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**EVALUATION OF CONCRETE HOLLOW BLOCKS  
FABRICATED WITH COCONUT COIR,**

**SHREDDED WOOD AND  
OYSTER SHELLS**

**RESEARCH STUDY  
Applied Research IV**

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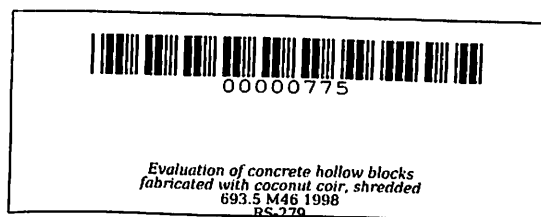
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# **EVALUATION OF CONCRETE HOLLOW BLOCKS FABRICATED WITH COCONUT COIR, SHREDDED WOOD AND OYSTER SHELLS**

**A Research Study Submitted to the Faculty  
Of Laboratory School, School of Education,  
Of Cavite State University  
Indang, Cavite**

**In Partial Fulfillment of the  
Requirements for Graduation of the  
General Science Curriculum**

**By**



**ERWIN ROMEN MEDINA**

**April 1998**

## ABSTRACT

MEDINA, ERWIN R., Applied Research IV (Gen. Science Curriculum), Cavite State University, Indang, Cavite, April 1998, **"Evaluation of Concrete Hollow Blocks Fabricated With Coconut Coir, Shredded Wood and Oyster Shells"**.

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Mr. Tadeo M. Mojica

The study entitled **"Evaluation of Concrete Hollow Blocks Fabricated With Coconut Coir, Shredded Wood and Oyster Shells"** was undertaken to determine the effects of using coconut coir, shredded wood and oyster shells on the physical properties of fresh and hardened concrete hollow block. The properties of the fresh concrete are; consistency, water gain, setting shrinkage, entrained air, density, and hardening and the properties of hardened concrete are compressive strength, volume changes, mass changes and density changes. The study also determined the economic feasibility of the concrete hollow blocks fabricated with the said materials. The study was conducted at Tambo Ilaya, Indang, Cavite and Provincial Engineer's Office, DPWH, Trece Martirez City, Cavite from November 1997 to February 1998.

The proportions used in the study were; *Treatment 1.* 3 parts sand to 1 part coconut coir; *Treatment 2.* 3 parts sand to 1 part shredded wood; *Treatment 3.* 3 parts sand to 1 part oyster shells; *Treatment 4.* 6 parts sand to 1 part coconut coir and 1 part shredded wood; *Treatment 5.* 6 parts sand to 1 part coconut coir and 1 part oyster shells; *Treatment 6.* 6 parts sand to 1 part

shredded wood and 1 part oyster shells; *Treatment 7*. 9 parts sand to 1 part coconut coir, 1 part shredded wood and 1 part oyster shells and *Treatment 8*. pure sand.

Highly significant results were obtained in the parameters such as mass, density, consistency, bleeding or water gain, setting shrinkage, entrained air, density, and hardening for the fresh concrete; mass, density, mass changes, density changes for the hardened concrete; and the production cost of each concrete hollow blocks produced. However, non-significant results were gathered from volume and volume changes of the hardened concrete hollow block.

It was proven that it is more advisable to use coconut coir, shredded wood and oyster shells as extender aggregate for the production of concrete hollow blocks than using pure sand alone in terms of strength and economic feasibility.

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<sup>1/</sup> A research study presented to the faculty of the Laboratory School, School of Education, Cavite State University, Indang, Cavite, in partial fulfillment of the requirements for graduation of Gen. Science Curriculum. Prepared under the direct supervision of Mr. Renato B. Cubilla and Mr. Tadeo M. Mojica.

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**Chapter I**

**INTRODUCTION**

Good clothes, good health, a furnished car and a good house; these are some of the most important material things that many of us want to have. However, the possession of these material things, especially housing, had been one of the major problems of the people of the world. With an increasing population of the Philippines, from 67,581 in 1995 to the projected 74,575 Filipinos by year 2000 (Inventory of Population, 1995) there will be more Filipinos who will crave for a better home.

The government is doing its best by providing Filipinos a better place to live in. However, different housing programs are not enough to house the whole population of the country. In addition, housing needs a good source of construction materials gained from our