HIGHER TECHNICAL INSTITUTE CIVIL ENGNEERING DEPARTMENT DIPLOMA PROJECT

PREPARATION OF BILL OF QUANTITIES USING COMPUTERS

BY

CONSTANTINOS KYTHREOTIS

C/866

JUNE 1999

PREPARATION OF BILL OF QUANTITIES USING COMPUTERS

BY

CONSTANTINOS KYTHREOTIS

PROJECT REPORT
Submitted to
the Department of Civil Engineering
of the Higher Technical Institute
Nicosia Cyprus
in partial fulfilment of the requirement
for the diploma of
TECHNICIAN ENGINEER
IN
CIVIL ENGINEERING

Project Supervisor: A. Kkolos

Lecturer in Civil Engineering Higher Technical Institute

Type of Project: Individual

Date of submission: 9th June, 1999

HIGHER PROJECT NO TECHNICAL 2931

ACKNOWLEDGEMENTS

I feel the necessity to express my appreciation to those who, in any way, have contributed in the preparation and completion of this Project.

Particularly, I would like to thank:

- Mr. Andreas Kkolos
- M.D.A.
- Mr. Marios Placotas
- Mr. Phivos Tsiappas
- Mr. Byron Christou
- Mrs Elli Rossides
- Mrs Kate Fterakides

And finally, I would like to express my deepest appreciation to

Miss MARIA-ELENA SHAYLOU

The Project is dedicated to MARIA-ELENA SHAYLOU

TABLE OF CONTENTS

		<u> </u>	age	2
Introduction		1	-	2
Sumn	nary	3		
CHAP	TER 1			
The B	Bill of Quantities	4		1
1.1	Purpose of Bills of Quantities	4	1	
1.2	The Content of a Bill of Quantities	4	- ,	5
	- Preliminaries	5		
	- Provisional Sums	5	-	6
1.3	Types of Bill of Quantities	6		
	- Trade Bills	6	-	7
	- Elemental Bills	7	-	8
	- Activity Bills	8		
	- Operational Bill	8	-	9
1.4	Methods of Taking-OFF			
	- Trade Method	9	-	10
	- Group Method	10	-	11
1.5	Methods of Preparing the Bills of Quantities			
	- The Traditional Method	12		1
		12		
	- By Computer	12	-	13
1.6	The Work of the Quantity Surveyor	13	-/	14
CHAP	The Work of the Quantity Surveyor TER 2 of Quantities by Computer	<i>y</i>	1	1
Bills	of Quantities by Computer	15	38	
2.1	Procedures	-		
2.2	Taking-off	15		18
2.3	Squaring and Custing	18		
2.4	Checking Process	18		

2.5	Computer Processing	19				
2.6	Production of Bills of Quantities	19	- 21			
CHAPTER 3						
Estimating						
3.1	What is Estimating	22				
3.2	The Task of an Estimator	22				
3.3	What influence Estimate	22	- 23			
3.4	On Cost (or overheads)	23	1			
	On Cost (or overheads) 1. Supervising Staff on Site	23				
	2. Establishment on Site	23				
	3. Other Labour Cost	24				
3.5	Profit	24				
CHAP	TER 4					
Quant	tities by Computer - BQ - MICRO COMPUTERIZED SYSTE	EM				
4.1	The System	25				
4.2	Building works description	25	- 26			
4.3	Creation of an item	26				
4.4	Pricing of Completed Bill		4			
	BQ Micro user manual	27				
CHAPTER 5						
Taking-Off						
CHAPTER 6						
Abstracting 58			- 74			
CHAPTER 7						
Bill of Quantities 75 - 86						
CHAP	TER 8	1	1			
Drawings						
CHAPTER 9						
Recommendations						
CHAPTER 10						
Conclusions						

INTRODUCTION

The main object of this project is to utilize the power of computer through a convenient software package to prepare a Bill of Qunatities. It gives the benefits and applications of the computer in the quantity surveying, and also information about the Bill of Quantities. It makes suggestions, about what computers have to offer in order to compete with the traditional methods used by quantity surveyors as well as suggestions about what the quantity surveyor has to do indoor to face the new technological age.

A quite good project for a big house which included basement, ground floor and first floor was chosen for preparing the Bill of Quantities.

The BQ MICRO computerised system was used for the preparing of a bill of quantities. A description of how the system works as well as the advantages and disadvantages are written in this project. All measurements were calculated net as specified in the SMM7. Moreover, samples of taking-off are given using the manual way for the purpose of comparison the results with the method of computer.

Some difficulties were arised at the very early time of using the BQ MICRO computerised system. These difficulties were firstly due to the descriptions in the library, of the system. In addition, due to this difficulty, some descriptions were appeared to have a different unit of measurement compared with the SMM7. In order to overcome this, some descriptions were changed, together with their unit in accordance with the SMM7, and some others remained the same.

Some errors, like duplication of a letter or inserting an unrelated figure in the descriptions or inconsistency in the drawing of vertical division (column) lines in the Bill of Quantities, are due to error in the programme of the computer.

138A.eII

SUMMARY

During the preparation of my Project, I have mainly covered the preparation of Bill of Quantities by Computerized System.

Furthermore, I have calculated the quantities of a specific house, using the taking-off traditional method.

I have also utilised my knowledge and several bibliography I had from HTI, such as the use of Standard Method of Measurement SMM7.

In order to prepare the relevant Bill of Quantities, I learned to use as a main tool the BQ MICRO Computerized System.

Finally, it can be said that the whole Project was considered to be very useful for learning how to prepare a Bill of Quantities by the use of Computers.