

**A STUDY OF THE USE OF PASSIVE DESIGN STRATEGIES IN A
PENTECOSTAL CHURCH IN LAGOS-OGUN MEGACITY, NIGERIA**

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JULY, 2023

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BY

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COLLEGE OF SCIENCE AND TECHNOLOGY, COVENANT
UNIVERSITY OTA, OGUN STATE, NIGERIA**

JUNE, 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 (M.Sc.) in the Department of Architecture, College of Science and Technology, Covenant University, Ota, Nigeria and has been accepted by the School of Postgraduate Studies, Covenant University, Ota, Ogun state.

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DECLARATION

I, AJANAKU, PRAISE AJIBOLA (21PCA02235), declare that this dissertation is a representation of my work, and is written and implemented by me under the supervision of Dr Isidore C. Ezema of the Department of Architecture, Covenant University, Ota, Nigeria. I attest that this dissertation has in no way been submitted either wholly or partially to any other university or institution of higher learning for the award of a master's degree. All information cited from published and unpublished literature has been duly referenced.

AJANAKU, PRAISE AJIBOLA

Signature and Date

CERTIFICATION

This is to certify that this dissertation titled “**A STUDY OF THE USE OF PASSIVE DESIGN STRATEGIES IN A PENTECOSTAL CHURCH IN LAGOS-OGUN MEGACITY, NIGERIA**” is an original research work carried out by **AJANAKU, PRAISE AJIBOLA (21PCA02235)** in the Department of Architecture, College of Science and Technology, Covenant University, Ota, Ogun State, Nigeria under the supervision of Dr. Isidore C. Ezema. This dissertation has met the required standard for the award of Master of Science (M.Sc) in Architecture.

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DEDICATION

This research work is dedicated first and foremost to God Almighty, the custodian of all wisdom, knowledge, and understanding, for His grace and favour throughout the duration of carrying out this research. Then to my family for their endless support and love.

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ABSTRACT

Global temperature has risen worldwide, due to change in climate leading to global warming. As a result of this there has been rapid increase in the dependency on electricity for user satisfaction around the world today. Due to this reason, artificial lighting, heating and cooling requirements in buildings today has increased and makes up about 40% of total energy used in the world today, which contributes negatively to environmental sustainability. Mega-Church buildings around the world today heavily rely on the use of electricity for user's satisfaction during their infrequent operation times, therefore presenting a challenge for environmental sustainability. In order to achieve user satisfaction and ensure environmental sustainability, A major factor is the use of passive design strategies. Hence, this study aims to examine the passive design strategies that can be used for enhancing indoor user satisfaction, with the goal of applying the lessons learnt in the design of a Pentecostal church located within Lagos-Ogun mega-city, Nigeria. In this study, a mixed research technique was used, integrating qualitative and quantitative methods. Questionnaire-based survey, interviews, and case studies were used to study the users and analyse the architecture of five mega-churches in Lagos-Ogun megacity. Questionnaires was used to obtain primary data, surveys, and case studies. Secondary data were collected through published and unpublished documents, books, reports, journals, government archives, internet sources and other official documents of relevant quality that supports the study's conclusions. The Study's findings revealed that passive design measures used to achieve user satisfaction in churches are fairly adequate, active measures are utilized in achieving a comfortable environment for the users. The study recommend that Pentecostal churches should considers the essential passive principles for user satisfaction from the initial stages of the building design.

Keywords: Church, Energy-Efficiency, Sustainability, Passive, User-Satisfaction.