APPLICATION OF GREEN BUILDING DESIGN STRATEGIES IN THE DESIGN OF A FIVE-STAR HOTEL IN IKOYI, LAGOS

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A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE REQUIREMENT FOR THE AWARD OF MASTER OF SCIENCE (M.Sc.) DEGREE IN ARCHITECTURE IN THE DEPARTMENT OF ARCHITECTURE, COLLEGE OF SCIENCE AND TECHNOLOGY, COVENANT UNIVERSITY, OTA, OGUN STATE.

JULY, 2023

ACCEPTANCE

This is to attest that this dissertation is accepted in partial fulfilment of the requirements for the award of the degree of Master of Science in Architecture in the Department of Architecture, College of Science and Technology, Covenant University, Ota, Nigeria.

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Prof. Akan B. Williams
(Dean, School of Postgraduate Studies) **Signature and Date**

DECLARATION

I, **SOLARIN OLUWAKANYINSOLA IMMANUELLA (17CA022962),** declare that this research was carried out by me under the supervision of Dr. Omoyeni A. Fulani, of the Department of Architecture, College of Science and Technology, Covenant University, Ota, Ogun State. I attest that the dissertation has not been presented either wholly nor partially for the award of any degree elsewhere. All sources of data scholarly information used in this dissertation are duly acknowledged.

SOLARIN, OLUWAKANYINSOLA IMMANUELLA

Signature and Date

CERTIFICATION

This is to certify that this dissertation titled **"APPLICATION OF GREEN BUILDING DESIGN STRATEGIES IN THE DESIGN OF A FIVE STAR HOTEL IN LAGOS STATE"** is an original research work carried out by **SOLARIN OLUWAKANYINSOLA IMMANUELLA (17CA022962)** in the Department of Architecture, College of Science and Technology, Covenant University, Ota, Ogun State, Nigeria, under the supervision of Dr O. A. Fulani. This dissertation has met the required standard for the award of Master of Science (M.Sc) in Architecture.

Dr. Omoyeni A. Fulani
(Supervisor) **Signature and Date**

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(Head of Department) **Signature and Date**

Dr. Oluwafemi K. Akande
(External Examiner) **Signature and Date**

Prof. Akan B. Williams
(Dean, School of Postgraduate Studies) **Signature and Date**

DEDICATION

This thesis is dedicated to Almighty God for the grace and privilege He has given me to carry out this work.

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ABSTRACT

In the course of their regular operations, hotels incur significant operating and maintenance costs. In Nigeria, the production of power for heating and cooling, electricity, and water use consumes the majority of hotel earnings. However, these expenses can be reduced by implementing Green Building Design Strategies (GBDS). The study aim is to investigate the extent to which architects apply GBDS in the design of hotels with a view to explore more efficient design strategies that can reduce the maintenance and operational cost of a proposed 5-star hotel. Ultimately, this study contributes to a growing body of research on sustainable development, providing practical solutions to help us achieve a more sustainable future. It is crucial to determine how informed and knowledgeable architects are about applying GBDS because they frequently serve as the main designers and project facilitators in the construction industry. The study adopted a mixed method approach, with a structured questionnaire used as instrument of data collection administered to architects registered with the Architect Registration Council of Nigeria (ARCON) and an observation guide used for the selected case studies. Respondents were asked about their level of awareness, understanding and adoption of GBDS and how they have applied GBDS in their practices from Design phase to construction. The data collected was analysed using SPSS and presented in descriptive form using tables and charts. The result shows that fewer respondents are adopting and knowledgeable of Green Building Design Strategies. Additionally, it was discovered that the most applied GBDS by architects is compactness of building blocks on site and the least applied is extent to which construction waste is reduced by implementing construction waste management. Moreover, selected five star hotels were visited and it was discovered that the GBDS application rate in Nigeria is 62.1% This clarifies the extent to which GBDS are used in selected Nigerian 5-star hotels, and it also gives future scholars, architects and professionals a starting point for their work on the use of green strategies for design especially in the hospitality sector.

Keywords: Green Building Design Strategies (GBDS), Hotel, Sustainability, Green buildings.