

**REINFORCED CONCRETE DESIGN OF FOUR STOREY  
BUILDING FOR PHYSICAL SCIENCE DEPARTMENT**

**DESIGN PROJECT**

**ALBERT DELA CRUZ CRUTO  
JOHNSON CORTES NUESTRO  
JOEL AUSTRIA PANGANIBAN**

**COLLEGE OF ENGINEERING AND  
INFORMATION TECHNOLOGY  
CAVITE STATE UNIVERSITY  
Indang, Cavite**

**April 2002**



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BUILDING FOR PHYSICAL SCIENCE DEPARTMENT**

An undergraduate **DESIGN PROJECT**  
**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



*Reinforced concrete design of four storey  
building for Physical Science Department  
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**ALBERT DELA CRUZ CRUTO**  
**JOHNSON CORTES NUÉSTRO**  
**JOEL AUSTRIA PANGANIBAN**  
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## ABSTRACT

**CRUTO, ALBERT D., NUESTRO, JOHNSON C., PANGANIBAN, JOEL A.,**  
Bachelor of Science in Civil Engineering, Cavite State University, Indang, Cavite. April  
2002. **REINFORCED CONCRETE DESIGN OF FOUR-STOREY BUILDING  
FOR PHYSICAL SCIENCE DEPARTMENT.**

Adviser: Engr. Marcelino A. Dagasdás.

The design project was conducted at Cavite State University from October 2001 to March 2002 and evaluated on the third week of February 2002 at the College of Engineering, Cavite State University.

The objectives of the study is to apply and develop the knowledge learned in design subjects and develop the design of a four-storey physical science building. The study includes the necessary documents such architectural plans, structural design and cost estimate. To present the three-dimensional outcome scaled model was developed. The design would serve as a reference for the decision-makers for future implementation.

The built-in capability of STAAD III linear analysis based on the stiffness within the elastic limit of the material was presented. The complexity of mathematical expressions involving matrix operation and dynamic operation was simplified by using STAAD II linear analysis method. Structural analysis involving modeling of the loads and the structural framework was done. Parameters like shears, reactions, and moments were obtained. These were used in determining the most economical sections.

The principles and considerations in designing a building were safety, economy and aesthetic.

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# **REINFORCED CONCRETE DESIGN OF FOUR STOREY BUILDING FOR PHYSICAL SCIENCE DEPARTMENT <sup>1/</sup>**

**Albert D. Cruto**

**Johnson C. Nuestro**

**Joel A. Panganiban**

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## **INTRODUCTION**

Structure is a combination of units constructed and so interconnected in an organized way, as to provide rigidity between its elements (Angeles, 1985). The basic elements of any ordinary structure are the floor and roof (including horizontal supporting members), columns and walls (vertical members), and bracing (diagonal members) or rigid connections used to give the structure stability. Building is the one of the most important structure in every society all over the world; it serves as a shelter in any activities conducted by every human being.

In the year 1965, the early physical science building was constructed under the vocational agriculture as a simple inverted U-shape, then the inverted U-shape became H-shape in the year 1987.