

**STUDY OF ACHIEVING QUALITY ASSURANCE
ON BUILDING SITES IN SRI LANKA**

G.W.T.C. Kandamby.

Thesis submitted in partial fulfillment of the requirements for the degree of Master of
Engineering in Construction Management

Department of Civil Engineering
University of Moratuwa

Srilanka

AUGUST 2000

72614

ABSTRACT

Quality of any product in any industry is the most important factor as it draws the customer's attention by fulfilling their needs. Quality of the construction project simply means the ability to satisfy the client's need, meet specifications and achieve project objectives. Like any other commercial customers, construction clients always wish to get their products in terms of value for money, conformance to specifications and fitness for the purpose and this can be defined as achieving the quality of the construction projects.

Quality management systems available in building construction in Sri Lanka were studied in this research in order to observe and compare their applications in actual practice. It was found that International Standards of Organization (ISO) 9000 specifies the more effective method for quality assurance and in this study only one construction company was found which maintains this standards. The quality management in construction contracts under this study is governed by the conditions given in the Institute for Construction Training And Development (ICTAD) documents which specify the limited scope of quality requirements. Its application in actual practices in building construction was found very unsatisfactory. Quality measures activities involved in construction sites were mostly carried out on the basis of visual inspection of the work gang and site staff without following any accept able guidelines. This study has revealed the necessity of implementing the systematic quality control system or quality assurance system according to the size of the building construction Projects in Sri Lanka in order to assure the quality of Buildings.

-

ACKNOWLEDGEMENTS

The research work described in this report was done for the Master of Engineering course in Construction Management conducted by the Department of Civil Engineering, University of Moratuwa.

I express my deepest gratitude to Dr. N. Gunawardena who supervised my work, by giving continues guidance and encouragement throughout this study.

I wish to express my sincere thanks to all lecturers and batch mates for their valuable advice and discussions at the progress review seminars.

I thank to the Department of Buildings for granting duty leave to attend the Postgraduate Diploma Course and research work.

I again wish to thank to all Building Construction Companies in Southern Province for providing their fullest cooperation to collect data in construction activities in their work sites in order to make this study a success.

I would like to acknowledge the valuable support given by Miss. S.D.Sadhani Department of Buildings, Galle, in preparing this report.

Very special thanks should go to my husband who gave continues encouragement and moral support throughout my postgraduate studies and research work.

CONTENTS

	Page Nos:
Contents	i
List of Tables	ii
List of Figures	iv
Chapter 01 - INTRODUCTION	1
1.1. Background	2
1.2. Objectives	2
1.3. Methodology	3
1.4. Chapter 02 - LITERATURE REVIEW	6
2.1. Introduction	7
2.2. Development of Quality	7
2.3. Background to ISO 9000	15
2.4. Quality requirements in ICTAD condition of contract	27
2.5. Quality requirements in ICTAD specification for building works	34
Chapter 03 - DATA COLLECTION	35
3.1. General	36
3.2. Development of Questionnaire	36
3.3. Questionnaire Survey	39
Chapter 04 - ANALYSIS OF RESULT	40
4.1. General	41
4.2. Analysis of ICTAD Conditions of Contract	41
4.3. Analysis of ICTAD Specifications of Building Construction	45
4.4. Analysis of existing Quality Practices	61
4.5. Comparison of ICTAD documents and Contract Practices	64
Chapter 05 - CONCLUSIONS AND RECOMMENDATIONS	84
5.1. Conclusions	85
5.2. Recommendations	86
REFERENCES	87
APPENDICES	88
Appendix - A	89
Appendix - B	99
Appendix - C	139

LIST OF TABLES

		Page Nos:
Table 4.1	Summary of Requirements in ICTAD Conditions of Contract	43
Table 4.2	ICTAD Specification for Materials	48
Table 4.3	Percentage of Degree of Specifications against with types of materials.	50
Table 4.4	ICTAD Specification for Work Processes	53
Table 4.5	Percentage of Degree of Specification against with types of work items.	56
Table 4.6	ICTAD Specifications for Handling, Storage and Delivery	59
Table 4.7	Percentage of Degree of Specification against with types of materials.	60
Table 4.8(a)	Summary of Coverage of Sub Requirements	62
Table 4.8(b)	Summary of Coverage of Site Supervisory Staff	63
Table 4.9	Comparison of ICTAD Documents and Contract Practices - Document and Data Control	65
Table 4.10	Comparison of ICTAD Documents and Contract Practices - Purchasing- Materials	67
Table 4.11	Comparison of ICTAD Documents and Contract Practices - Purchasing- Services	70
Table 4.12	Comparison of ICTAD Documents and Contract Practices - Materials / Works Identification and Traceability	72
Table 4.13	Comparison of ICTAD Documents and Contract Practices - Process Control	73

LIST OF TABLES (Contd)

Table 4.14.	Comparison of ICTAD Documents and Contract Practices - Inspection and Testing	76
Table 4.15	Comparison of ICTAD Documents and Contract Practices - Inspection and Test Status	78
Table 4.16	Comparison of ICTAD Documents and Contract Practices - Control of Nonconforming Works	79
Table 4.17	Comparison of ICTAD Documents and Contract Practices - Corrective and Preventive Action	81
Table 4.18	Comparison of ICTAD Documents and Contract Practices - Handling, Storage and Delivery	82



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

LIST OF FIGURES

		Page Nos:
Figure 1	Flow Chart on Research Main Activities	05



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk