

Agreement No. CE 11/2002 (DS)
Drainage Improvement in Sai Kung – Design and Construction

Final Environmental Monitoring & Audit (EM&A) Manual

TABLE OF CONTENTS

1.	INTRODUCTION.....	1-1
1.1	Purpose of the Manual	1-1
1.2	Project Description.....	1-2
1.3	Project Location and Scope.....	1-2
1.4	Project Implementation	1-3
1.5	Environmental Monitoring and Audit Requirement	1-3
1.6	Project Organisation.....	1-3
2.	AIR QUALITY.....	2-1
2.1	Introduction	2-1
2.2	Air Quality Parameters.....	2-1
2.3	Monitoring Equipment.....	2-1
2.4	Laboratory Measurement / Analysis	2-2
2.5	Monitoring Locations.....	2-3
2.6	Baseline Monitoring.....	2-3
2.7	Ad hoc Impact Monitoring.....	2-4
2.8	Environmental Quality Performance Limits	2-4
2.9	Event and Action Plan for Construction Air Quality	2-5
2.10	Construction Dust Mitigation Measures	2-7
3.	NOISE	3-1
3.1	Introduction	3-1
3.2	Noise Parameters.....	3-1
3.3	Monitoring Equipment.....	3-1
3.4	Monitoring Locations.....	3-2
3.5	Baseline Monitoring for Construction Noise	3-2
3.6	Impact Monitoring for Construction Noise.....	3-2
3.7	Event and Action Plan for Construction Noise	3-3
3.8	Noise Mitigation Measures	3-3
4.	WATER QUALITY.....	4-1
4.1	Introduction	4-1
4.2	Water Quality Parameters	4-1
4.3	Monitoring Equipment.....	4-2
4.4	Measurement and Laboratory Analysis	4-3
4.5	Monitoring Locations.....	4-4
4.6	Baseline Monitoring.....	4-4
4.7	Impact Monitoring	4-4
4.8	Water Quality Mitigation Measures.....	4-10

5. WASTE MANAGEMENT	5-1
5.1 Introduction	5-1
5.2 Waste Control and Mitigation Measures	5-1
6. LAND CONTAMINATION.....	6-1
6.1 Introduction	6-1
6.2 Potential Areas Recommended for Further Investigation.....	6-1
6.3 Preparation of Contamination Assessment Plan	6-1
6.4 Mitigation Measures during Construction Stage	6-2
7. ECOLOGY	7-1
7.1 Introduction	7-1
7.2 Ecological Mitigation Measures and Monitoring	7-1
8. LANDSCAPE AND VISUAL IMPACT	8-1
8.1 Introduction	8-1
8.2 Environmental Monitoring and Audit Requirements.....	8-1
8.3 Baseline Monitoring	8-1
8.4 Construction and Operation Phase Audit.....	8-2
8.5 Event and Action Plan.....	8-3
9. CULTURAL HERITAGE.....	9-1
9.1 Introduction	9-1
9.2 Cultural Heritage Mitigation Measures.....	9-1
10. SITE ENVIRONMENTAL AUDIT	10-1
10.1 Site Inspection.....	10-1
10.2 Compliance with Legal Contractual Requirement.....	10-2
10.3 Environmental Complaints	10-2
11. REPORTING	11-1
11.1 General	11-1
11.2 Baseline Monitoring Report.....	11-1
11.3 Monthly EM&A Reports	11-2
11.4 Quarterly EM&A Summary Report.....	11-6
11.5 Final EM&A Review Report	11-7
11.6 Data Keeping.....	11-8
11.7 Electronic Reporting of EM&A Information.....	11-9
11.8 Interim Notifications of Environmental Quality Limit Exceedances	11-9

LIST OF FIGURES

Figure 1.1	Location Plan of Sai Kung River & Sha Ha Diversion Culvert, Pak Kong River and Ho Chung Channel
Figure 1.2	General Layout of Sai Kung River & Sha Ha Diversion Culvert
Figure 1.3	General Layout of Pak Kong River
Figure 1.4	General Layout of Ho Chung Channel
Figure 1.5	General Cross Sections
Figure 1.6	Typical Cut Sections

- Figure 1.7 Retaining Walls for Gabion Channel
- Figure 1.8 Project Organisation Chart
- Figure 2.1 Proposed Air Monitoring Station (Sai Kung River and Sha Ha Diversion Culvert)
- Figure 2.2 Proposed Air Monitoring Station (Pak Kong River)
- Figure 2.3 Proposed Air Monitoring Station (Ho Chung Channel)
- Figure 3.1 Proposed Noise Monitoring Stations (Sai Kung River and Sha Ha Diversion Culvert)
- Figure 3.2 Proposed Noise Monitoring Stations (Pak Kong River)
- Figure 3.3 Proposed Noise Monitoring Stations (Ho Chung Channel)
- Figure 4.1 Proposed Water Quality Monitoring Stations (Sai Kung River and Sha Ha Diversion Culvert)
- Figure 4.2 Proposed Water Quality Monitoring Stations (Pak Kong River)
- Figure 4.3 Proposed Water Quality Monitoring Stations (Ho Chung Channel)
- Figure 6.1 Location of Concerned Potential Zones for Site Investigation near Pak Kong River
- Figure 7.1 Proposed Receptor Site for *Ehretia acuminata*

APPENDICES

- Appendix A Implementation Schedule
- Appendix B Sample Data Sheet for Air Quality, Noise and Water Quality Monitoring
- Appendix C Sample Template for the Interim Notification