HONG KONG DISNEYLAND RESORT PROJECT

WASTE MANAGEMENT PLAN

January 2003

	:	Mr R F MORSE
Signed	:	
Position	:	DKRTP ET Leader
Date	:	28 January 2003
Verified By	:	Dr A Walker-Zeris
Signed	:	
Position	:	IECR
Date	:	28 January 2003

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Certified By	:	**Mr R F MORSE**
Signed	:	
Position	:	**HKITP ET Leader**
Date	:	28 January 2003
Verified By	:	**Ir Dr A Watker-Zeris**
Signed	:	
Position	:	**IECK**
Date	:	28 January 2003

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PROJECT WASTE MANAGEMENT PLAN

1.0 INTRODUCTION

1.1 General

a. Under the Further Environmental Permit (as set forth in the Project EM&A Manual [Annex D to the Project Construction Mitigation Monitoring Manual, which is Attachment 1 to Section 00136 of the General Requirements], HKITP must establish and implement a "Waste Management Plan" ("WMP") for both the construction and operational phases of the Theme Park, and pursuant thereto: -

1) has commissioned this "Project Waste Management Plan" ("P-WMP") to address waste management relevant to the construction of the first stage of the Theme Park. A separate Waste Management Plan will be prepared for the second stage of the Theme Park (once the decision has been taken to go ahead with Stage 2); and

2) will oblige each of HKITP's contractors carrying out works on-Site (collectively, the "Contractors" and individually, the "Contractor") to establish and implement their own contract-specific "Contractor's WMP" ("C-WMP") consistent with the requirements set forth herein, which they shall be required to submit for HKITP's review and acceptance; and

3) will commission a separate operational WMP prior to commencement of Theme Park operations.

b. HKITP, through the Project Manager (as set forth in the Project EM&A Manual), will be responsible for the handling, treatment and disposal of any wastes generated directly by its particular on-Site activities, which are anticipated to be office and domestic type wastes only. HKITP will have regard to this P-WMP for the handling and disposal of any waste its Project Site staff may generate and in its oversight of the implementation of each Contractor's C-WMP.

c. Each Contractor will be responsible for the handling, treatment and disposal of all its waste (whether directly or indirectly generated). Neither HKITP nor the Project Manager will be responsible for any actual construction works wastes arisings, but will endeavour to ensure that all waste management issues are appropriately addressed and observed by all Contractors.

d. Contractor shall engage one of the firms designated in Section 00052 (of the Particular Requirements) to: -

1) prepare and be responsible for Contractor's C-WMP pursuant to Paragraph 1.(a)(2) above in compliance with the requirements therefor set forth herein;

2) actively and comprehensively manage all of Contractor's waste handling and collection activities to ensure compliance with Paragraphs 1.2, 1.3, 1,4, 2.0, 3.0 and 4.0 below;

3) directly and exclusively perform and be responsible for the following of the Contractor's waste handling and collection activities: -

- providing waste collection bins and other containers of all sorts;
- handling, emptying and removal of those bins and containers;
- removal of waste of all sorts from the Site or Project Site; and
- pest and vermin control,

which firm is referred to hereinafter as the "Designated Waste Management Sub-contractor."

1.2 Contract-Specific WMP's

a. Each Contractor's C-WMP shall: -

1) use the "generic" C-WMP provided at Annex F [to Attachment 1 to Section 00136 of the General Requirements] as the basis and proforma for its preparation;

2) elaborate or expand on that generic C-WMP as noted therein or additionally as may be required to address all aspects of Contractor's waste management scheme;

3) be formally endorsed by the Designated Waste Management Sub-contractor;

4) use this P-WMP only as: -

- reference and instruction relevant to salient aspects of the Contractor's waste management responsibilities; and
- a guide for the establishment and implementation of Contractor's own waste management schemes;

5) not rely on this P-WMP as setting forth all of the Contractor's obligations relevant to waste management pursuant to the Environmental Requirements of under the Contract, and be reflective of Contractor's own independent assessment of those obligations;

6) set forth, in final (not draft) form, at a minimum: -

- their proposed arrangements for avoidance, reuse, recovery/recycling, collection, storage, treatment and disposal of the relevant categories of waste anticipated to arise from their works;
- their recommended mitigation measures relevant to construction waste management that are consistent with those set forth in the Environmental Requirements[1], with particular regard to the EIA Report (as set forth in the Project EM&A Manual); and

[1] The Environmental Requirements comprise: -

- the Land Grant (Plan No. ISM0331);
- the Fireworks Permit (granted to HKITP on 31 October 2000);

- the proposed designation of areas for segregation and temporary storage of re-usable and recyclable materials and,

upon completion thereof, be submitted to HKITP's ETL and IECK (as those are set forth in the Project EM&A Manual) for their verification that it has sufficient and particular regard to the information, recommendations and requirements set forth in the Environmental Requirements.

b. HKITP's ETL and IECK will certify and verify each Contractor's C-WMP submitted, which, subject to any revisions by HKITP's ETL, the Environmental Protection Department (EPD), any other relevant jurisdictional agency and/or IECK, will be employed by Contractor to perform its waste management obligations. During that certification and verification, a key criteria will be the degree to which the impacts predicted and the recommended mitigation measures remain consistent and appropriate to the manner in which the Contractor's works are to be carried out.

c. If, during the construction of the Theme Park, HKITP's ETL, EPD, any other relevant jurisdictional agency and/or IECK are of the view that the Contractor's C-WMP requires amendment, such instruction will be forwarded to the Project Manager for instruction of the relevant Contractor of the required amendment, which amendment Contractor will promptly implement.

d. Each Contractor's C-WMP may need further review once that Contractor's proposed work processes and activities have been defined following any supplementary environmental reviews (or issue of compliance reports) such as may be required to reflect changes in proposed construction methods or design.

e. For the avoidance of doubt, the Contractors shall, unless otherwise specified in this EM&A Manual or required by law, only take instruction and direction from the Project Manager or HKITP's ETL in respect to anything relating to or associated with this P-WMP.

1.3 EM&A Recommendations

a. Possible waste arisings during construction of the Theme Park will include construction and demolition (C&D) material, chemical waste and general refuse. Excavated material will also be generated, but it is expected that if not contaminated or otherwise unsuitable in accordance with each contract technical specification it can be re-used on-site, and thus off-site disposal is not addressed herein.

- the legislation, laws, statutes and ordinances in force or made from time to time during the development of the Project and any orders, notices, permits, directions, regulations, instruments or other subordinate legislation or technical memoranda or other guidance or requirements under the relevant legislation governing any form of pollution (including air, soil, water and waste pollution) and for the protection of the environment; and
- the "Further Environmental Permit" FEP-01/059/2000, which includes all documents referred to therein, including the Environmental Impact Assessment EIAO Register No. AEIAR-032/2000, completed February 2000.

b. The "Construction" Implementation Schedule (Section 16 Annex N of the EIA Report) reproduced in Annex C to the Project Construction Mitigation Monitoring Manual [Attachment 1 to Section 00136 of the General Requirements] provides details on the appropriate mitigation measures for avoiding and preventing adverse environmental impacts associated with excavated material, construction and demolition materials, chemical waste and general refuse.

c. In order to ensure that each Contractor has implemented the recommendations of the EIA Report, HKITP will conduct regular (with the first audit conducted at the commencement of the construction works and quarterly thereafter) of each of the contractor's waste streams to: -

1) determine if wastes are being managed in accordance with the approved procedures and the relevant C-WMP;

2) assess all aspects of contractor's waste management, including waste generation, storage, recycling, transport and disposal; and

3) ensure that the wastes arising from contractor's works are handled, stored, collected, transferred and disposed of in a manner that is environmentally acceptable and compliant with the relevant requirements under the Waste Disposal Ordinance (WDO) and its regulations; and

4) ensure that the Contractors properly implement the appropriate environmental protection and waste pollution control mitigation measures, as set forth herein and in the Implementation Schedule in Annex C to the Project Construction Mitigation Monitoring Manual [Attachment 1 to Section 00136 of the General Requirements] hereto to minimise and control the potential for waste impacts;

5) ensure the effective implementation of the Contractors' C-EMP and C-WMP; and

6) to encourage the reuse and recycling of materials.

1.4 Methodology and Criteria

a. The Contractors must ensure that the necessary waste disposal permits or licences are obtained and maintained from appropriate authorities in accordance with the relevant regulatory requirements.

b. In addition to the audits set forth in (c) above, each Contractor shall designate a member of his staff as being responsible for inspecting and auditing his on-Site waste management practices on a bi-weekly basis, with reference to the recommendations given in the "Construction" Implementation Schedule contained in Annex C to the Project Construction Mitigation Monitoring Manual [Attachment 1 to Section 00136 of the General Requirements] as well as the relevant regulatory requirements, including, but not limited to: -

1) General Legislation for Waste Management: -

- Waste Disposal Ordinance (Cap 354);
- Waste Disposal (Chemical Waste) (general) Regulation (Cap 354);

- Land (Miscellaneous Provisions) Ordinance (Cap 28);
- Public Health and Municipal Services Ordinance (Cap 132) - Public Cleansing and Prevention of Nuisances (Urban Council) and (Regional Council) By-laws; and
- Dumping at Sea Ordinance (1995); and

2) the storage, handling and disposal of chemical waste should be audited with reference to the requirements of the Code of Practice on the Package, Labeling and Storage of Chemical Wastes published by the EPD;

3) Other Relevant Guidelines: -

- Waste Disposal Plan for Hong Kong (December 1989), Planning, Environment and Lands Branch Government Secretariat;
- Environmental Guidelines for Planning In Hong Kong (1990), Hong Kong Planning and Standards Guidelines, Hong Kong Government;
- New Disposal Arrangements for Construction Waste (1992), Environmental Protection Department & Civil Project Managering Department;
- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (1992), Environmental Protection Department.
- Works Branch Technical Circular No. 6/92, Fill Management; Works Branch, Hong Kong Government;
- Works Branch Technical Circular 22/92, Marine Disposal of Dredged Mud;
- Works Branch Technical Circular, 32/92, The Use of Tropical Hard Wood on Construction Site; Works Branch, Hong Kong Government;
- Technical Circular No. 1-1-92 Classification of Dredged Sediments for Marine Disposal, Environmental Protection Department;
- Works Branch Technical Circular No. 2/93, Public Dumps, Works Branch, Hong Kong Government;
- Works Branch Technical Circular No. 16/96, Wet Soil in Public Dumps; Works Branch, Hong Kong Government;
- Works Bureau Technical Circular No. 4/98, Use of Public Fill in Reclamation and Earth Filling Projects; Works Bureau, Hong Kong SAR Government;
- Works Bureau Technical No. 5/98, On-site Sorting of Construction Waste on Demolition Site; Works Bureau, Hong Kong SAR Government;
- Waste Reduction Framework Plan, 1998 to 2007, Planning, Environment and Lands Bureau, Government Secretariat, 5 November 1999;
- Works Bureau Technical Circular No. 5/99, Trip-ticket System for Disposal of Construction and Demolition Material; Works Bureau, Hong Kong SAR Government; and

- Work Bureau Technical Circular No. 25/99, Incorporation of Information on Construction and Demolition Material Managing in Public Works Sub-committee Papers; Works Bureau, Hong Kong SAR Government.

2.0 HKITP PRINCIPLES OF WASTE MANAGEMENT

2.1 General Principles of Waste Management

a. The basic tenet of the construction P-WMP is to include standard procedures and protocols for waste reduction and recycling as well as the intents of HKITP as stated in the Environmental Management System ("EMS") employed for the Disneyland Resort in Anaheim, California, which will serve as the model for the Theme Park.[2]

b. The hierarchy for various waste options set forth in that EMS is: -

Elimination	Complete elimination of waste.	↑ Highest priority
Reduction at source	The avoidance, reduction or elimination of waste, generally within the confines of the production unit, through changes in processes or procedures.	
Recycling	The use, reuse and recycling of wastes for original or some other purpose such as input material or materials recovery.	
Treatment	The destruction, detoxification, neutralization, etc, of wastes into less harmful substances.	Lowest priority ↓
Disposal	The release of wastes to air, water, or land in properly controlled or safe ways so as to render them harmless; land disposal may involve volume reduction, encapsulation, leachate containment and monitoring techniques.	

c. Regardless of how simple it may be, the basic tenet of any WMP (whether produced by the Contractors or HKITP) must always be to elevate waste management practices to the highest priority option available, as HKIPT firmly holds that it makes more sense to avoid producing a waste rather than to develop extensive treatment schemes once a waste is produced.

[2] In addition to other accolades, the Disneyland Resort has been designated "Recycler of the Year" in 1996 and 1999 by the California Integrated Waste Management Board.

2.2 Environmentally Responsible Purchasing

a. In the context of waste reduction, environmentally responsible purchasing involves the introduction of practices that discourage unnecessary purchases and encourage the purchase of products with improved recyclability, reduced packaging, greater durability, and where economically rational, with high recycled content. At a minimum, recycled paper for general use and recycled toners for photocopiers and printers shall be considered.

b. Waste minimisation is best accomplished at the source through careful planning, design and supervision of the works. Good management practices, such as responsible purchasing policies, purchasing targets, recycling of paper, etc., will reduce and prevent large amounts of waste being generated. Careful consideration of material requirements can minimise the amount of raw materials wasted and thus be more economical over the life cycle of the project.

3.0 WASTE MANAGEMENT COLLECTION, TREATMENT AND DISPOSAL

3.1 Waste Arisings

a. As identified in the foregoing, HKITP will not be engaged directly in maintenance, construction or demolition activities on-Site, and as such, the waste arising from HKIPT's Project Site based staff are anticipated to be confined to the general office (paper, packaging, toners, etc.), food service activities (lunch boxes and the remnants of such) and domestic waste types. In the EIA Report, it was estimated that at the peak of Theme Park construction, approximately 2.8 tonnes of general refuse would be produced per day. Although the size of the HKITP's Project Site office establishment remains to be determined, in order to put the quantities into context, the waste arising therefrom is forecast as 1kg/capita/day, thus the relative contribution to the general wastes from HKITP's Project Site staff (per se) will be small in terms of the overall wastes arising.

b. HKITP, through its construction contracts, will vest in each Contractor complete responsibility for construction waste minimisation and management in accordance with the Environmental Requirements and the particular terms of those contracts.

c. Wastes anticipated to be generated by Theme Park construction activities are identified in the "generic" C-WMP provided in Annex F, which shall be modified by each Contractor to meet the needs of their specific contract.

d. Refer to Annex D [to Attachment 1 to Section 00136 of the General Requirements] for discussion of HKITP's particular responsibilities relevant to its own waste management.

3.2 Waste Reduction

a. To encourage environmental awareness and try to reduce waste, reduce the number of photocopies to a minimum, copy on both sides of paper for internal documents (and external documents where appropriate) and use washable crockery, etc., rather than disposable cups, plates and cutlery/chopsticks.

b. A policy of recycling eg paper and toners or cartridges, if volumes are large enough to warrant collection, shall also be encouraged, with participation in a local collection scheme, if one is available.

c. Recycling bins for paper and toners shall be provided in Project Site offices to facilitate the recycling of paper.

d. Possible schemes for and some of the salient issues relevant to the reuse and recycling of construction waste are discussed in the "generic" C-WMP.

3.3 Waste Collection

a. Putrescible wastes, such as lunch boxes and domestic wastes generated on-Site, shall be stored in enclosed bins or compaction units separate from construction and chemical wastes.

b. Waste paper shall be stored in containers clearly marked as recyclable or waste.

c. Possible schemes for and some of the salient issues to the storage and collection of construction waste are discussed in the "generic" C-WMP.

3.4 Waste Disposal

a. Arrangements shall be made with a reputable waste collector to remove general refuse from the Project Site, separately from construction and chemical wastes, on a daily (or every second day) basis to minimise odour, pest and litter impacts.

b. No burning of refuse on-Site will be permitted.

c. Possible schemes for and some of the salient issues relevant to the treatment and disposal of construction waste are discussed in the "generic" C-WMP.

4.0 RELATED MEASURES

4.1 Prevent infestation by pests and vermin to the highest of industry standards consistent with good industrial hygiene and applicable regulations.

4.2 Eradicate any pests and vermin on-Site in compliance with applicable regulations.

4.3 Provide monthly status reports relevant to pest and vermin control on-Site.

END OF ANNEX

"GENERIC" CONTRACTOR WASTE MANAGEMENT PLAN

A general structure of a Contractor Waste Management Plan ("C-WMP") is set forth herein, and shall be used by the Contractor as a guide when preparing his contract-specific C-WMP(s). Sections where particular information must be provided by the Contractor are given *in italics*.

A. INTRODUCTION

1. General

a. The Contractor will be responsible for ensuring that all his employees (whether direct or indirect via sub-contractor arrangements) implement the accepted version of this Contractor Waste Management Plan (the "C-WMP") as an integral part of their daily activities on-Site.

b. The scope of this Contract is ... *[describe Works]*

c. The duration of the Contract is ... *[identify period between commencement of on-Site operations and issue of a Completion Certificate for the whole of the Works]*

d. Waste arisings forecast as a result of this Contract are given in Part D hereof.

e. A plan showing the Site layout is given in Figure *[X]*.

2. Contents of the C-WMP

a. This C-WMP has been prepared with full regard to both the current environmental legislation pertaining to construction activities and the specific requirements of the Contract relevant to environmental protection management.

b. This C-WMP addresses the potential impacts and necessary mitigation measures in the light of the Co-ordinated Construction Programme and/or Project Master Programme.

c. This C-WMP sets forth: - *[as a minimum]*

(i) the organisation of the Contractor's "Environmental Team" ("ET") and the particular responsibilities of Contractor's Key Personnel relevant to both general construction and environmental matters, as set forth in Part B hereof;

(ii) the proposed environmental protection management training scheme for on-Site staff, as set forth in Part C hereof;

(iii) a waste arisings forecast, as set forth in Part D hereof, that: -

- is based on a review of the Construction Programme, anticipated construction methods;
- time-scales the forecast waste arisings by each category of waste on a weekly basis over the duration of on-Site operations; and

- includes a definitive forecast of any chemical waste arisings, with identification of their timing and proposed methods of disposal therefor; and

(iv) a proposed waste management scheme, as set forth in Part E hereof, that sets forth particulars for: -

- proposals for reduction or minimization of the generation of C&D material;
- proposals for sorting of C&D material on-Site;
- proposals for the handling, recycling, re-use and return of suitable C&D material, including concrete, aggregates, timber, paper, cardboard, metals and plastics;
- "contingency plans" for handling of particular waste materials, such as oils, grease paint, etc.;
- the routes to be taken for disposal, taking into consideration the portion of inert C&D material that can be disposed of to public fill (and arrangements for delivery) and the non-inert C&D material (including general refuse) which requires alternative means for disposal; and
- a list of "control procedures" to be employed; and

(v) the relevant environmental reporting and auditing requirements (site inspections, frequency thereof, method of recording data, etc.), as set forth in Part F hereof.

B. CONTRACTOR'S ENVIRONMENTAL TEAM

1. The Contractor will appoint and identify suitably qualified individuals to be responsible for effecting the C-WMP, in particular the arrangements for the collection, treatment and disposal of wastes, and has identified by name those individuals and their responsibilities herein.

2. An organisation chart is attached as Appendix A hereto that illustrates the responsibilities of Contractor's Key Personnel and, in particular the Contractor's ET, and incorporates the key personnel of Sub-contractors.

[attach Appendix A]

3. Individual ET members and their responsibilities:

[to be expanded to reflect the specific establishment for each Contract]

a. Contractor's Representative, who will: -

(i) be responsible for overall planning, on-Site operations, staff supervision and external liaison as Contractor's "project manager";

(ii) be responsible for provision of adequate resources and support by Contractor to address relevant environmental protection management matters under the Contract, in particular to: -

- the Contractor's Environmental Team Leader in his enforcement of compliance from all of Contractor's on-Site staff and those of Sub-contractors;
- the Assistant Environmental Team Leader in his preparation and review of the C-WMP, his carrying out on-Site environmental audits and discharge of his other duties;

b. Contractor's Environmental Team Leader ("CETL"), who will: -

(i) identify the environmental training needs for Contractor's on-Site staff;

(ii) be ultimately responsible for all aspects of environmental issues relevant to the Contract, including implementation of the C-WMP;

(iii) arrange a monthly environmental meeting to review any environmental issues relevant to the Contract, including implementation of the C-WMP and other matters of on-Site performance;

(iv) arrange Contractor's staff to attend appropriate environmental training organized in-house or by external entities;

(v) review the Contractor method statement to ensure appropriate mitigation measures are implemented prior to the carrying out of the Works;

(vi) provide necessary support to the Assistant Environmental Team Leader for his carrying out on-Site environmental audits;

(vii) be permitted to have duties relative to quality, safety and health in addition to environmental protection management to the extent such additional duties do not prevent discharging the duties hereunder.

c. Contractor's Assistant Environmental Team Leader ("CETL-A"), who will: -

(i) act as in-house advisor to provide training and expertise to all levels of Contractor's staff in respect of any environmental protection management issues;

(ii) provide technical advice and support for the implementation of the C-WMP to Contractor's staff;

(iii) ensure that complaints are handled properly;

(iv) identify and keep track of any change to the Environmental Requirements, with particular regard to waste management targets and requirements;

(v) timely report to CETL and Project Manager regarding any of Contractor's non-compliance with any Environmental Requirements;

(vi) prepare a "Weekly Environmental Checklist" and a "Contractor's Monthly Environmental Progress Report" for submission to Project Manager;

(vii) identify any new and/or best available technologies applicable to the Works;

(viii) review and update the C-WMP no less than every six months during on-Site operations;

(ix) keep on-Site: -

- original instance of any statutory required environmental permits and/or licenses (including effluent discharge licenses);
- copies of all correspondences with EPD; and
- records for all trained personnel; and

(x) not be permitted to have any duties relative to matters other than environmental protection management without express consent of Project Manager, which consent may be withheld at Project Manager's discretion.

d. Environmental Co-ordinator(s), who will, amongst such other duties as they may be assigned: -

(i) assist the CETL-A in his preparation of Weekly Environmental Checklists and Contractor's Monthly Environmental Progress Reports

(ii) assist the CETL-A in the implementation of the C-WMP;

(iii) arrange routine Site inspections and review environmental inspection reports;

(iv) monitor and control the Works, including those of Sub-contractors, to ensure compliance with both contractual and statutory requirements;

(v) report any non-compliance to the CETL-A and recommend remedial action;

(vi) investigate and verify complaints and report to the CETL-A; and

(vii) ensure that remedial actions or mitigation measures are carried out as planned.

e. Foremen, who will, amongst such other duties as they may be assigned: -

(i) assist the CETL and CETL-A to implement the C-WMP;

(ii) control the Works, including those of Sub-contractors, to fulfill the requirements relevant to environmental protection management under the Contract;

(iii) report any non-compliance to the CETL-A and recommend remedial action;

(iv) carry out remedial actions or mitigation measures to rectify any non-compliance;

(v) ensure that on-Site environmental protection facilities are properly established and maintained; and

(vi) conduct environmental "tool box talks" with labourers and other on-Site workers to make them aware of required environmental protection practices.

f. Sub-contractors and other on-Site staff, who will, amongst such other duties as they may be assigned: -

(i) carry out agreed Project environmental protection practices as instructed by Contractor or Project Manager;

(ii) promptly report any non-compliance to Contractor's foremen;

(iii) actively participate in and co-operate with the CETL, CETL-A, Environmental Co-ordinators and/or Project Manager to achieve the environmental objectives established for the Project.

C. TRAINING

1. All on-Site staff will be trained or instructed in job-site cleanliness, hygiene and general avoidance of nuisance as a matter of course.

2. Waste management guidelines will be issued to advise all on-Site staff as to how to reduce waste generation and properly dispose of waste materials, with emphasis placed on sorting and segregation of wastes.

3. *[to be expanded to reflect the specific establishment for each Contract].*

D. WASTE ARISINGS FORECAST

[forecasts of waste categories, treatment/disposal routes and time of arisings to be defined with reference to the Construction Programme, with reference to Section 6.6 of the EIA Report]

1. Types and Sources of Waste

a. Construction activities for the Contract will result in the generation of various wastes, which can be divided into distinct categories based on their composition, as follows:

(i) Excavated Material *[if applicable]*

(ii) Construction and Demolition (C&D) Materials;

(iii) Chemical Waste; and

(iv) General Refuse.

2. Excavated Material

a. The excavated inert materials are mainly soil and rock, and are not anticipated to be removed from the Project Site.

b. *[additional information as applicable]*

3. Construction and Demolition (C&D) Materials

a. C&D Materials will arise from a number of activities during construction of the Works, and typically include: -

(i) wood from formwork and falsework;

(ii) scrap metals from off-cuts, re-bar, steel pipes and packaging;

(iii) plastic and paper from pre-formed products and packaging;

(iv) un-usable/surplus concrete and grout;

(v) damaged/contaminated construction materials; and

(vi) *[list others as applicable]*

b. The forecast quantities of C&D Materials are:

(i) *[insert forecasts]*

4. Chemical Waste

a. The major chemical waste arising from the construction of the Works are likely to be oils, lubricants, paints and solvents.

(i) Oil waste may be in the form of raw waste, or as sundries such as spent oil filters, or materials used to absorb oil leaks.

(ii) Lubricant wastes are likely to be generated from the maintenance of vehicles and mechanical equipment.

b. The forecast quantities of chemical wastes are:

(i) *[insert forecasts]*

5. General Refuse

a. General refuse will be generated largely by food service activities for on-Site staff, from office work and certain aspects of the construction works, and will include food wastes and packaging, waste paper, etc.

b. The forecast quantities of general refuse are:

(i) *[insert forecasts]*

E. WASTE MANAGEMENT SCHEME

1. Hierarchy of Waste Management Practices

   a. The basic tenet of this C-WMP is to elevate waste management practices to the "highest priority" option (as set forth below), since conceptually it makes more sense to avoid producing a waste rather than to develop extensive treatment schemes.

   b. The hierarchy of various waste options is shown below:

Elimination	Complete elimination of waste.	↑Highest priority
Reduction at source	The avoidance, reduction or elimination of waste, generally within the confines of the production unit, through changes in processes or procedures.	
Recycling	The use, reuse and recycling of wastes for original or some other purpose such as input material or materials recovery.	
Treatment	The destruction, detoxification, neutralization, etc, of wastes into less harmful substances.	
Disposal	The release of wastes to air, water, or land in properly controlled or safe ways so as to render them harmless; land disposal may involve volume reduction, encapsulation, leachate containment and monitoring techniques.	↓Lowest priority

2. General principles of management to be employed include: -

   a. the requirement to effect good waste management practice implemented on-Site;

   b. waste control within the Site, including effecting the reuse, recycling, treatment and disposal by proper segregation practices;

   c. removal of waste material produced on-Site;

   d. implementation of any mitigation measures to avoid or minimize potential adverse impacts associated with waste arising from the Works;

   e. waste minimization and recycling practices; and

   f. *[additional as applicable].*

3. Individual Measures for each Category of Wastes

   [include the description of the sorting, segregation, storing, reuse and recycle of various types of wastes]

   a. Excavated Material

      (i) Materials will be sorted, processed and re-used elsewhere within the Project Site.

(ii) If excavated material is required to be dumped in public dumps, the Fill Management Group of Civil Engineering Department will be advised.

(iii) *[additional as applicable].*

b. C&D Material

(i) Careful design, planning and good site management will be maintained to minimize over-ordering and waste of materials such as ready mixed concrete, mortars and cement grouts.

(ii) Formwork/faslework will be designed to maximise the use of standard wooden panels so that high reuse levels can be achieved. More durable alternatives such as steel formwork or plastic facing will be considered for repetitive areas to increase the potential for reuse.

(iii) C&D materials will be, as much as possible and practicable, separated into reusable items and materials to be disposed of or recycled.

- Sorting will be conducted at the immediate working area to avoid loss or leakage during handling.
- Useful materials such as timber, rubble and steel/metal will be segregated for reuse.
  - Formwork and timber will be cleaned for reuse.
  - Off-cuts of reinforcement will be sorted into usable lengths and short off cuts stacked for scrap metal.
  - Where it is no longer reusable, steel and metal items will be sent as scrap for recycling.
- All C&D materials for disposal will be separated into different categories for disposal at landfills, public filling areas or in filling areas provided by the Contractor off-Site.

(iv) *[additional as applicable].*

c. Chemical Waste

(i) For chemical waste produced from a process, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, a 'Chemical Waste Producer' register will be made with EPD.

(ii) Chemical waste will be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Waste.

(iii) the Chemical Spill Procedure set forth in Part [5] below will be implemented to control any chemical spill with risk to occur;

(iv) Preventive measures will be implemented for leakage and spillage of fuel and lubricating oil to avoid contamination of the construction site, including: -

- all workshops will be located on impermeable areas with provision of drainage channels and interceptors to allow separation of oils from water and release of treated water;
- oils accumulated in interceptors will be regularly removed to prevent oils and grease from overflowing into the surface water drainage system and ground water tables;
- interceptors will have a bypass to drain heavy rains;
- oil and fuel bunkers will be bunded to accommodate oils from accidental spillages; and
- waste collected from any grease traps will be collected and disposed of by licensed contractor.

(v) Regular maintenance will be carried out on all constructional plant and equipment, and the maintenance records will be kept in the Site office.

(vi) Containers used for the storage of chemical waste will: -

- be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;
- have a capacity of less than 450 litres unless the specification have been approved by the EPD; and
- display a label in English and Chinese in accordance with instruction prescribed in the applicable regulations.

(vii) The storage area for chemical waste will: -

- be clearly labelled and used solely for the storage of chemical waste;
- be enclosed on at least three sides;
- have an impermeable floor and bunding to 110% capacity of the largest container or 20% of the storage capacity, whichever is the greatest;
- have adequate ventilation;
- be covered to prevent rainfall entering (and water collected within the bund will be tested and disposed as chemical waste if necessary); and
- be arranged so that incompatible materials are adequately separated.

(viii) Chemical waste will be disposed: -

- via a licensed waste collector; and
- either: -
  - to a facility licensed to receive chemical waste; or
  - to a re-user of the waste under approval from the EPD.

(ix) Trip tickets issued for every chemical waste collection made by the licensed waste collector will be retained and filed for future reference.

(x) On-Site staff involved in chemical waste handling will be instructed and be familiar with the waste handling procedures and guidelines.

(xi) Records of maintenance, such as cleaning and repair of chemical storage area, will be completed for each designated area and filed for future reference.

(xii) The Waste Disposal Authority will be informed on the final disposal of chemical waste.

(xiii) The location and particulars of the proposed chemical waste storage area is shown in Appendix B hereto.

[attach Appendix B]

(xiv) *[additional as applicable].*

d. General Refuse

(i) Office wastes will be reduced through recycling of paper if volumes are large enough to warrant collection.

(ii) Participation in a local collection scheme will be considered if one is available.

(iii) To encourage environmental awareness and try to reduce waste, the number of photo copies will be held to a minimum and copying will be done on both sides of paper for internal documents (and external documents where appropriate).

(iv) Recycling bins for paper will be provided in Site office to facilitate the recycling of papers.

(v) General refuse including food wastes (such as lunch boxes) and domestic wastes generated on-Site will be stored in enclosed bins or compaction units separate from construction and chemical wastes.

(vi) A reputable waste collector will be employed to remove general refuse from the Project Site, separately from construction and chemical wastes, on a daily or every second day basis to minimise odour, pest and litter impacts.

(vii) No burning or burying of refuse on-Site will be performed.

(viii) *[additional as applicable].*

4. General Waste Management Measures

a. As the Land (Miscellaneous Provisions) Ordinance requires that dumping licences be obtained by individuals or companies who deliver suitable construction wastes to public dumps (such licences being issued by the CED under delegated powers from the Director of Lands), any such licences as may be required will be applied for and obtained.

b. Environmentally responsible purchasing will be employed through the introduction of practices that discourage un-necessary purchases and encourage the purchase of products with improved recyclability, reduced packaging, greater durability, and where economically rational, with high recycled content (e.g., recycled paper, steel and other raw materials).

(i) As waste minimisation is best achieved through careful planning, design and supervision, good management practices will be employed to reduce and prevent un-necessary amounts of waste being generated, including: -

- management of raw materials from the first instance before they are ordered and delivered to Site;
- good estimation and planning to minimise the amount of raw materials wasted;
- controlling the generation of waste at source; and
- *[additional as applicable].*

c. Storage and Segregation of Wastes

(i) Areas and methods for material separation and segregation will be identified, including: -

- storage bins for food wastes;
- sacks for waste papers;
- baskets for reusable papers;
- *[additional as applicable].*

(ii) All such facilities will be clearly labelled and proper storage arrangements identified to ensure there are adequate measures in place for the avoidance of nuisance.

(iii) Disposal methods will be made known to all on-Site staff (including those of Sub-contractors).

5. Control Procedures

a. Typhoons and Heavy Rainstorms

(i) Precautions to be taken at any time of year when typhoon or rainstorms are likely: -

- silt removal facilities, channels and manholes will be maintained and the deposited silt and grit will be removed regularly;
- intercepting channels will be provided along the crest/edge of excavation to prevent storm runoff from washing across exposed soil surfaces;
- trenches will be dug and backfilled in short sections;
- measures will be taken to minimize the ingress of rainwater in to trenches; and

- *[additional as applicable].*

(ii) Actions to be taken when a typhoon or rainstorm is imminent or forecast: -

- silt removal facilities, channels and manholes will be checked to ensure that they can function properly;
- open stockpiles of construction materials such as aggregates, sand and fill materials on site will be kept to the minimal;
- all temporary covers to stockpiles will be secured; and
- *[additional as applicable].*

(iii) Actions to be taken during or after typhoons or rainstorms: -

- silt removal facilities, channels and manholes will be checked and maintained to ensure satisfactory working conditions.

b. Chemical Spill Procedure

Take the following actions when a chemical spill has been discovered: -

(i) alert all persons in the vicinity and inform the person in-charge of the Site; and

(ii) assess the situation and, if the spill is serious which will cause danger to nearby people, water bodies, natural habitats, etc., inform the Fire Service Department (FSD) and fence off the affected area, in which case: -

- all personnel will evacuate from the area and wait for FSD to arrive; and
- the work area supervisor will be present at the scene to provide the details of the chemical used and the occurrence of the incident when FSD arrives; and

(iii) if safe to do so: -

- where available, follow the emergency procedure as stipulated in the label on the container or the procedures set forth in OCP-ems-14 "Precautionary Measures for Work on Contaminated Land";
- put on personal protective equipment;
- stop the spillage;
- confine the spill with earth barriers;
- contain the spill inside the work area and prevent it from entering water ways and drainage systems, etc;
- switch off all heat and ignitable sources;
- do not allow workers to spray water to wash away the spill (since some chemicals are likely to float on top of the water); and
- *[additional as applicable].*

c. Emergency Contact Telephone List

(i) Emergency contact telephone lists will be distributed to employees or posted up in prominent locations.

(ii) *[additional as applicable]*.

d. *[additional as applicable]*.

F. REPORTING AND AUDIT

1. Waste Monitoring and Auditing

a. Adequate and proper records relating to the implementation of this C-WMP, such as trip tickets and measurement records, will be kept on-Site.

b. *[additional as applicable]*.

2. Reporting

a. The CETL-A will prepare a "Monthly Environmental Progress Report" that includes the following: -

(i) any significant environmental incidence that occurred in the month;

(ii) non-compliance situations and proposed mitigation measures;

(iii) records of complaints and the results of investigations thereof;

(iv) any relevant licenses/permits obtained or amended; and

(v) *[additional as applicable]*.

b. The Report will be submitted to HKITP's Environmental Team Leader for checking and inclusion in his Monthly Project Environmental Monitoring and Audit Report, and will be subject to certification by HKITP's Independent Environmental Checker consultant.

c. *[additional as applicable]*.

END OF ANNEX