

**PROPOSED DESIGN OF FOUR-STOREY MEN'S DORMITORY
CONTAINER VAN BUILDING AT CAVITE STATE
UNIVERSITY - MAIN CAMPUS**

Design Project

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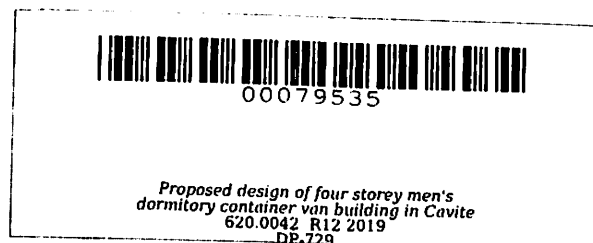
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**PROPOSED DESIGN OF FOUR STOREY MEN'S DORMITORY CONTAINER
VAN BUILDING IN CAVITE STATE UNIVERSITY- MAIN CAMPUS**

**Undergraduate Design Project
Submitted to the Faculty of the
College of Engineering and Information Technology
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**In partial fulfillment
of the requirements for the degree
Bachelor of Science in Civil Engineering**



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ABSTRACT

RAGAS, CARL PATRICK E. and VENZON, BEVERLY HANN B. Proposed Design of Four Storey Men's Dormitory Container Van Building in Cavite State University. Undergraduate Design Project. Bachelor of Science in Civil Engineering. Cavite State University Indang, Cavite. June 2019. Adviser: Engr. Renato B. Cubilla.

The study entitled “Proposed Design of Four Storey Men's Dormitory Container Van Building in Cavite State University- Main Campus” was conducted at Cavite State University- main campus from August 2018 to April 2019.

The study aimed to prepare a physical development plan and design a four- storey men's dormitory using container vans, and provide a complete architectural plan, structural plan, electrical plan and plumbing plan of the design project. This study served as a reference for the university for future projects.

The engineering softwares STAAD (Structural Aided Analysis and Design) was used in the analysis of structural framework and STAAD RAM Connection was used for the design of structural connections. The guidelines set by the National Structural Code of the Philippines (NSCP 2015) were followed in the design computation. The ultimate moment, shear and axial loads were the basis for the design. The container van used in the design has a length of 6 m, width of 2.4 m, height of 2.6 m and weight of 2230 kg.

All specification needed were followed in the design process. Detailed analysis and design was proven safe and economical after the manual computation of the design.

The physical development plan included a four- storey men's dormitory with floor areas, garden, bay in road and walkway.

The estimated project cost of the four- storey men's dormitory using container van with total floor area of was Php 16,892,835.19. The estimated cost per unit area was Php 10,245.60.

Based on the study conducted, it was found out that using container van as a building material is viable alternative to conventional reinforced concrete structure considering the quality of container van to be used and its standard specifications.

It is recommended to conduct a more comprehensive study in addressing the height temperature in a container van and hydraulic design of the water harvesting system.

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INTRODUCTION

Man overexploits the natural resources for his comfort. This may lead to scarcity of these resources in the near future. (Lamsal, 2017) This insufficiency has an impact in construction industry where plenty of these resources are being utilized as structural material. In the Philippines, the local supply in construction is not enough that is why it is encourage to import materials. Imports are very much needed and encouraged both the manufacturers and the traders to import according to Ernesto Ordoñez, President of Cement Manufacturers of the Philippines. Application of innovative materials are practiced and extensive research to obtain new compounds that would help construction profession. A material that is widely used in the construction industry and can be recycled is the steel. An example of this the container van or shipping container. Container van is a steel material formed into module or unit for freight and cargo transport which can be reused over the years. Its potential to be a structural material is