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**Waste Management Plan:  
Development at Former Marine Police  
Headquarters KIL 1161**

**(Ref No. 3.12/050/2007)**

**May 2007**

**Plan Certified by the  
Environmental  
Team Leader:**

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**Plan Verified by the  
Independent  
Environmental  
Checker:**

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## CONTENTS

### 1. INTRODUCTION

### 2. WASTE MANAGEMENT ORGANIZATION

Key Contacts of the Project on Waste Management  
Responsibilities of Key Personnel  
Communication Channel and Information Flow

### 3. ENVIROMENTAL LEGISLATION AND STANDARDS

### 4. WASTE MANAGEMENT PLANNING, MITIGATION MEASURES AND PROTOCOLS

Introduction  
Public Fill Materials  
Construction and Demolition ["C&D"] Waste  
Chemical Waste  
General Refuse  
Stockpile Management  
Waste Flow Record  
Site Cleanliness  
Overall Waste Management Protocols  
The Previous Site Formation Contract  
The Present Works Contract

### 5. TRAINING AND RECORDS

### 6. WASTE MANAGEMENT SITE INSPECTION

#### Appendices

Appendix A: Construction and Demolition Material Disposal Delivery Form

## 1. INTRODUCTION

- 1.1 This Waste Management Plan ["WMP"] sets out in details the approach and procedures, Flying Snow Ltd. ["FSL"], its Architect Representative and contractors will adopt in the management of waste generated from the various different construction activities for the development of the Former Marine Police Headquarters.
- 1.2 The approach and procedures cover the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities and the recommended mitigation measures on waste management in the Project Profile (Register No. PP-204/2003) and the Environmental Review pursuant to the amendment of the Master Layout Plan approved in November 2005.
- 1.3 The main objectives of the WMP include, where applicable:
- To make reference to statutory waste management requirements and obligations
  - To set out waste handling procedures
  - To set out waste transportation procedures
  - To set out waste disposal procedures
  - To set out waste re-use procedures
  - To set out waste minimization procedures
  - To set out mitigation measures including auditing or checking requirements
- 1.4 The "Former Marine Police Headquarters Compound" is a declared monument under the Antiquities and Monuments Ordinance and is therefore a site of cultural heritage under EIAO. The exercise of the powers under the EIAO for this project is to control the earthworks and building works for the purpose of and in relation to the protection of this site of cultural heritage. While the present WMP gives guidance to waste management for all related earthworks and building works, specific requirements are provided only for the superstructure works and remaining site formation/foundation works responsible by the Contractor for this phase of the work. Should there be further updates or changes to the construction work, this WMP will need to be updated and re-submitted to EPD as per Clause 3.1 of the Environmental Permit ["EP"] No EP-184/2004.
- 1.5 Following this introductory section, this WMP is set out as follows:
- Section 2 provides details on the organization structure of the project and the responsibilities of the key personnel of the site team for waste management
  - Section 3 sets out the legislative framework in Hong Kong
  - Section 4 provides details of the requirements and procedures for the construction waste management and the mitigation measures
  - Section 5 sets out training and records keeping requirements
  - Section 6 provides details of audit/checking procedures to ensure compliance with WMP

## 2. WASTE MANAGEMENT ORGANIZATION

### Key Contacts of the Project on Waste Management

2.1 Key contacts of the project on-site waste management is given in Table 2.1

Table 2.1 Key project contacts on site waste management

Party	Name	Role	Phone No.
EPD	<b>Mr Wister Wong</b>	Environmental Protection Officer	<b>2150 8017</b>
Architect	<b>Mr Raymond C F Chan</b>	Project Architect	<b>2858 4778</b>
The Contractor	<b>Mr Howard Lui</b>	Project Manager	<b>2366 2812 / 9108 3955</b>
	<b>Mr S Y Cheng</b>	Site Agent	<b>9652 2181</b>
	<b>Mr T C Poon</b>	Site Safety Officer	<b>8104 1335</b>
Environmental Team	<b>Ir Dr Gabriel C K Lam</b>	Environmental Team Leader	<b>2877 3122</b>
Independent Environmental Checker	<b>Mr Billy Yu</b>	Independent Environmental Checker	<b>2872 2929</b>

### Responsibilities of Key Personnel

2.2 All personnel in the site team are required to implement waste management measures within the work area. A summary of the responsibilities of key project personnel for on-site waste management is as follows:

- The Project Manager ["PM"] will have the overall control and responsibility of the project and implementation of the WMP, including the maintenance of proper records and documentation. He/She will ensure sufficient resources and facilities are available and sufficient training of site staff and sub-contractors for compliance with the WMP and relevant statutory requirements. The PM will maintain a record of relevant licences and permits, and a register of complaint log. The PM is the focal point of contact for the main contractor by government departments, notably EPD, and interested parties including green groups and the public.
- The Site Agent ["SA"] will assist the PM in providing technical and practical supervision of project works and execution of the WMP. He/She will ensure design, work methods and practices take due consideration of avoidance and minimization of construction and demolition materials generation, maintain waste flow and trip tickets records, renewal of licences and permits, conduct induction training of site staffs and sub-contractors, investigate complaints and maintain complaint log, and update the WMP when necessary.
- The Site Safety Officer ["SSO"] will assist the PM in weekly safety and environmental walk to check safe and environmentally acceptable handling of waste and materials on site, waste flows and trip tickets records.
- The Environmental Team ["ET"] Leader will assist the PM in handling EPD, and interested parties including green groups and the public on waste management, further audit checking on compliance with WMP and incorporating observations on the compliance with WMP in monthly

- environmental monitoring and audit submission to EPD.
- The Independent Environmental Checker ["IEC"] will give advice on waste management to Architect, Contractor, ET, and verify the audit findings and monthly submission of the ET Leader to EPD.

### Communication Channels and Information Flow

2.3 The communication channels and information flow for implementation of the WMP is depicted in Figure 2.1.

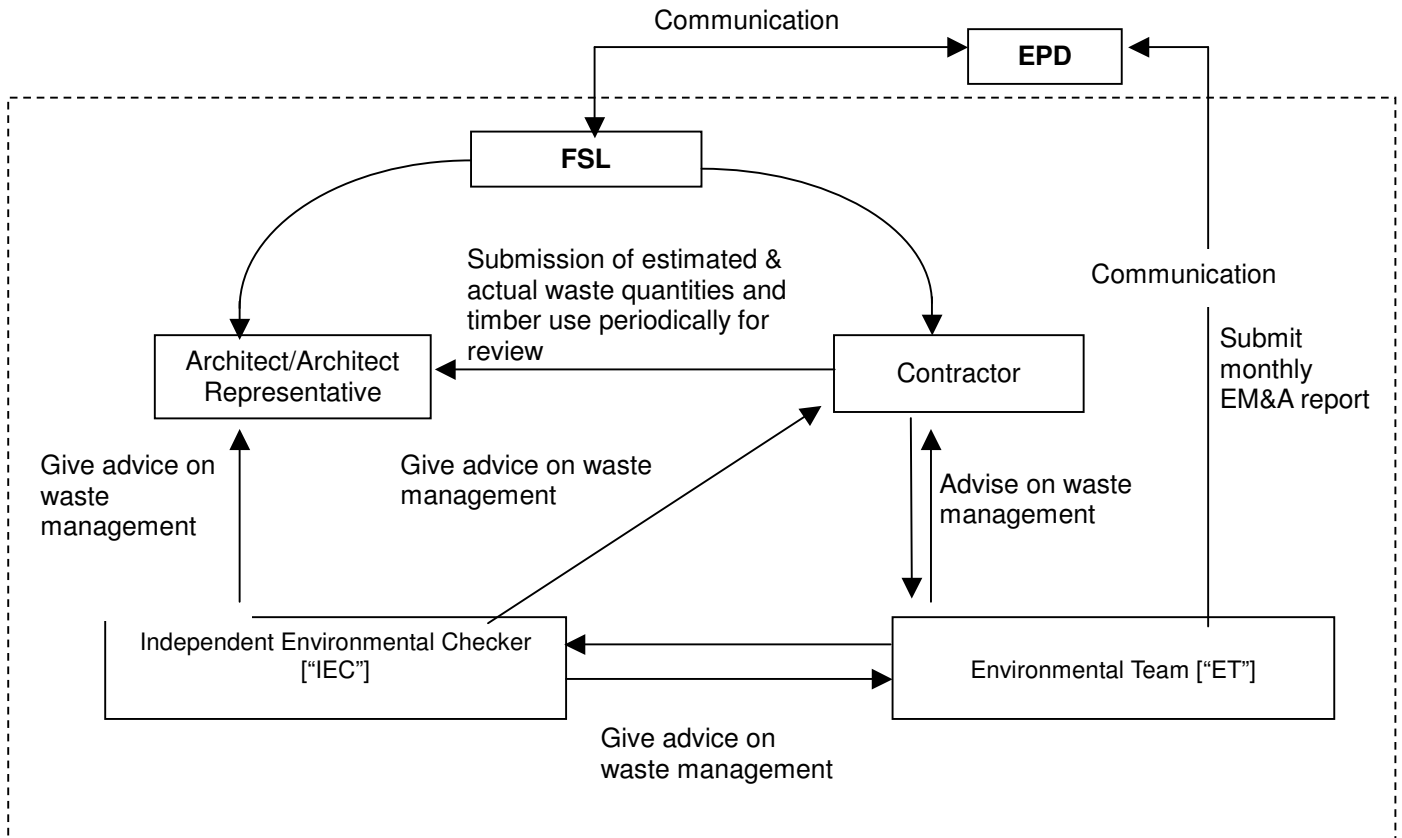


Figure 2.1 Communication Channel on Waste Management

2.4 The PM, SA and SSO of the Contractor will ensure compliance with the WMP through regular training, record maintenance and checking, weekly site safety and environmental walk. Any non-compliance will be rectified immediately on site. The ET will separately carry out weekly site audits and will report any non-compliance to the IEC and the Contractor and for further rectification and remedial action. The observation of the ET and subsequent actions taken by the contractor in the event of non-compliance will be documented in the monthly environmental monitoring and audit ["EM&A"] report to EPD. The monthly EM&A report must be verified by IEC.

2.5 When complaint is received, the response procedure as given in the Environmental Monitoring & Audit Manual of the project submitted to EPD will be followed. The procedure is repeated here in Figure 2.2 for easy reference.

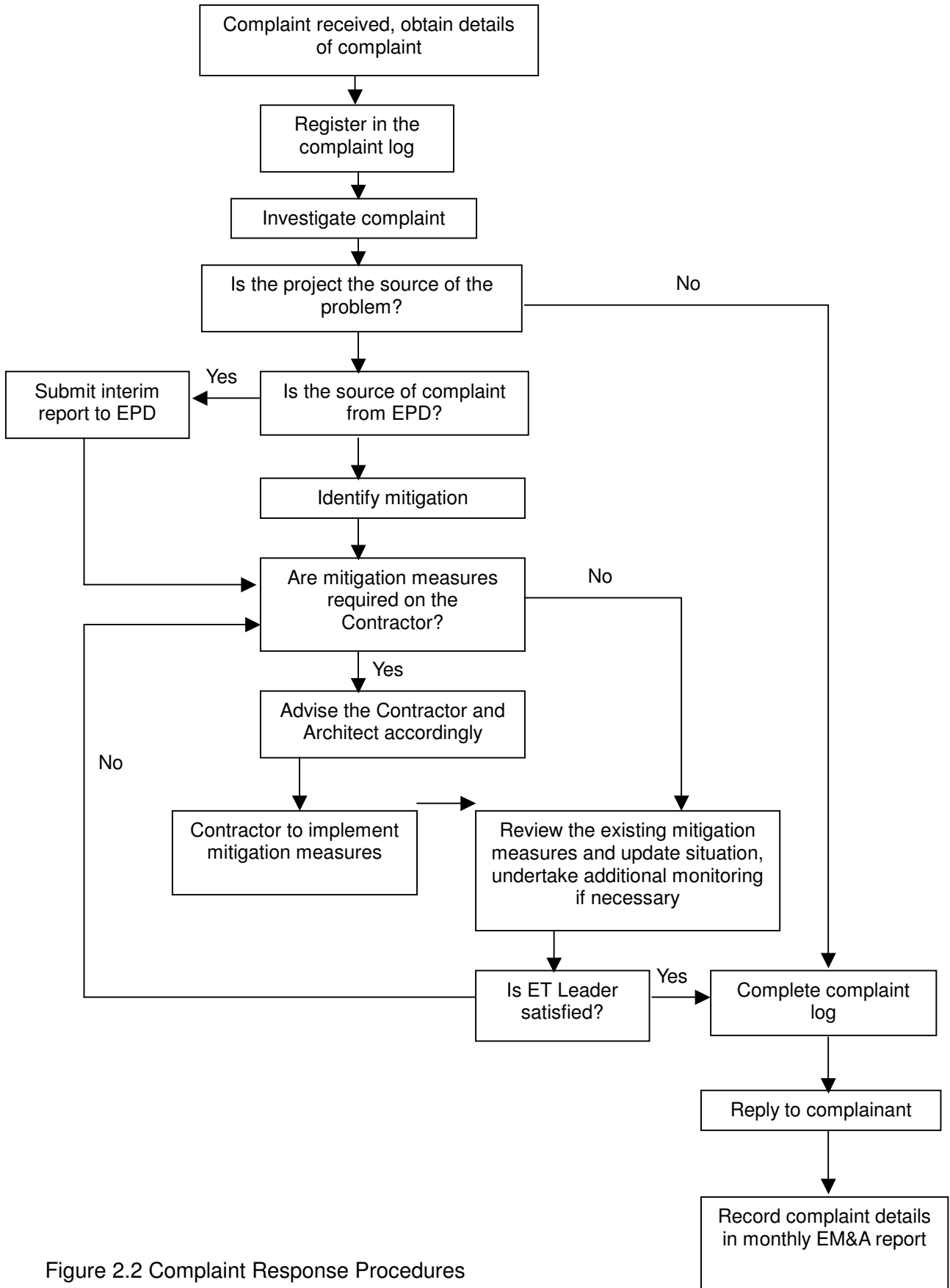


Figure 2.2 Complaint Response Procedures

### 3. ENVIRONMENTAL LEGISLATION AND STANDARDS

3.1 The following ordinances and regulations relate to the handling, treatment and disposal of wastes in Hong Kong and their relevant provisions shall be observed:

- (a) Waste Disposal Ordinance (Cap 354)
- (b) Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C)
- (c) Land (Miscellaneous Provisions) Ordinance (Cap 28)
- (d) Public Health and Municipal Services Ordinance (Cap 132) – Public Cleansing and Prevention of Nuisances (Urban Council) and (Regional Council) By-Laws
- (e) Dumping at Sea Ordinance (Cap 466)
- (f) Waste Disposal Plan for Hong Kong (December 1989), Planning, Environmental and Lands Branch, Hong Kong Government Secretariat
- (g) Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (2002), Environmental Protection Department
- (h) Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste, Environmental Protection Department
- (i) Works Bureau Technical Circular No. 2/93, Public Dumps
- (j) Environment, Transport and Works Bureau Technical Circular (Works) No. 16/96, Wet Soil in Public Dumps
- (k) Works Bureau Technical Circular No. 4/98, Use of Public Fill in Reclamation & Earth Filling Projects
- (l) Environment, Transport and Works Bureau Technical Circular (Works) No. 31/04, Trip Ticket System for Disposal of Construction and Demolition Material
- (m) Works Bureau Technical Circular No. 19/01, Metallic Site Hoardings and Signboards
- (n) Environment, Transport and Works Bureau Technical Circular (Works) No. 19/05, Environmental Management on Construction Sites
- (o) Environment, Transport and Works Bureau Technical Circular (Works) No. 22/03, Additional Measures to Improve Site Cleanliness and Control Mosquito Breeding on Construction Site
- (p) Environment, Transport and Works Bureau Technical Circular (Works) No. 33/2002, Management of Construction and Demolition Material Including Rock

3.2 The Contractor shall be responsible for obtaining all necessary permits and licenses as required by legislation. These may include, but not limited to:

- Chemical waste permits/ licenses under the Waste Disposal Ordinance (Cap 354)
- Public dumping license under the Land (Miscellaneous Provisions) Ordinance (Cap 28)
- Marine dumping permit under the Dumping at Sea Ordinance (Cap 466) (if necessary)

3.3 The Waste Disposal Ordinance [“WDO”] prohibits the unauthorized disposal of wastes. Construction waste is not directly defined in the WDO, but is considered to fall within the category of “trade waste”. The illegal tipping or fly tipping of wastes on unauthorized sites is also prohibited under the WDO.

3.4 Under the Waste Disposal Ordinance (Cap 354), non-inert construction wastes such as wood and other materials including glass and plastics should be disposed of to landfill sites. Reusable materials like steel and various metals shall be reused and recycled to avoid disposal at landfill.

3.5 The Waste Disposal (Chemical Waste) (General) Regulation provides for the control of the storage, collection, transportation and disposal of chemical wastes in

Hong Kong. Under the Regulation, chemical wastes are unwanted substances, which contain any substances or chemicals specified under Schedule 1 of the Regulation in such form, quantity and concentration that will cause pollution or constitute a danger to health or pollution risk to the environment.

- 3.6 A chemical waste producer will be required under the Regulation to register with the Director of Environmental Protection and to dispose of chemical waste to a licensed treatment facility. A local licensed treatment facility, such as the Chemical Waste Treatment Centre ["CWTC"] located at Tsing Yi, was commissioned in June 1993 and is designed to treat most of the chemical waste from the territory. In addition, and contractor employed for the collection of chemical waste must be a registered chemical waste collector under the Regulation.



## 4. WASTE MANAGEMENT PLANNING, MITIGATION MEASURES AND PROTOCOLS

### Introduction

- 4.1 The purpose of this section is to describe the proposed mitigation measures for compliance with statutory and contractual requirements as well as environmentally acceptable on-site management, transportation and disposal of wastes from the construction works applicable to all related earthworks and building works. Specific information for the present site formation contract is given towards the end of this section.

### Public Fill Materials

- 4.2 Public fill materials are inert virgin material removed from the ground and sub-surface. Public fill materials are not considered likely to cause adverse impacts due to their disposal, since they will be reused on-site as far as possible.

### Avoidance / Minimization Measures

- 4.3 The following measures are proposed

- Design for reusing excavated spoils as back-fill material to balance cut and fill so as to reduce the generation of excavated spoils as far as practicable
- The excavated soils for reuse as back-filling materials shall be properly managed to avoiding contamination. The stockpile management is proposed later in this section.

### Reuse and Recycle

- 4.4 The following measures will be adopted:

- Suitable excavated materials shall be sorted to recover the inert portions (e.g. soil and broken rock) for reuse
- Identify suitable inert materials by on-site sorting (e.g. broken concrete from demolition or road improvement works) that could be recycled as aggregates and recover the materials for delivery to government recycling facility (e.g. TKO Area 137 or Tuen Mun Area 38A, or any other sites approved by EPD).

### Disposal Methods

- 4.5 Materials that cannot be reused or recycled shall be disposed of at the Public Fill Stockpiling Area approved by the AR and the Director of Environmental Protection ["DEP"]. The delivery of the materials to disposal site shall be in either covered trucks or in enclosed containers to minimize windblown litter and dust.

### Construction and Demolition ["C&D"] Waste

- 4.6 Unwanted materials, rejected structures and parts generated from construction and maintenance activities, supply materials in surplus will lead to C&D waste generation. They may include:
- Wood from formwork and falsework
  - Equipment and vehicle maintenance parts
  - Materials and equipment wrappings
  - Unusable/surplus concrete/grouting mixes

- Damaged/contaminated construction materials

#### Avoidance / Minimization of C&D Material

4.7 The measures are proposed:

- Avoid, reduce or minimize the use of timber in temporary works construction as far as possible
- Careful design and planning with good site management to minimize over ordering and generation of waste materials such as concrete, mortars and cement grouts
- Proper control and documentation on material flow to minimize over-ordering
- Surplus materials shall be returned to stock in centralized area with suitable protective measures
- If possible, surplus materials should be exchanged with other sites, to minimize material wastage
- The design of formwork will use standard wooden panels as much as possible so that high reuse levels can be achieved
- Raw materials will be fully utilized to avoid wastage
- Current operation procedures including any waste reduction measures should be reviewed regularly, especially during installation and cutting, to avoid unnecessary use
- Broken items or off-cuts will be considered for sections where small lengths are required

#### Reuse and Recycle

4.8 The following reuse and recycling measures are proposed:

- Where necessary, alternatives such as metal scaffolding, steel formwork or plastic facing will be considered to increase the potential for reuse
- If possible, items such as hoardings, formworks, scaffoldings or trench supports will be reused
- Identify and list out the work processes or activities that will generate recyclable materials during construction
- Suitable metal shall be recovered on site for collection by recycling contractors
- Cardboard and paper packaging (for plant, equipment and materials) shall be recovered on site, properly stockpiled in dry condition and covered to prevent cross contamination by other C&D materials
- Demolition debris from demolition works shall be sorted to recover on site broken concrete, reinforcement bars, mechanical and electrical fittings as well as other building services fittings / materials that have established recycling outlets

4.9 To facilitate reuse and recycling, on-site sorting of C&D materials will be adopted. The following considerations should be given to the on-site sorting:

- Sorting should be made at the source of generation as much as possible to avoid double handling
- Sufficient spaces should be identified during the design stage and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials
- Proper protective measures, such as fences and tarpaulin, should be provided, in order to protect the temporary stockpiled materials for later use
- All non-inert materials, which cannot be reused should be removed off site as

soon as practicable in order to optimise the use of the on-site storage space to minimize potential environmental impact. If the non-inert materials need to be stored on site for a short period, the materials should be centralized and stored at specific areas far away from sensitive receivers

- Sorted inert C&D materials for disposal to public filling outlets should contain no observable non-inert materials.
- Inert C&D materials suitable for recycling into aggregates should be kept away from other C&D materials. They should be delivered to government recycling facility.
- Chemical wastes generated on the site shall be sorted and handled according the handling procedures of chemical waste mentioned later in this section
- General refuse generated on the site shall be sorted away from the inert C&D materials or reusable / recyclable C&D materials

### Disposal Methods

4.10 In order to minimize the impacts of wastes from demolition works, the wastes will be cleared as quickly as possible after demolition. The demolition and clearance works will therefore be undertaken simultaneously.

4.11 Suitable disposal sites for different kinds of C&D wastes are given in the following table.

Table 4.1 Disposal site for different C&D wastes

<b>C&amp;D Materials Types</b>	<b>Disposal Site</b>
<b>Steel</b> (Including steel mesh, reinforcement bars, window frames, railings, banisters etc.)	Licensed steel mills in Hong Kong; or Overseas steel mills.
<b>Inert materials</b> (Including reinforced concrete, asphaltic concrete, dirt/soil, bricks, masonry, mortar, plastic, ceramic tiles etc., that comply with the requirements of the Public Dumping Licence)	Tuen Mun Area 38 for recycling, Tsueng Kwan O Public Filling Area or any sites approved by EPD
<b>Non-inert materials</b> (Including glass, wood, bamboo scaffolding etc, that consists of less than 30% (by weight) of inert material)	South East New Territories ["SENT"] or government Landfill sites approved by EPD
<b>Chemical waste</b> (As defined under Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation)	Chemical waste treatment facility at Tsing Yi; or other Disposal facilities approved by EPD
<b>Asbestos waste</b>	Government Landfill Sites (Prior approval is required from Waste Management Group of EPD).
<b>General refuse</b>	Refuse transfer stations

4.12 The disposal of any slurry generated during construction works should follow the requirements of ProPECC Note 1/94: Construction Site Drainage

### **Chemical Waste**

- 4.13 Chemical waste likely to be generated from construction activities and maintenance of construction plant and equipment include, but not limited to the following:
- Scrap batteries or spent acid/alkali from their maintenance
  - Used engine oils, hydraulic fluids and waste fuel
  - Spent mineral oils/cleaning fluids from mechanical machinery
  - Spent solvents/solution, some of which may be halogenated, from equipment cleaning activities
- 4.14 It is anticipated that the quantity of chemical waste, such as lubricating oil and solvent produced from plant maintenance, will be small. Nevertheless, the production of these wastes must be registered with EPD, and they must be properly stored and must be transported by licensed collector and treated in a licensed treatment facility such as CWTC in accordance to the Waste Disposal (Chemical Waste)(General) Regulation.
- 4.15 The storage of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Waste published by EPD.

#### Containers used for the Storage of Chemical Wastes

- 4.16 The containers employed should:
- Be suitable for the substance to be stored, resistant to corrosion, maintained in a good condition, and securely closed. Table 3 “Chemical Compatibility of Common Containers with Different Chemical Waste Types” in abovementioned Code of Practice will be referred for the selection of substance.
  - Have a capacity of less than 450 l unless the specifications have been approved by EPD
  - Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Waste Disposal (Chemical Waste)(General) Regulation

#### Storage Area for Chemical Wastes

- 4.17 The storage area for chemical waste should:
- Be clearly labelled and used solely for the storage of chemical waste
  - Be enclosed on at least 3 sides
  - Have an impermeable floor
  - Be covered to prevent against rainfall
  - Be arranged so that incompatible materials are adequately separated

#### Disposal of Chemical Waste

- 4.18 Chemical waste should be collected by a licensed waste collector and disposed of at licensed facility such as the CWTC.

#### Spillage of Chemical Waste

- 4.19 In the event of emergency or accidents, spillage of chemical waste may be encountered and the following should be followed:
- Establish source of spill or discharge and determine nature of material.
  - Contain the spill and prevent discharge to drains
  - After spill is contained, clear the spill by pumping or suitable

adsorbent/absorbent

- The spill and any contaminated soil, adsorbent/absorbent should be handled and disposed as chemical wastes as mentioned above

### **General Refuse**

- 4.20 Construction site with large numbers of workers and site offices will generate general refuse requiring disposal. This will mainly consist of food waste, aluminium cans/paper packing for drinks and waste paper.
- 4.21 Mitigation against possible impacts due to general refuse should include:
- Provisions of temporary storage areas for general refuse to facilitate collection
  - Enclosed rubbish bins or compaction units separate from construction and chemical wastes be used for general refuse storage
  - Reputable waste collector be employed to remove general refuse from the site, separately from construction and chemical wastes, on regular basis to minimize odour, pest and litter impacts
  - Strict prohibition of burning of all types of wastes including general refuse on-site
- 4.22 Resources conservation such as use of both sides of papers and recycling of wastes by use of three colour-coded bins for refuse recycling and collection by respective waste recyclers are to be practised on site.

### **Stockpile Management**

- 4.23 Stockpile should not be mixed with any chemical wastes. Furthermore, the following management measures for the stockpiled materials will be considered to minimize potential impacts:
- The stockpiles of materials should be placed in the locations away from open drainage channel and any stream courses so as to avoid releasing materials into the water bodies. All stockpiled spoil > 50 m<sup>3</sup> should be covered with tarpaulin or other appropriate fabric to prevent runoff during rainstorms, or dust during dry and windy periods.
  - The stockpile locations should also be selected in such a way to minimize visual, noise and air quality (dust) impacts to any sensitive receivers.
  - The size of the stockpiles and associated working areas should be as small as possible.
  - All surplus spoil should be removed from the water gathering ground as soon as practicable.
  - Stockpiles will be loaded to truck for disposal as soon as possible to minimize the amount of stockpiles on site.
  - On-site storage of construction materials should be covered with tarpaulin or similar fabric all the times.
  - Providing fencing to separate sensitive habitats and landscape areas to prevent accidental stockpiling in these areas.
  - In areas where a large amount of exposed soils exist, earth bunds or sand bags should be provided.
  - Designating appropriate haulage routes.
  - Keeping the movement of stockpiled material to minimum.

### **Waste Flow Record**

- 4.24 All C&D materials, covering the following will be recorded for each month:

- The quantity of inert C&D materials generated from the project
  - The quantity of broken concrete generated from the project
  - The quantities of different C&D wastes generated from the project
  - The quantity of inert C&D materials being reused on site or other project(s)
  - The quantity of inert C&D materials being disposed to public filling area
  - The quantity of all recyclable materials collected by potential recycling contractors
- 4.25 The records will be compiled and submitted to the Architect by the contractor within the first week of the following calendar month.
- 4.26 The estimated and actual quantities of C&D materials that will be generated each year from the project will be reported, updated and submitted on a half-year basis. The half-yearly submission should be made to the Architect not later than 1<sup>st</sup> of June and December of each year.
- 4.27 The Contractor will also submit a summary table, "Summary Table for Work Process or Activities Requiring Timber for Temporary Works", containing the description, justification and the estimated quantity for every works process / activity requiring the use of timbers for temporary works construction. The submission should be made half yearly to the Architect for monitoring and review.
- 4.28 Waste C&D material disposed off site shall follow the arrangement given in ETWB TCW No. 31/04 "Trip-ticket System for Disposal of Construction and Demolition Material" for prevention of the illegal dumping. A ticket system for the disposal of C&D materials will be as follows:
- Provide a Construction and Demolition Material Disposal Delivery Form (C&DMDDF) such as per Appendix A to each and every vehicular trip transporting C&D materials
  - Prior to the vehicle leaving the site, the C&DMDDF shall be completed
  - For each vehicular trip, the completed C&DMDDF shall be presented to the operator of the Government Public Filing Facility prior to the disposal of C&D materials
  - A stamped form together with a computer printout receipt shall be received to acknowledge the disposal of public fill
  - The stamped form and the original receipts shall be submitted to the Architect's Representative for their review

### **Site Cleanliness**

- 4.29 To maintain the site in a clean and tidy condition during the construction, the following general measures will be implemented:
- Common areas to which site staff have access such as lockers, toilets, mess room and wash rooms should be maintained in clean and sanitary conditions at all times.
  - All sites are kept free from litter and general refuse at all times. Waste skips or garbage bins with suitable covers shall be provided at designated locations. All waste disposal points shall be maintained and cleaned regularly.
  - Pest control will be implemented for site offices and within site, if necessary. The use of pesticide is not allowed within the Water Gathering Grounds.
  - All staircases, passageways, corridors and emergency escape routes will be kept clear at all times.
  - Tools should not be placed on the floor or any location that could potentially

- cause an accident.
- Conduct regular inspections to ensure the implementation of the general measures on site cleanliness and implementation of the WMP. The detailed requirements for inspections will be discussed in Section 6 of this WMP.

### **Overall Waste Management Protocols**

- 4.30 Table 4.2 – 4.4 gives the overall waste management measures, storage, collection, transport and disposal for various wastes from the construction works.

Table 4.2 General waste management

Requirement			Responsibility
Activity	Frequency		
1	All staff involved in the day to day handling and management of waste shall, as a minimum, be instructed to observe the requirements of this WMP and the importance of waste minimization	Prior to work commencement and when new staff are recruited	Contractor to implement, ET to audit
2	All works areas shall generally be cleared of litter and refuse	Daily	Contractor to implement, ET to audit
3	General refuse and litter should be stored in enclosed bins or compaction units separate from construction or chemical wastes. Reputable waste collector should be used to remove general waste and litter off site for disposal.	Daily, or every other day.	Contractor to implement, ET to audit
4	Refuse should not be burned at any construction site	At all times	Contractor to observe
5	Three colour coded bin bins should be provided for collection of recyclable materials by different recyclers	Throughout Construction phase	Contractor to implement, ET to audit
6	Office wastes should be minimized such as by use of both sides of paper.	Throughout Construction phase	Contractor to implement
7	The Contractor shall aim to minimize waste generation through the following hierarchy: <ul style="list-style-type: none"> <li>• Avoidance and minimization</li> <li>• Reuse of materials</li> <li>• Recovery and recycling</li> <li>• Treatment and disposal according to relevant regulations, guidelines and good practices</li> </ul>	Throughout the construction phase	Contractor to implement



Table 4.3 Management of chemical waste and asbestos (if present)

Requirement			Responsibility
Activity	Frequency		
1	Where practical, processes generating chemical waste shall be identified	Throughout construction phase	Contractor to implement
2	Chemical waste (as defined by Schedule 1 or the Waste Disposal (Chemical Waste)(General) Regulation) should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes	Throughout construction phase	Contractor to implement, ET to audit
3	Asbestos waste (if present) is stored, handled and disposed of in accordance with the Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste	Throughout all asbestos abatement works	Contractor to implement, ET to audit

Table 4.4 Storage, collection, transport and disposal of waste

Requirement			Responsibility
Activity	Frequency		
1	All stockpiled spoil > 50 m <sup>3</sup> should be covered with tarpaulin or other appropriate fabric to prevent runoff during rainstorms, or dust during dry and windy periods	In advance of predicted rainstorms or particularly windy periods	Contractor to implement, ET to audit
2	No earth, building materials, soil and other materials should be stockpiled on site close to open drainage channel	Throughout the construction phase	Contractor to implement, ET to audit
3	All vehicles transporting wastes should have properly fitting tail boards and sides and materials should be securely covered	All vehicles transporting waste	Contractor to implement, ET to audit
4	Only waste haulers licensed for specific waste categories should be retained	Throughout the construction phase	Contractor to implement, ET to audit
5	All wastes should be stored in a manner ensuring that they are held securely without loss or leakage	Throughout the construction phase	Contractor to implement, ET to audit
6	All wastes should be removed from site in a timely manner	At the earliest opportunity and in accordance with requirements	Contractor to implement
7	All waste storage areas should be cleaned and maintained regularly	As necessary	Contractor to implement, ET to audit

8	All necessary disposal permits should be obtained from the appropriate authorities for each waste category	Prior to commencement of disposal	Contractor to implement, ET to audit
9	All waste should be disposed of to appropriate land filling or public dumping site, or to licensed chemical waste treatment facility	Throughout construction phase	Contractor to implement, ET to audit
10	The Contractors should maintain records of quantities of chemical wastes generated, recycled and disposal and agree the location of keeping these records with the Architect	Throughout construction phase	Contractor to implement, ET to audit
11	Surplus public fill will be transported to other contracts to satisfy fill requirements, other land formation sites for reuse or public filling areas	Throughout construction phase	Contractor to implement
12	The handling and disposal of bentonite slurries, if applicable should follow the Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94)	Throughout construction phase	Contractor to implement, ET to audit
13	The following properties of wastes should be noted: <ul style="list-style-type: none"> <li>Waste for landfill disposal should not contain &gt; 20% (by weight) inert material</li> <li>Waste for public dump/filling areas should be 100% inert</li> </ul>	Throughout construction phase	Contractor to observe
14	Set up on-site sorting procedure for the waste which could be reused and recycled	Throughout construction phase	Contractor to implement, ET to audit
15	Set up trip ticket system to avoid any illegal dumping.	Throughout construction phase	Contractor to implement
16	Record the quantities of wastes generated recycled and disposed, submit monthly and half-yearly estimated and actual C&D materials produced and timber use to Architect	Throughout construction phase	Contractor to implement

### The Previous Site Formation Contract

- 4.31 The site formation work by the first phase contractor ended in April 2007 and their main construction activities were piling and excavation, and certain tree falling works. The main wastes were C&D materials with small amount of metal wastes and general refuse. While finalized data up to end-April 2007 are not available at the time of updating of this plan, it is estimated that about 106,000tonnes of C&D materials have been generated and disposed of at Tsueng Kwan O Public Filling Area or at any EPD approved sites, 1300tonnes of general refuse disposed of at SENT landfill sites. Used chemicals, basically spent lubrication oil during the piling works were taken back to Contractor's site at Kwu Tung for checking of their reusability. Those which could not be reused were then disposed of at the Contractor's site already registered with EPD as Chemical Waste Producer (Waste Producer No. 5291-622-N2364-01). Except for piling machinery, change of

lubrication oil for excavator or other equipment would not be carried out on site and hence no spent lubrication oil was generated on site.

### **The Present Works Contract**

- 4.32 The present works contract covers the remaining excavation and building foundation work anticipated to last up to July 2007. This will then follow by superstructure works. Some modifications of the fence and hoardings will also be needed. Hence C&D wastes of different characteristics will be generated in addition to general refuse. Chemical wastes will also be produced on site and hence the Contractor is required to register with EPD as Chemical Waste Producer. A designated chemical waste storage and handling procedure in line with paragraph 4.13 – 4.19 will be in place.
- 4.33 The temporary storage/sorting areas on site for the present works contract is given in Figure 4.1. Should these locations be changed to suit progress of the site formation contract, EPD should be advised of any relocation of these areas. The practice is to remove waste materials from site as soon as possible hence reducing the need for large stockpile areas. Forecast of the waste flow for this contract will be as presented in Table 4.5.

Table 4.5 Waste Flow Table for the Present Works Contract

Types of Material	Estimated Quantity	Duration of Material Generation	Remark
<i>Inert Portion of C&amp;D Material (Public Fill)</i>			
Public fill that can be reused and/or recycled	From excavation works, 300m <sup>3</sup>	3 months (from May – July 2007)	The total amount of public fill generated will be in the range of approximately 250m <sup>3</sup> -300m <sup>3</sup> . All materials will be loaded to trucks as soon as possible before disposed to Tseung Kwan O Public Filling Area or approved facilities which include other construction sites.
<i>Non-inert portion of C&amp;D Material (C&amp;D Waste)</i>			
C&D waste to be recycled	Metals, 400tonnes	Jan 2008 – Feb 2008	Metal comes from existing supporting frame and will be sold to recycler.
C&D waste to be reused	Wood, 1tonne	Jan 2008 – Aug 2008	Wood will not be consumed until infrastructure works start. All timber if needed will be reused on site as far as possible.
C&D waste which has to be disposed of at landfills	From hoarding modifications, trace amount	Throughout the construction period.	C&D waste to be properly disposed of at SENT landfill facilities.
<i>Spent Materials of Chemical Nature</i>			
Lubricating Oil	From site and off site maintenance depot of contractors, 1000litres	Throughout the construction period. (primarily from May 2007 to July 2007)	The spent lubricating oil will be stored in a designated chemical waste store and taken away by licensed collector to Tsing Yi Chemical Waste Treatment Plant.
<i>General Refuse</i>			
Waste from construction and infrastructure works	50tonnes	Throughout the construction period.	Waste will be properly disposed of at SENT landfill facilities.
Waste which has to be disposed of at landfill	From site office etc., trace amount	16 months (from May 2007 to August 2008)	Waste will be properly disposed of at SENT landfill facilities.

Note: Strict prohibition of burning as a disposal means for all types of wastes

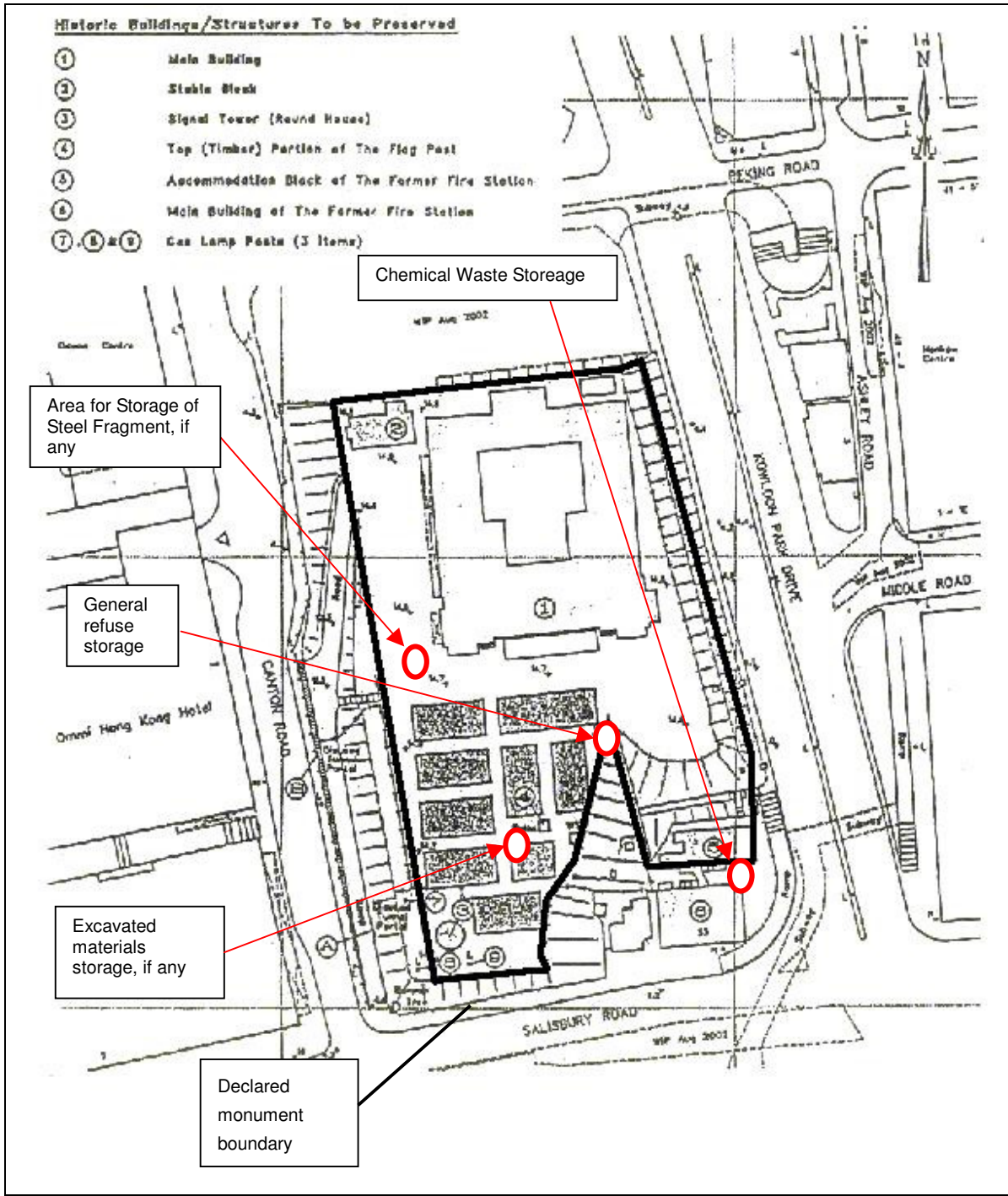


Figure 4.1 Storage and sorting areas within the site

Scale: N.T.S

## **5. TRAINING AND RECORDS**

- 5.1 The Contractor shall provide training on the requirements of WMP to all employees and subcontractors involved in the works.
- 5.2 An auditable training record will be maintained for all environmental trainings undertaken. The record should give date and nature of the training, the participants with signatures.
- 5.3 All records, together with permits, site inspection checklists & reports, etc, relating to the implementation of the WMP, shall be properly kept at site offices so that they can be easily produced when requested. These records include:
- Environmental Permit or Further Environmental Permit
  - Training Records
  - Inspection Checklists and Records
  - Records of Trip-tickets system and waste flows (i.e. updates of Table 4.1)
  - Licensed collectors lists
  - Any other records related to the implementation of WMP such as complaints

## **6. WASTE MANAGEMENT SITE INSPECTION**

- 6.1 The SSO will carry out weekly safety and environmental walk to check for environmentally acceptable and safe handling of materials and waste on site in compliance with the requirements of the WMP
- 6.2 In conducting the inspection, the SSO will check maintenance and integrity of records listed in paragraph 5.3 and make reference to the following:
- WMP and general site cleanliness
  - Table 4.2 – 4.4 of this WMP
  - Works progress and the construction programme
  - Previous auditing and site inspection results
- 6.3 The SSO will produce a record following each inspection giving the summary observations and corrective actions recommended when non-compliance is found. The record should be kept on site for separate audit by ET and verified by IEC when required.

**APPENDIX A: Construction and Demolition Material Disposal Delivery  
Form**



**Development at Former Marine Police Headquarters KIL 11161**

**Construction and Demolition Material  
Disposal Delivery Form**

Date: \_\_\_\_\_  
Contract No.: \_\_\_\_\_

Name of Contractor: \_\_\_\_\_

Location of Site: \_\_\_\_\_

Location of Public Filling Facility/Landfill: \_\_\_\_\_

Vehicle Registration No.: \_\_\_\_\_

Approximate Load: \_\_\_\_\_ Full / three quarter / half / one quarter

Remark: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Time of Departure: \_\_\_\_\_

\_\_\_\_\_  
Authorised Chop of  
Engineer's Representative/  
Architect's Representative

\_\_\_\_\_  
Authorised Chop of  
Operator of Government Public Filling  
Facility/Landfill

*Delete whichever inappropriate*