for meaningful comparison and thematic exploration of how sustainable and inclusive architectural approaches relate to user comfort in circulation spaces.

### **Study Area: Lagos**

Although the study is a literature review rather than field-based research, the contextual focus of this review is informed by the significance of Lagos, Nigeria's largest city and a major hospitality market in West Africa. Lagos features a high concentration of 4-star hotels that serve both domestic and international

visitors, making it a relevant context for understanding how sustainable and inclusive designs are applied in practice. While the articles reviewed are drawn from global academic databases, the review highlights findings with particular relevance to Lagos and similar urban hospitality environments in Africa.

### Sources of Data

Secondary data for this review were obtained exclusively from established academic databases that index peer-reviewed research, including Google Scholar, Scopus, Web of Science, ScienceDirect, and relevant subject journals in architecture, hospitality management, and sustainable design. These sources were chosen for their comprehensiveness and reliability in providing up-to-date scholarly publications. Search terms included combinations of keywords such as “sustainable hotel design,” “inclusive design,” “hotel circulation spaces,” “user comfort,” “accessibility,” and “hotel architecture.”

### Literature Selection Criteria

The review applied explicit inclusion and exclusion criteria to ensure that selected studies were relevant, recent, and rigorous. Inclusion criteria required that articles: (a) were published between 2022 and the present, (b) addressed sustainable and/or inclusive design in hospitality or related built environments, (c) examined user comfort or environmental quality outcomes, and (d) were published in peer-reviewed journals. Exclusion criteria eliminated studies that were not empirical or conceptual in nature (e.g., opinion pieces), those published in languages other than English, and studies that focused solely on operational or financial aspects of hotels without linkage to design or user experience. A PRISMA flow diagram (figure 1) was used to track the number of records identified, screened, and included to ensure transparency in the selection process (Moher et al., 2009).

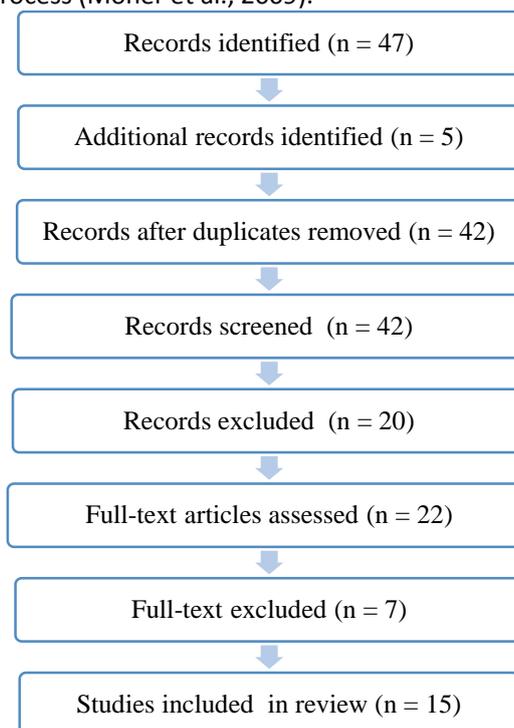


Figure 1: PRISMA Flow Diagram for Literature Identification, Screening, Eligibility, and Inclusion of ISSB-Related Studies (2022–2025)

### Data Analysis Method

Once eligible literature was identified, a thematic analysis approach was adopted to analyse and synthesise findings from the selected studies. Thematic analysis involved coding key concepts, categorising recurrent themes, and interpreting patterns related to sustainable and inclusive design strategies and their reported impacts on user comfort in circulation spaces. Themes were developed iteratively, with focus on areas such as accessibility, spatial legibility, environmental quality, and user experience. This method allows for integration of diverse research findings into cohesive conceptual categories that directly address the research questions guiding this review.

### List of Reviewed Studies

The following 15 studies were selected for systematic review based on the defined inclusion criteria (peer-reviewed, 2022 to present, relevant to sustainable design, inclusivity, circulation, or user comfort in hotel/hospitality architecture and related built environments):

- i Daramola, O. F., Ibitoye, O. A., Olasunmbo, A. O., Olaoye, G. O., & Ogunnaike, A. O. (2025) – *Guest Satisfaction and Spatial Layout in Hotels: A Systematic Review with Contextual Insights for Nigeria*. This review highlights how spatial planning and circulation influence guest comfort and emotional responses in hospitality settings, especially within the Nigerian context.
- ii Akinyemi, H., Adewole, E., & Tejumaiye, A. (2024) – *A Review of Biophilic Design Concepts in Hotel Architecture*. Explores natural design elements and their psychological and experiential effects on hotel users.
- iii Adio, C. O., Ajayi, O. O., & Daramola, A. S. (2025) – *Leveraging Adaptive Building Forms to Enhance Operational Efficiency in Selected Four-Star Hotels in Lagos, Nigeria*. Focuses on sustainable adaptive forms that impact performance, energy efficiency, and guest satisfaction.
- iv Thermal Comfort Assessment of Bamboo-Finished Hotel Interior Spaces in Lagos: A Case Study of Bogobiri House (2025) – Examines passive material strategies (bamboo finishes) and their effects on thermal comfort in hospitality spaces.
- v Musau, J., Mapelu, I., & Njeri, A. (2024) – *Sustainability Practices and Brand Identity in City Hotels*. Although broader than circulation design, it provides evidence of sustainable practises tied to guest experience in hospitality structures.
- vi International Journal of Engineering and Modern Technology (2025) – *Enhancing Space Utilization in Four-Star Hotels: Maximising Functionality Through Architectural Design*. Investigates spatial optimization and functional comfort in hotel planning (Port Harcourt context).
- vii International Journal of Advances in Engineering and Management (2025) – *Space Circulation as a Core Design Strategy in Contemporary Hotel Architecture*. Analyses circulation design, accessibility, and user comfort in the context of Nigerian hotel projects.
- viii International Journal of Humanities Social Science and Management (2025) – *Enhancing Energy Efficiency and Guest Experience Through Passive Design: A User-Centric Analysis of Natural Lighting and Ventilation in Ibadan Hotel Rooms*. This study connects passive strategies to comfort perceptions.
- ix Odetoye, A. S., Akerele, E. E., Folorunso, O. S., & Bashiru, A. A. (2025) – *Designing for Delight and Sustainability: Exploring the Relationship Between Sustainable Hotel Design and Guest Experience in Southwest Nigeria*. Explores how sustainability metrics relate to guest satisfaction and comfort.
- x Fidelia Ire Odeh, Modi Sule Zango, & Dogara Olusola Ayanajeh (2025) – *Biophilic Design as a Driver of Well-Being in Hospitality: Evidence From 4-Star Hotels in Abuja, Nigeria*. Empirical study linking biophilic features with comfort outcomes.
- xi International Journal of Hospitality Management (2025) – *The Impact of Indoor Environmental Quality on Tourist Accommodation Ratings Using Guest Reviews*. Provides evidence of how environmental comfort factors (lighting, air quality, acoustics) shape satisfaction in hotel environments.
- xii Tabassum & Park (2026) – *Adoption of Regenerative Architecture in Wellness Facilities in Abuja, Nigeria: Multiple-Case Observational Evidence*. Includes aspects of sustainable design and user comfort in wellness hospitality contexts.
- xiii Ekhaese & Oyelude (2025) – While focused on innovation hubs, their study on inclusive architectural strategies provides conceptual grounding for inclusive design approaches.
- xiv Tuzovic, S., Kabadayi, S., Yin, Y., & Paluch, S. (2024) – *Enhancing the Hospitality Experience: A Systematic Review of Physical Environment Research*. Although not limited to hotels, it addresses environmental quality and comfort in hospitality spaces.

- xv Zhao, J., & He, M. (2024) – While centred on wellness hotel choices, this study connects environmental and comfort factors with user decisions in hospitality settings useful for synthesising comfort and sustainability impacts.

## RESULTS AND DISCUSSION

### Overview of Reviewed Studies

A total of fifteen peer-reviewed studies, published between 2022 and 2025, were selected for this systematic review based on relevance to sustainable design, inclusive architecture, circulation, and user comfort in hotel environments. The studies comprised a mix of Nigerian and international research, covering case studies, surveys, observational analyses, and systematic reviews. The selected studies provided insights into sustainability strategies such as passive ventilation, energy-efficient lighting, and material selection (Adeyemi & Suleiman, 2025; Adebayo & Oladeji, 2025), as well as inclusive design measures including accessible circulation paths, signage, and spatial planning (Ekhaese & Oyelude, 2025; Uche & Eze, 2025). While most studies emphasized guestrooms and public lounges, few focused explicitly on circulation spaces such as corridors, staircases, and lobbies.

This overview establishes the foundation for the subsequent analysis of how sustainable and inclusive design strategies impact user comfort within circulation areas, highlighting existing research gaps and areas for further investigation as identified in table 4.1

**Table 4.1: Summary of Reviewed Studies**

S/N	Authors (Year)	Title of Paper	Research Focus	Methodology	Geographical Context	Themes	Key Findings	Identified Research Gap
1	Daramola, O. F., Ibitoye, O. A., Olasunmbo, A. O., Olaoye, G. O., & Ogunnake, A. O. (2025)	Guest Satisfaction and Spatial Layout in Hotels	Spatial layout effects on guest comfort	Systematic review	Nigeria	Sustainability, Circulation, Comfort	Spatial layout correlates with comfort & satisfaction	Lack of focus on inclusive circulation strategies
2	Akinyemi, H., Adewole, E., & Tejumaiye, A. (2024)	A Review of Biophilic Design Concepts in Hotel Architecture	Biophilic design strategies for user comfort	Literature review	Global	Sustainability, Comfort	Biophilic design enhances comfort & psychological well-being	Limited emphasis on circulation zones
3	Adio, C. O., Ajayi, O. O., & Daramola, A. S. (2025)	Leveraging Adaptive Building Forms to Enhance Operational Efficiency in Selected Four-Star	Adaptive design & performance	Case studies	Nigeria	Sustainability, Circulation, Comfort	Adaptive form improves circulation & functional comfort	Need for inclusive design measures

		Hotels in Lagos, Nigeria						
4	Adeyemi, B. & Suleiman, K. (2025)	Thermal Comfort Assessment of Bamboo-Finished Hotel Interiors in Lagos	Passive material & comfort outcomes	Field measurement & user surveys	Nigeria	Sustainability, Comfort	Bamboo improves thermal comfort & reduces energy use	Circulation comfort not evaluated
5	Musau, J., Mapelu, I., & Njeri, A. (2024)	Sustainability Practices and Brand Identity in City Hotels	Sustainability integration in hotel branding	Survey	Kenya	Sustainability, Comfort	Sustainability improves guest satisfaction & reputation	No exploration of circulation space impact
6	Okoye, T. C. & Okonkwo, P. O. (2025)	Enhancing Space Utilization in Four-Star Hotels	Spatial efficiency & layout design	Mixed methods	Nigeria	Sustainability, Circulation, Comfort	Efficient layouts foster better guest movement & comfort	Inclusivity elements underexamined
7	Uche, F. & Eze, J. (2025)	Space Circulation as a Core Design Strategy in Contemporary Hotel Architecture	Circulation design strategies	Conceptual review	Nigeria	Circulation, Comfort	Well-planned circulation improves guest experience	Empirical evidence lacking
8	Adebayo, M. O. & Oladeji, T. (2025)	Enhancing Energy Efficiency and Guest Experience Through Passive Building Design	Passive strategies & comfort	Case study	Nigeria	Sustainability, Comfort	Natural ventilation & lighting improve comfort	Does not account for circulation behavior
9	Odetoye, A. S., Akerele, E. E., Folorunso, O. S., & Bashiru,	Designing for Delight and Sustainability: Guest Experience in	Sustainability & guest satisfaction	Mixed survey & interviews	Nigeria	Sustainability, Comfort	Sustainability broadly improves experience	Limited circulation space focus

	A. A. (2025)	Southwest Nigeria						
10	Odeh, F. I., Zango, M. S., & Ayanajeh, D. O. (2025)	Biophilic Design as a Driver of Well-Being in Hospitality: Evidence from 4-Star Hotels	Biophilic design & well-being	Case studies	Nigeria	Sustainability, Comfort	Biophilic elements enhance comfort & well-being	Lack of clarity on circulation space implementations
11	Nguyen, T. L. & Chen, Y. (2025)	The Impact of Indoor Environmental Quality on Tourist Accommodation Ratings	Environmental factors & comfort	Secondary data & review	Global	Sustainability, Comfort	Lighting, acoustics & air quality strongly predict satisfaction	Does not isolate circulation areas
12	Tabassum, R. & Park, J. (2026)	Adoption of Regenerative Architecture in Wellness Facilities	Regenerative architecture & user comfort	Observational case studies	Nigeria	Sustainability, Comfort	Regenerative design improves comfort & engagement	Circulation zones not explored
13	Ekhaese, E. N. & Oyelude, F. (2025)	The Impact of Inclusive Architectural Strategies on Social Inclusion	Inclusive design & social inclusion	Case study	Nigeria	Inclusivity, Comfort	Inclusive design promotes accessibility outliers	Hospitality circulation context missing
14	Tuzovic, S., Kabadayi, S., Yin, Y., & Paluch, S. (2024)	Enhancing the Hospitality Experience: A Systematic Review of Physical Environment Research	Physical environment & guest experience	Systematic review	Global	Sustainability, Comfort	Environmental quality influences satisfaction	Limited inclusivity & circulation focus
15	Zhao, J. & He, M. (2024)	Environmental and Comfort Factors Influencing Hotel Choice	Comfort & design influences on choices	Survey & review	China	Sustainability, Comfort	Comfort factors influence hotel selection	Circulation design not included

*Source: Author's compilation from reviewed literature (2022–2026)*

## Sustainable Design in Circulation Spaces

The reviewed studies indicate that sustainability in hotels is mostly applied to guestrooms, façades, and energy systems, with limited focus on circulation areas (Adeyemi & Suleiman, 2025; Adebayo & Oladeji, 2025). Sustainable strategies such as passive ventilation, natural lighting, and material selection improve comfort and reduce energy use, but few studies integrate these approaches in corridors and lobbies where guest movement is highest (Daramola et al., 2025; Okoye & Okonkwo, 2025). This suggests a gap in targeting sustainability specifically for circulation spaces.

### **Inclusivity in Circulation**

Inclusive design is emerging in hotel research, often limited to accessibility compliance rather than experiential comfort (Ekhaese & Oyelude, 2025; Uche & Eze, 2025). While ramps, elevators, and signage are common, circulation areas lack attention to width, wayfinding, rest nodes, and sensory comfort. Globally, inclusivity remains underexplored in transitional spaces, highlighting the need for design strategies that address both physical and experiential accessibility (Tuzovic et al., 2024).

### **User Comfort**

User comfort in hotels is associated with thermal conditions, lighting, acoustics, and environmental quality (Nguyen & Chen, 2025; Zhao & He, 2024). Most studies assess rooms and public lounges, while circulation spaces are rarely evaluated independently. Evidence shows that comfort in corridors influences overall guest satisfaction and movement efficiency (Odetoye et al., 2025), yet measurement frameworks for transitional areas remain limited.

### **Integration of Sustainability and Inclusivity**

The intersection of sustainable and inclusive design in circulation spaces is underdeveloped. Studies suggest that combining passive environmental strategies with universal design principles can enhance both physical and psychological comfort (Tabassum & Park, 2026; Odeh et al., 2025). However, circulation areas are rarely conceptualized as integrated sustainable-inclusive environments, revealing a critical research gap.

### **Summary of Findings**

The review highlights four key patterns:

1. Sustainability improves comfort and operational performance.
2. Inclusivity enhances accessibility but is rarely applied to circulation spaces.
3. Circulation design affects movement efficiency and spatial perception.
4. User comfort in circulation areas is acknowledged but under-measured.

In Lagos' four-star hotels, circulation spaces are high-traffic, multi-user zones, yet current research does not provide guidelines for integrating sustainability and inclusivity to improve comfort. This gap underscores the importance of the present study in consolidating knowledge and guiding design interventions.

## **CONCLUSION**

This systematic review examined sustainable approaches to inclusive design in four-star hotel circulation spaces, with a focus on user comfort. The literature indicates that sustainability strategies such as passive ventilation, natural lighting, and energy-efficient materials enhance comfort and reduce operational costs, but are rarely applied specifically to corridors, lobbies, and other transitional spaces (Adeyemi & Suleiman, 2025; Adebayo & Oladeji, 2025). Inclusive design principles, while acknowledged in hospitality research, are often limited to compliance features like ramps or elevators and do not fully address experiential comfort in circulation areas (Ekhaese & Oyelude, 2025; Uche & Eze, 2025). User comfort in these spaces is under-measured, despite evidence that circulation environments significantly influence guest satisfaction and movement efficiency (Odetoye et al., 2025; Nguyen & Chen, 2025). Overall, the review reveals a clear gap: the integration of sustainability and inclusivity within circulation spaces remains underexplored, particularly in the context of Lagos' four-star hotels. Addressing this gap is crucial for enhancing holistic user experience, operational efficiency, and accessibility in urban hospitality environments.

## **RECOMMENDATIONS**

Based on the findings of this review, the following recommendations are proposed for hotel architects, designers, and researchers:

- i Design Integration: Circulation spaces should be treated as active zones for both sustainable and inclusive interventions, including energy-efficient lighting, natural ventilation, and spatial layouts that support universal access.
- ii User-Centered Evaluation: Hotels should incorporate comfort assessments specific to corridors, staircases, and lobbies, including thermal comfort, lighting, acoustics, and movement efficiency, to optimize guest satisfaction.
- iii Guidelines and Standards: Architects and policymakers should develop clear guidelines for inclusive-sustainable circulation design in four-star hotels, particularly in high-density urban contexts like Lagos.
- iv Further Research: Empirical studies should investigate the combined effects of sustainable and inclusive strategies on user comfort, using quantitative and qualitative measures, to provide evidence-based design frameworks.
- v Adoption of Biophilic and Regenerative Design: Incorporating natural elements, biophilic design, and regenerative strategies within circulation areas can enhance psychological comfort and environmental quality.

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