

**PROPOSED DESIGN OF FOUR-STOREY GREEN ENGINEERED BUILDING
FOR PICE CAVITE CHAPTER OFFICE IN IMUS, CAVITE**

Design Project

MARK DAVID P. CARCALLAS

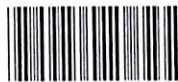
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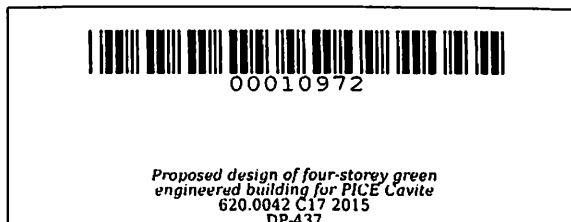
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**PROPOSED DESIGN OF FOUR-STOREY GREEN ENGINEERED BUILDING
FOR PICE CAVITE CHAPTER OFFICE IN IMUS, CAVITE**

Undergraduate Design Project
Submitted to the Faculty of the
College of Engineering and Information Technology
Cavite State University
Indang, Cavite

In partial fulfillment
of the requirements for the degree
Bachelor of Science in Civil Engineering



MARK DAVID P. CARCALLAS
JAMES RALPH M. PIÑOL
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ABSTRACT

CARCALLAS, MARK DAVID P. and PIÑOL, JAMES RALPH M. Proposed Design of Four-Storey Green Engineered Building For PICE Cavite Chapter Office in Imus, Cavite. Undergraduate Thesis. Bachelor of Science in Civil Engineering. Cavite State University, Indang, Cavite. April 2015. Adviser: Engr. Larry E. Rocela.

In this design project, a green engineered building for the office of the PICE Cavite chapter is made. The design project covered the possible green building designs and their effect on the proposed structure. The design project also aimed to provide architectural and structural plans, and identify the materials to be used for the proposed green engineered building that will meet the basic standards set by the Philippine Institute of Civil Engineers, Inc. Main Office in response to their Green Building Project.

Based on the study, the structural design of four-storey green engineered office building was provided following the procedures and other requirements as per NSCP standards. Based on the computation, it can be concluded that the beams, columns, slabs, and footings are safe and economical. Further, it can be concluded that the differences in the moments and shears in a structure were due to the application of loads since different load factors are applied to the structural members depending on its function. The total cost estimate of the four-storey green engineered building amounts to PhP. 34, 180, 607.38 based on the most economical building design.

Based on the results of the study, the authors recommend to conduct the same research considering the standards for green building construction and other green building materials. It is also recommended that the design of lighting and power, water and sewer line in the office building be done by students as design project in Electrical and Sanitary Engineering.

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Septic

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PROPOSED DESIGN OF FOUR-STOREY GREEN ENGINEERED BUILDING FOR PICE CAVITE CHAPTER OFFICE IN IMUS, CAVITE

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An undergraduate design project submitted to the faculty of the Department of Civil Engineering, College of Engineering and Information Technology, Cavite State University, Indang, Cavite in partial fulfillment of the requirements for the degree of Bachelor of Science in Civil Engineering with Contribution No. CEIT-2014-15-061. Prepared under the supervision of Engr. Larry E. Rocela.

INTRODUCTION

Green building construction is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort. Green building is also known as a sustainable or high performance building.

The growing concern of minimizing environmental impacts and providing healthy and energy efficient indoor buildings for mankind gave way for civil engineers and architects to experiment on structures that will solve these complications. Thus, the green building initiative was launched and is now part of the modern trend in the construction industry.