PROPOSED TWELVE (12) STOREY SCHOOL BUILDING AT SAINT DOMINIC COMPLEX IN BACOOR CITY, CAVITE

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PROPOSED TWELVE (12) STOREY SCHOOL BUILDING AT SAINT DOMINIC COMPLEX IN BACOOR CITY, CAVITE

Practicum Report
submitted to the faculty of the
Graduate School and Open Learning College
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In partial fulfilment
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Master of Engineering
Major in Structural Engineering

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ABSTRACT

SAPANGHILA, ROBERTO P., Proposed Twelve (12) Storey School Building at St. Dominic Complex in Bacoor City, Cavite. Narrative Report. Master of Engineering major in Structural Engineering, Cavite State University, Indang Cavite. November 2014. Adviser: Engr. Marcelino A. Dagasdas Jr.

The practicum project entitled "Proposed Twelve (12) Storey School Building at Saint Dominic Complex In Bacoor City, Cavite" was conducted to prepare a structural analysis and design of twelve (12) storey school building of Saint Dominic College of Asia including the site development plan.

Basically this study focused on the design of building components and members like slabs, beams, columns, and footings.

The project was started by gathering of information through a series of inspection, line measurement and securing of previous data adapted to existing buildings of Saint Dominic College of Asia.

This practicum was conducted at Saint Dominic Complex, Talaba, Bacoor, Cavite from June 2014 to October 2014. The practicum activities followed four steps namely ; data gathering, development planning, architectural and structural planning including analysis and design results presentation.

Data gathering consisted of securing the location map, the existing site development plan, the existing drainage system and traffic flow inside the complex. In order to come up with a new site development, a careful study was conducted and a serious interview with the owners was made for a possible location of proposed building.

The enrolment trend was reviewed to project the enrolees in every school calendar year to anticipate what building level should be completed for that certain school year.

The main objective of this study was to structurally design a twelve storey school building projected to a ten year development plan. After the exact location had been

determined, the architectural and structural plans were drafted carefully. The structural computation processes followed including the design. The building main components was analyzed using STAAD software and designed using the spreadsheet program.

The design was tried first using concrete compressive strength of 33Mpa and steel reinforcement yield strength of 414 Mpa. The design result of trial sections were found to be too large, hence a higher yield strength was considerered.

In this study, it was recommended to use a higher compressive strength of concrete like 33Mpa (6000 psi) or greater to all structural members so as to minimized building component's section and will result in larger cross section. In construction, it was recommended to use the early strength additives for concrete to lessen the idle time of construction during curing. The use of Fibrocin fiber for slabs may lessen or avoid cracks during and after concrete curing.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figure **Page**

LIST OF APPENDIX FIGURES

PROPOSED TWELVE (12) STOREY SCHOOL BUILDING AT SAINT DOMINIC COMPLEX IN BACOOR CITY, CAVITE

Roberto P. Sapanghila

A narrative report submitted to the faculty of the Graduate School and Open Learning College, Cavite State University, Indang, Cavite, in partial fulfilment of the requirements for the graduation with the degree of Master of Engineering major in Structural engineering. Prepared under the supervision of Engr. Marcelino A. Dagasdas Jr.

INTRODUCTION

St. Dominic College of Asia is a private school, that was built in 2003. The school is strategically located that served as the gateway to major cities through its four access roads: the coastal road in the north leads to Metro Manila; Zapote road in the east leads to Alabang, Las Pinas and Muntinlupa; Emilio Aguinaldo Highway in the south leading to Cavite City, Tagaytay and Batangas areas. The gateway to the CALABARZON area.

Saint Dominic College of Asia (SDCA) traces its roots with Saint Dominic Medical Center (SDMC) in 1991 by its founder Don Gregorio and Dona Dominga Andaman. Twelve years after in 2003, SDCA was established. The college was mandated to offer programs in Caregiving and Bachelor of Science in Nursing in collaboration with the SDMC. Saint Dominic College of Asia has evolved into a full pledge collegiate institution with four schools: School of Health Science Profession (SHSP), School of Arts, Sciences and Education (SASE), School of International Hospitality and Tourism Management (SIHTM) and School of Business and Computer Studies (SBCS).