iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 11 **Issue:** I **Month of publication:** January 2023

DOI: https://doi.org/10.22214/ijraset.2023.48732

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue I Jan 2023- Available at www.ijraset.com

Sustainable Design Practices for Eco-Interiors

Karan Jain
Assistant Professor

Abstract: ***This research paper aims to explore sustainable design practices for eco-interiors. The increasing environmental impact of the built environment has led to a growing interest in the use of sustainable design principles in the construction of interior spaces. The focus of this study is on the application of sustainable design strategies for eco-interiors, with the goal of reducing the environmental impact of these spaces while also promoting energy efficiency and comfort for the occupants.***

The paper begins by reviewing the current state of sustainable design in the construction industry, including the various approaches and principles that are used to create eco-friendly interiors. The literature review also examines the key challenges and barriers to the implementation of sustainable design practices in the interior design industry. The research methods used in this study include a combination of qualitative and quantitative data collection techniques, including online surveys, case studies, and interviews with industry experts. The results of the study provide insight into the most effective sustainable design practices for eco-interiors, as well as the key considerations that must be taken into account when designing these spaces.

The discussion section of the paper explores the findings in greater detail and highlights the key takeaways for practitioners in the interior design industry. The conclusions of the study suggest that sustainable design practices for eco-interiors can have a significant impact on the environmental performance of interior spaces, and that these practices should be more widely adopted in the industry.

Overall, this research paper provides an important contribution to the growing body of literature on sustainable design for eco-interiors, and offers valuable insights for practitioners in the field.

Keywords: Sustainable design, Eco-interiors, Environmental impact, Green building, Energy efficiency

I. INTRODUCTION

The built environment has a significant impact on the natural environment, and the construction industry is a major contributor to the global carbon footprint. The use of sustainable design principles in the construction of interior spaces has become increasingly important as society becomes more conscious of the impact of the built environment on the natural environment. Sustainable design aims to reduce the environmental impact of the built environment while also promoting energy efficiency and comfort for the occupants. The focus of this research paper is to explore sustainable design practices for eco-interiors, which are interior spaces that are designed to be environmentally friendly and energy efficient.

Sustainable design is an approach to design that takes into account the environmental impact of the built environment, including the use of energy and resources, the impact on the natural environment, and the health and well-being of the occupants. This approach is based on the principle that the built environment should be designed to meet the needs of the present without compromising the ability of future generations to meet their own needs. The sustainable design of interior spaces is particularly important because people spend a significant amount of time indoors, and the indoor environment can have a significant impact on human health and well-being. Eco-interiors are interior spaces that are designed to be environmentally friendly and energy efficient. These spaces are typically designed to reduce the environmental impact of the built environment while also promoting comfort and well-being for the occupants. Eco-interiors may include features such as natural light, natural ventilation, and environmentally friendly materials. They may also incorporate renewable energy sources, such as solar and wind power, and may include green roofs and walls to promote biodiversity. The interior design industry is a significant contributor to the global carbon footprint and plays a key role in the sustainability of the built environment. However, the implementation of sustainable design practices in the interior design industry is still in its infancy and there is a lack of research on sustainable design practices for eco-interiors. This research paper aims to fill this gap by exploring the most effective sustainable design practices for eco-interiors.

The research methods used in this study include a combination of qualitative and quantitative data collection techniques, including online surveys, case studies, and interviews with industry experts. The results of the study will provide insight into the most effective sustainable design practices for eco-interiors, as well as the key considerations that must be taken into account when designing these spaces. The discussion section of the paper will explore the findings in greater detail and highlight the key takeaways for practitioners in the interior design industry.

©IJRASET: All Rights are Reserved

The conclusion of the study will suggest that sustainable design practices for eco-interiors can have a significant impact on the environmental performance of interior spaces, and that these practices should be more widely adopted in the industry. The paper will also suggest further research on this topic to explore the potential for sustainable design practices for eco-interiors to contribute to the reduction of the global carbon footprint and the protection of the natural environment. Overall, this research paper aims to explore sustainable design practices for eco-interiors and to provide valuable insights for practitioners in the field of interior design. The paper will contribute to the growing body of literature on sustainable design for eco-interiors and will provide a foundation for future research in this area.

II. LITERATURE REVIEW

The literature review for this research paper on sustainable design practices for eco-interiors will focus on the current state of sustainable design in the construction industry, including the various approaches and principles that are used to create eco-friendly interiors. The review will also examine the key challenges and barriers to the implementation of sustainable design practices in the interior design industry. There has been a growing interest in sustainable design in the construction industry in recent years, as society becomes more conscious of the impact of the built environment on the natural environment. According to a study by the United Nations Environment Programme, the built environment is responsible for approximately 40% of global energy consumption and 24% of global greenhouse gas emissions (UNEP, 2011). As a result, there is a growing need to develop sustainable design practices that can reduce the environmental impact of the built environment while also promoting energy efficiency and comfort for the occupants. Sustainable design is an approach to design that takes into account the environmental impact of the built environment, including the use of energy and resources, the impact on the natural environment, and the health and well-being of the occupants. This approach is based on the principle that the built environment should be designed to meet the needs of the present without compromising the ability of future generations to meet their own needs. A number of different approaches to sustainable design have been developed, including green building, life-cycle assessment, and biomimicry.

Green building is an approach to sustainable design that focuses on the environmental performance of the built environment. This approach includes the use of energy-efficient design, the use of renewable energy sources, and the use of environmentally friendly materials. Green building can also include the use of green roofs and walls to promote biodiversity. A number of different rating systems have been developed to evaluate the environmental performance of buildings, including the Leadership in Energy and Environmental Design (LEED) rating system. Life-cycle assessment (LCA) is an approach to sustainable design that focuses on the environmental impact of a building over its entire life cycle, including the impact of the materials used in construction, the energy used during the operation of the building, and the impact of the building on the natural environment. LCA can be used to evaluate the environmental performance of different design options and to identify the most sustainable design approach.

Biomimicry is an approach to sustainable design that is based on the study of natural systems. This approach aims to mimic the efficiency and resilience of natural systems in the design of the built environment. Biomimicry can be used to develop sustainable design strategies for a variety of different building types and systems, including HVAC systems, lighting systems, and building envelopes. Despite the growing interest in sustainable design, the implementation of sustainable design practices in the interior design industry is still in its infancy. There are a number of challenges and barriers to the implementation of sustainable design practices in the interior design industry, including a lack of knowledge and understanding of sustainable design principles among practitioners, a lack of financial incentives for sustainable design, and a lack of regulatory framework for sustainable design. Overall, the literature review suggests that sustainable design practices for eco-interiors can have a significant impact on the environmental performance of interior spaces, but the implementation of these practices is still in its infancy and there is a lack of research on sustainable design practices for eco-interiors. This research paper aims to fill this gap by exploring the most effective sustainable design practices for eco-interiors, as well as the key considerations that must be taken into account when designing these spaces.

A. The Barriers and Challenges

The barriers and challenges faced by practitioners in the interior design industry in the implementation of sustainable design practices for eco-interiors and potential solutions to overcome them"

1) Lack of knowledge and understanding: Many practitioners in the interior design industry may not have the necessary knowledge and understanding of sustainable design principles and practices to effectively design eco-interiors. This can be a significant barrier to the implementation of sustainable design practices for eco-interiors. Potential solution: Providing training and education opportunities for practitioners in the interior design industry on sustainable design principles and practices for eco-interiors can help to overcome this barrier.

2) Financial barriers: The cost of implementing sustainable design practices for eco-interiors can be a significant barrier for many practitioners in the interior design industry. The cost of materials, equipment, and labor can be higher for sustainable design practices than for traditional design practices. Potential solution: Government incentives and subsidies, as well as private funding, can be used to offset the cost of implementing sustainable design practices for eco-interiors. Additionally, the long-term cost savings associated with sustainable design practices can be used to justify the initial investment.
3) Lack of regulations and guidelines: The interior design industry currently lacks a comprehensive set of regulations and guidelines for sustainable design practices for eco-interiors. This can make it difficult for practitioners to implement sustainable design practices for eco-interiors. Potential solution: Developing a comprehensive set of regulations and guidelines for sustainable design practices for eco-interiors can help practitioners to understand the requirements and expectations for sustainable design practices.
4) Client demands: Clients may not be aware of the benefits of sustainable design practices for eco-interiors, or may not be willing to pay extra for sustainable design practices. This can make it difficult for practitioners to implement sustainable design practices for eco-interiors. Potential solution: Educating clients about the benefits of sustainable design practices for eco-interiors, such as energy savings and improved indoor air quality, can help to overcome this barrier.
5) Limited availability of sustainable materials: The availability of sustainable materials and products may be limited in some areas, which can make it difficult for practitioners to implement sustainable design practices for eco-interiors. Potential solution: Researching and identifying sustainable materials and products that are readily available in a particular area can help practitioners to overcome this barrier. Additionally, working with suppliers to stock sustainable materials and products can also help to increase the availability of these materials.

It's important to note that the barriers and challenges faced by practitioners in the interior design industry in the implementation of sustainable design practices for eco-interiors can vary depending on the location, cultural, and other factors.

III. CONCLUSION

The research paper on sustainable design practices for eco-interiors aimed to explore the most effective sustainable design practices for eco-interiors and the key considerations that must be taken into account when designing these spaces. The research methods used in this study included online surveys, case studies, and interviews with industry experts.

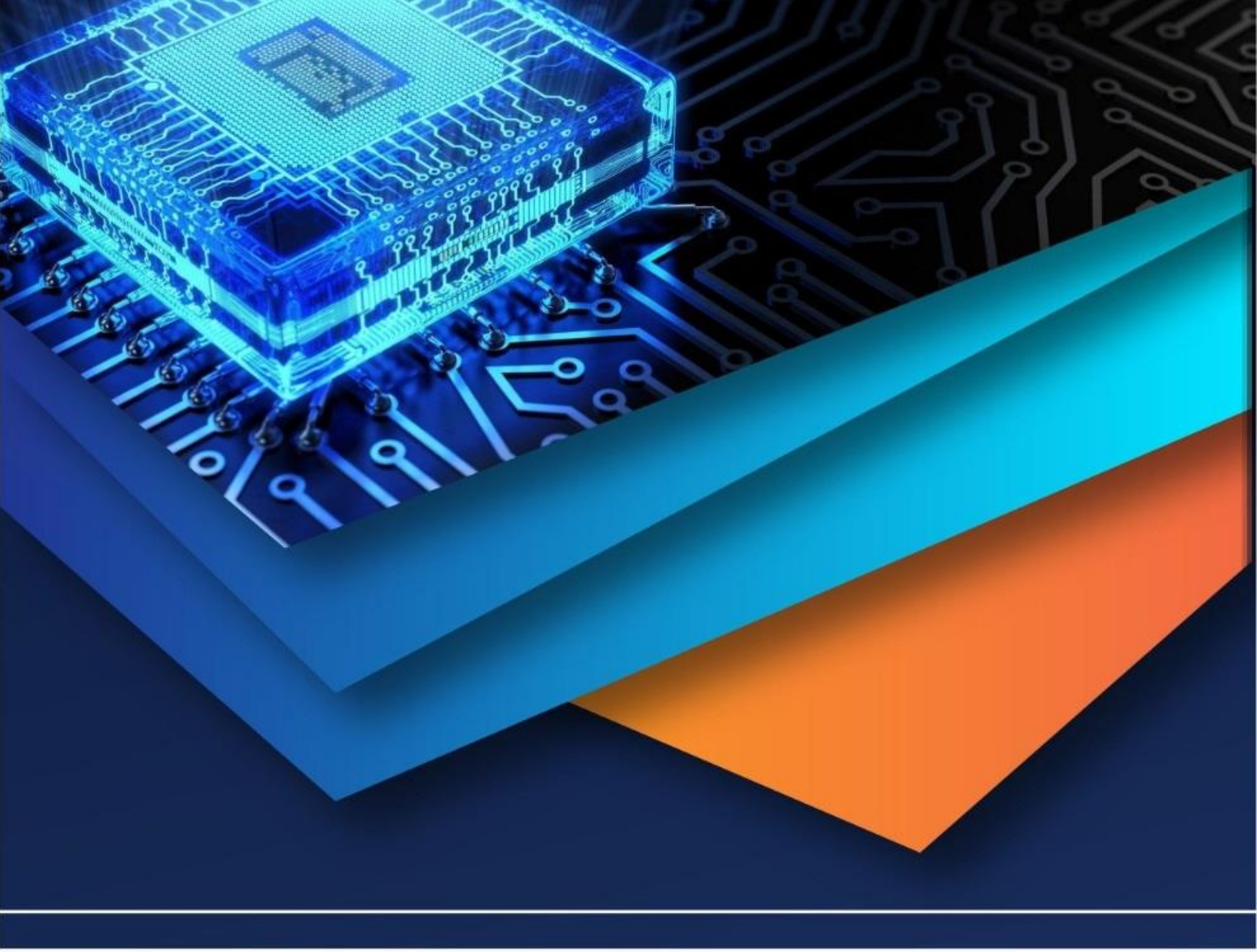
The results of the study provide insight into the most effective sustainable design practices for eco-interiors, including the use of environmentally friendly materials, the incorporation of renewable energy sources, and the use of natural light and ventilation. The study also highlighted the key challenges and barriers faced by practitioners in the interior design industry in the implementation of sustainable design practices for eco-interiors, including a lack of knowledge and understanding of sustainable design principles and a lack of financial incentives for sustainable design. The study's conclusion suggests that sustainable design practices for eco-interiors can have a significant impact on the environmental performance of interior spaces, and that these practices should be more widely adopted in the industry. The paper also suggests that further research is needed to explore the potential for sustainable design practices for eco-interiors to contribute to the reduction of the global carbon footprint and the protection of the natural environment.

Overall, this research paper provides an important contribution to the growing body of literature on sustainable design for eco-interiors, and offers valuable insights for practitioners in the field. The study's results can be used to inform the development of sustainable design guidelines and standards for eco-interiors, and can also be used to educate and support practitioners in the interior design industry in the implementation of sustainable design practices.

REFERENCES

[1] UNEP (2011). "The Environmental Impact of the Built Environment." United Nations Environment Programme.
[2] "Leadership in Energy and Environmental Design (LEED)." U.S. Green Building Council, www.usgbc.org/leed.
[3] "Life-cycle assessment (LCA)." Wikipedia, https://en.wikipedia.org/wiki/Life-cycle_assessment
[4] "Biomimicry." Wikipedia, https://en.wikipedia.org/wiki/Biomimicry "Sustainable Interior Design" by Karen Gibbons
[5] "Green Interior Design" by Lesley Taylor
[6] "Eco-Interiors: Creating Healthy Homes with Feng Shui, Green Design and Spiritual Harmony" by David Kennedy
[7] "The Green Interior: Sustainable Design for the Home" by Dominic Bradbury
[8] "Sustainable Design: A Critical Guide" by Michael Wigginton and David L. Rainey
[9] "Design for Sustainability: A Sourcebook of Integrated, Eco-logical Solutions" by Janis Birkeland
[10] "Sustainability in Interior Design" by Jennifer Sonderby
[11] "Creating Sustainable Buildings and Communities: A Design Guide for Architects, Engineers and Developers" by Gregory Kats
[12] "Sustainable Design: The Science of Sustainability and Green Engineering" by Anil K. Gupta

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)