

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

ROBERTO P. SAPANGHILA

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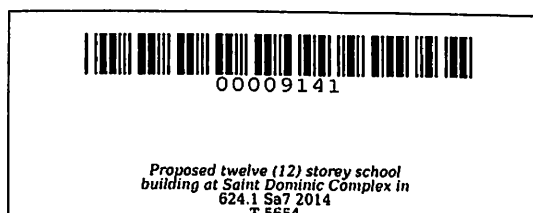
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**PROPOSED TWELVE (12) STOREY SCHOOL BUILDING
AT SAINT DOMINIC COMPLEX
IN BACOR CITY, CAVITE**

Practicum Report
submitted to the faculty of the
Graduate School and Open Learning College
Cavite State University
Indang Cavite

In partial fulfilment
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Master of Engineering
Major in Structural Engineering



ROBERTO P. SAPANGHILA
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ABSTRACT

SAPANGHILA, ROBERTO P., Proposed Twelve (12) Storey School Building at St. Dominic Complex in Bacoar 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 Bacoar 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, Bacoar, 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 enrollees 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 considered.

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

	Page
BIOGRAPHICAL DATA	iii
ACKNOWLEDGMENT	iv
ABSTRACT	vi
TABLE OF CONTENTS.....	viii
LIST OF TABLES	xii
LIST OF FIGURES	xiii
LIST OF APPENDICES	xiv
LIST OF APPENDIX FIGURES.....	xv
INTRODUCTION	1
Statement of the Problem.....	2
Significance of the Study	3
Objective of the Study... ..	3
Time and Place of the Study	4
Scope and Limitation of the Study	4
Definition of Terms	4
METHODOLOGY.....	11
Schedule of Activity	11

General Procedure Used	11
Planning	12
Site Investigation	12
Structural Planning	12
Analysis and Design	13
Beam Design	15
Column Design	15
Footing Design	16
Other Structure	16
RESULTS AND DISCUSSION.....	17
Existing Site Development Plan	18
Drainage System	20
Architectural	23
Building Description	25
Structural Analysis	25
Beam Design Result	26
Column Design Result	31
Slab Design Result	34
Building Construction Cost	36

General Procedure Used	11
Planning	12
Site Investigation	12
Structural Planning	12
Analysis and Design	13
Beam Design	15
Column Design	15
Footing Design	16
Other Structure	16
RESULTS AND DISCUSSION.....	17
Existing Site Development Plan	18
Drainage System	20
Architectural	23
Building Description	25
Structural Analysis	25
Beam Design Result	26
Column Design Result	31
Slab Design Result	34
Building Construction Cost	36

SUMMARY, CONCLUSION AND RECOMMENDATION.....	37
Summary.....	37
Conclusion.....	38
Recommendation.....	39
BIBLIOGRAPHY	40
APPENDICES.....	41

LIST OF TABLES

Table	Page
1 Enrolment trend of Saint Dominic College of Asia	43
2 Beam design result from 2 nd floor to 3 rd floor	26
3 Beam design result from 4 th floor to 6 th floor	27
4 Beam design result from 7 th floor to 9 th floor	28
5 Beam design result from 10 th floor to roof deck	29
6 Roof beam design result	29
7 Ground beam design result	30
8 Stringer design result	30
9 Ground floor to 3 rd floor column design result	31
10 4 th Floor to 6 th floor column design result	31
11 7 th Floor to 9 th floor column design result	32
12 10 th Floor to roof deck column design result	32
13 Roof deck to roof beam column design result	33
14 Bored pile design result	33
15 One way slab design result	34
16 Two way slab design result	34
17 Truss design result	35

18 Shearwall design result35

19 Stairs design result36

LIST OF FIGURES

Figure	Page
1 Design flow chart of beam.....	14
2 Design flow chart of column.....	15
3 Location plan of Saint Dominic College of Asia.....	17
4 Physical Plan of Saint Dominic College of Asia	18
5 Location of proposed twelve storey school building.....	19
6 Existing drainage system	20
7 Geotechnical data.....	21
8 Borehole data.....	22
9 Traffic flow.....	23
10 Perspective view.....	24

LIST OF APPENDIX FIGURES

Appendix Figures	Page
1 Ground floor plan.....	45
2 Second floor plan.....	46
3 Typical 3 rd , 5 th , 7 th , 9 th and 11 th floor plan.....	47
4 Typical 4 th , 6 th , 8 th , 10 th and 12 th floor plan.....	48
5 Roof deck floor plan.....	49
6 Front elevation.....	50
7 Rear elevation.....	51
8 Right side elevation.....	52
9 Left side elevation.....	53
10 Section 1.....	54
11 Section 2.....	55
12 Doors and windows schedule.....	56
13 Whole structure isometric view.....	57
14 Foundation plan.....	58
15 Typical 2 nd to 3 rd floor framing plan.....	59
16 Typical 4 th to 6 th floor framing plan.....	60
17 Typical 7 th to 9 th floor framing plan.....	61
18 Typical 10 th to 12 th floor framing plan.....	62
19 Roof deck framing plan.....	63
20 Roof framing plan.....	64
21 Column Footing Schedule.....	65

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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).