

**A STUDY ON SITE RECORDS
MAINTAINED BY THE
CONSTRUCTION CONTRACTORS**

Researched by

Eng. G W SISIRA KUMARA
B.Sc. Eng (SL), C Eng., MIE (SL)

LIBRARY
UNIVERSITY OF MORATUWA, SRI LANKA
MORATUWA

**THIS THESIS IS SUBMITTED TO
THE DEPARTMENT OF CIVIL ENGINEERING,
UNIVERSITY OF MORATUWA LANKA.
IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR
THE DEGREE OF MASTER OF SCIENCE
IN CONSTRUCTION PROJECT MANAGEMENT 1998/1999**



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

Supervised by

89564

Prof. N. D. GUNAWARDENA
B.Sc. Eng.(SL),M.Sc., Ph.D., C Eng., MIE(SL)

624 '07
69:65(043)

DEPARTMENT OF CIVIL ENGINEERING
UNIVERSITY OF MORATUWA, SRI LANKA

October, 2007

University of Moratuwa



89564

89564

ACKNOWLEDGEMENTS

I express my deepest gratitude to Prof. N.D. Gunawardena who supervised my work, for his guidance and ever willing assistance and support.

I wish to thank to all lecturers and batch mates for their valuable advice and time devoted for discussions.

I am grateful to the Officers' in charge at the sites I visited for my research for their co-operation.

I would like to acknowledge the invaluable support given to me by former Senior Project Manager of State Engineering Corporation Mr. S.A.S. Jayawickrama.

Very special thanks should go to my wife and friends who gave continuous encouragement throughout the period.



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

Finally, I wish to thank the panel members for their valuable guidance in the final preparation of the thesis.



2.2.1.2 Meeting with Client, Engineer & RE	18
2.2.1.3 Check list for meetings – by contractor	19
2.2.1.4 Special site meeting and routine site inspection	19
2.2.2 Material management	21
2.2.3 Plant management	21
2.2.4 Management of sub contractors	22
2.2.5 Stores management	24
2.2.5.1 Stock recording system	24
2.2.5.2 Stores accounting & disposal	26
2.2.5.3 Management information system to the store	27
2.2.6 Management information system & use of computers at site	27
2.2.7 Construction, supervision and control	28
2.2.7.1 Site layout plan	28
2.2.7.2 Project administration	30
2.2.7.3 Progress monitoring & control	31
2.2.7.4 Cost control & payments	31
2.2.7.5 Prolongation & acceleration claims	32
2.2.7.6 Contract particulars and point of claims	34
2.2.7.7 Resolution of construction disputes	35
2.2.7.8 Employment and work place labour relations	36
2.2.7.9 Administration & records	37
2.2.8 Communication	37
2.2.8.1 Communication method	38
2.2.9 Safety and health	39
2.2.9.1 Safety	39
2.2.9.2 High risk activities	40
2.2.9.3 Check list for prevention of accidents	41
2.2.9.4 Health	42
2.2.10 Quality control	42
2.2.10.1 Supervision	43
2.2.10.2 Internal auditing	43
2.2.10.3 Quality records	44
2.2.10.4 Purchasing	45
2.2.10.5 Inspection and testing	46

2.2.10.6 Handling & storage	47
2.2.10.7 Training	47
2.2.10.8 Document control procedure	48
2.2.10.9 Quality plan procedures	50
2.3 Commissioning stage	51
2.3.1 Discharge of fiscal & legal obligations	53
CHAPTER 3: RESEARCH METHODOLOGY	54
3.1 Introduction	54
3.2 Development of the questionnaire	54
3.2.1 Scope management	55
3.2.2 Cost management	56
3.2.3 Time management	58
3.2.4 Quality management	60
3.2.5 Human resource management	61
3.2.6 Communication management	62
3.2.7 Risk management	63
3.2.8 Procurement management	64
3.3 Data collection from the contractors	66
3.4 Analysis the data received from the contractors	66
3.5 Summary	67
CHAPTER 4: DATA ANALYSIS & INTERPRETATION OF THE RESULTS	68
4.1 Introduction	68
4.2 Details of the data analysis	68
4.2.1 Average of documents maintained at the sites	68
4.2.1.1 Scope management	69
4.2.1.2 Cost management	69
4.2.1.3 Time management	70
4.2.1.4 Quality management	70
4.2.1.5 Human resource management	71
4.2.1.6 Communication management	71
4.2.1.7 Risk management	72
4.2.1.8 Procurement management	72

4.2.1.9 Discussion	75
4.2.2 The level of record keeping practice by the contractors	76
4.2.2.1 Initial stage	76
4.2.2.2 Construction stage	82
4.2.2.3 Final stage	88
4.2.2.4 Discussion	93
CHAPTER 5: CONCLUSIONS & RECOMMENDATIONS	95
5.1 Conclusions	95
5.2 Limitation of the research	96
5.3 Future research	97
5.4 Recommendations	97
REFERENCE	99
APPENDIX – 1 Questionnaire survey	i
APPENDIX – 2 Responses of the contractors'	vii
APPENDIX – 3 Checklists, forms, formats use in the sites	x



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

LIST OF TABLES

PAGE

Table 4.1: Average of documents maintained at the site	73
Table 4.2: Documents with highest level usage at the initial stage	77
Table 4.3: Documents with lowest level usage at the initial stage	80
Table 4.4: Documents with highest level usage at the construction stage	83
Table 4.5: Documents with lowest level usage at the construction stage	86
Table 4.6: Documents with highest level usage at the final stage	88
Table 4.7: Documents with lowest level usage at the final stage	91



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

LIST OF FIGURES	PAGE
Figure 2.1 Quality records for Purchasing	45
Figure 2.2 Quality records for Inspection & Testing	46
Figure 2.3 Quality records for Handling & Storage	47
Figure 2.4 Quality records for Training	48
Figure 4.1 The contractors maintained average documents of the Scope management	69
Figure 4.2 The contractors maintained average documents of the Cost management	69
Figure 4.3 The contractors maintained average documents of the Time management	70
Figure 4.4 The contractors maintained average documents of the Quality management	70
Figure 4.5 The contractors maintained average documents of the Human Resource management	71
Figure 4.6 The contractors maintained average documents of the Communication management	71
Figure 4.7 The contractors maintained average documents of the Risk management	72
Figure 4.8 The contractors maintained average documents of the Procurement management	72
Figure 4.9 Average of documents maintained at the sites	74
Figure 4.10 Documents with highest level of usage at the initial stage	78
Figure 4.11 Documents with lowest level of usage at the initial stage	81
Figure 4.12 Documents with highest level of usage at the construction stage	84
Figure 4.13 Documents with lowest level of usage at the construction stage	87
Figure 4.14 Documents with highest level of usage at the final stage	89
Figure 4.15 Documents with lowest level of usage at the final stage	92

LIST OF APPENDICES	PAGE
APPENDIX -1 Questionnaire survey	i
APPENDIX-2 Responses of the contractors	vii
APPENDIX -3 Checklists, forms, formats use in the sites	x



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