

**EXCEL-BASED CONSTRUCTION COST ESTIMATOR FOR
CONCRETE STRUCTURES**

Design Project

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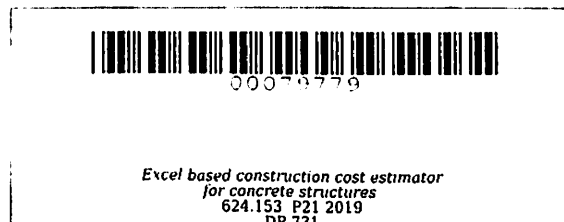
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EXCEL-BASED CONSTRUCTION COST ESTIMATOR FOR CONCRETE STRUCTURES

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ABSTRACT

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Efficient construction management is the key to success of any project and effective planning is the way to attain this. In the construction planning process, the cost estimation and scheduling are regarded as the most important parts because they set the guidelines and predict the outcome of the project. With the increased use of computers in the construction industry and spreadsheet programs such as Excel, many companies have converted their estimating forms into computer spreadsheets. To further develop technological solutions and provide reference for future researches, this study aims to design a computer-based construction cost estimator using Microsoft Excel.

The study was conducted from September 2018 to April 2019 at the Department of Civil Engineering, College of Engineering and Information Technology, Cavite State University, Indang, Cavite. The objectives of the study were to develop an Excel - based construction estimating software that will provide construction estimates fast, easy and efficient. The study also sought to understand the different methods and principles used in construction estimates as well as the wide range and beneficial usage of Microsoft Excel. The estimation covered the architectural works, structural works, electrical works, plumbing works, and finishing works.

The primary tool used in the study was the 2013-2016 version of Microsoft Excel. All data such as formulas, tables, principles and techniques were based on Simplified

Construction Estimate by Max. B. Fajardo Jr. and Estimating Bill of Materials by Vicente A. Tagayun.

The results were analyzed using percent-error formula to test the accuracy of the results. It is concluded that Microsoft Excel is a powerful tool and can be used in construction estimates.

TABLE OF CONTENTS

	Page
APPROVAL SHEET	ii
BIOGRAPHICAL DATA	iii
ACKNOWLEDGMENT	v
ABSTRACT	xi
LIST OF TABLES	xv
LIST OF APPENDIX TABLES	xvi
LIST OF APPENDIX FIGURES	xvii
INTRODUCTION	1
Statement of the Problem.....	2
Objectives of the Study.....	3
Significance of the Study.....	3
Scope and Limitation of the Study.....	4
Time and Place of the Study.....	4
Definition of Terms.....	4
REVIEW OF RELATED LITERATURE	7
METHODOLOGY	22
Sources of Data.....	22
Research Instrument.....	22
Preparation of Software.....	24
Flowchart of Software.....	26
Computations.....	26
Testing of Cost Estimator.....	42

Evaluation of Software.....	43
RESULTS AND DISCUSSION.....	44
Development of the Software.....	44
Testing the Construction Cost Estimator.....	47
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	53
Summary.....	53
Conclusions.....	54
Recommendations.....	55
REFERENCES.....	57
APPENDICES.....	59

LIST OF TABLES

Table		Page
1	Different types of cost.....	17
2	Bill of materials for earthworks.....	48
3	Bill of materials for concrete works.....	48
4	Bill of materials for masonry works	48
5	Bill of materials for steel reinforcement.....	49
6	Bill of materials for formworks and scaffolding.....	49
7	Bill of materials for miscellaneous works	50
8	Bill of materials of roofing works	51

LIST OF APPENDIX TABLES

Appendix Table	Page
1 Concrete proportion.....	64
2 Quantity of cement and sand for mortar and plaster per square meter.....	64
3 Length of reinforcing bars for CHB in meters	64
4 Quantity of no.16 G.I tie wire for CHB reinforcement per square meter.....	65
5 Standard weight of plain or deformed round steel bars in kilogram	65
6 Types of concrete.....	66
7 Quantity of cement and sand for mortar and plaster in cubic meter	66
8 Board foot of wood frame for column and beam per plywood form.....	66
9 Quantity of metal form for circular column	66
10 Quantity of lumber for scaffolding or staging	67
11 Number of spiral reinforcing bars per meter point	67
12 Filling materials.....	68
13 Type of slab reinforcement.....	68
14 Type of stairs.....	69
15 Quantity of tie wire on a one-way reinforced concrete slab in kilograms per square meter.....	69
16 Quantity of tie wire on a two-way reinforced concrete slab in kilograms per square meter.....	69
17 Quantity of tiles per square foot and meter.....	70

LIST OF APPENDIX FIGURES

Appendix Figure	Page
1 Screenshot of contents section.....	72
2 Screenshot of user guidelines section.....	73
3 Screenshot of column footing.....	74
4 Screenshot of wall footing	75
5 Screenshot of rectangular columns	76
6 Screensho of beams	77
7 Screenshot of tie beams	78
8 Screenshot of floor slab.....	79
9 Screenshot of wall	80
10 Screenshot of stairs.....	81
11 Screenshot of fire exit stairs (dimensions).....	82
12 Screenshot of septic tank and catch basins (dimensions).....	83
13 Screenshot of trusses.....	84
14 Screenshot of details of purlins.....	85
15 Screenshot of roofing accessories.....	86
16 Screenshot of door details.....	87
17 Screenshot of window details.....	88
18 Screenshot of electrical works (materials).....	89
19 Screenshot of plumbing works (materials).....	90
20 Screenshot of ceiling works details.....	91
21 Screenshot of floor tileworks details.....	92

22	Screenshot of wall tileworks details.....	93
23	Screenshot of painting details (exterior wall).....	94
24	Screenshot of painting details (interior wall).....	95
25	Screenshot of painting details (ceiling).....	96
26	Screenshot of list of materials.....	97
27	Screenshot of earthworks.....	98
28	Screenshot of concrete works.....	99
29	Screenshot of masonry works.....	100
30	Screenshot of reinforcements.....	101
31	Screenshot of formworks and scaffolding.....	102
32	Screenshot of roofing works.....	103
33	Screenshot of doors.....	104
34	Screenshot of windows	105
35	Screenshot of electrical works.....	106
36	Screenshot of plumbing works.....	107
37	Screenshot of ceiling works.....	108
38	Screenshot of invoice section.....	109
39	Flowchart of contents section.....	112
40	Flowchart of column footing section.....	114
41	Flowchart of slab sections.....	115
42	Flowchart of concrete works.....	117
43	Flowchart of masonry works.....	119
44	Flowchart of carpentry works	121

45	Flowchart of roofing works	123
46	Flowchart of painting works.....	126
47	Flowchart of exterior wall painting.....	127
48	Flowchart of interior wall painting	128
49	Flowchart of ceiling paint.....	129
50	Flowchart of plumbing works	131
51	Flowchart of floor finishes	133
52	Flowchart of wall finishes.....	134
53	Flowchart of electrical works	136
54	Ground floor plan	139
55	Second floor plan.....	140
56	Front view elevation	141
57	Rear view elevation.....	142
58	Left view elevation	143
59	Right view elevation.....	144
60	Cross-sectional view	145
61	Cross-sectional view	146
62	Schedule of doors.....	147
63	Schedule of windows.....	148
64	Roof plan.....	149
65	Ground floor lighting layout plan.....	150
66	Second floor lighting layout plan.....	151
67	Ground floor power layout.....	152

68	Second floor power layout.....	153
69	Schedule of loads.....	154
70	Electrical legends.....	155
71	Second floor drain and sewer layout.....	156
72	Ground floor water supple layout.....	157
73	Septic tank plan	158
74	Septic tank section.....	159
75	Catch basin details.....	160
76	Plumbing legends.....	161
77	Foundation plan.....	162
78	Details of column footing.....	163
79	Details of wall footing	164
80	Spacing of lateral ties	165
81	Second floor beam plan.....	166
82	Roof beam plan.....	167
83	Schedule of beams	168
84	Details of slab reinforcement	169
85	Roof framing plan	170
86	Details of trusses	171
87	Details of trusses.....	172
88	Details of trusses.....	173

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INTRODUCTION

According to Brandon (2008), the past forty years (roughly one working lifetime) have been a period of rapid technological progress across a wide range of human activity. The current trend of working methods as seen in different sectors of society is also seen to be gradually transitioning from manual approaches to automated systems. Automation appeals to a wide variety of people because it can provide services like computer-based analysis of information and reduce labor costs in the design, production and maintenance stages of production. One of the most commonly used automation systems in construction are the Computer-Aided Design (CAD) tools which allow modeling and planning of construction projects.

Efficient construction management is the key to success of any project and effective planning is the way to attain this. In the construction planning process, the cost estimation and scheduling are regarded as the most important parts because they set the guidelines and predict the outcome of the project. With the increased use of computers in the construction