

Contract No. ED/2018/04  
Trunk Road T2 and Infrastructure Works  
for Developments at the Former South Apron

## PROJECT PLAN

# WASTE MANAGEMENT PLAN

### DOCUMENT REFERENCE NUMBER:

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	PREPARED BY:	INTERNAL REVIEW AND APPROVAL		
		Reviewed & Endorsed by:	Approved by:	
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SIGNATURE				
DATE	14 April 2020	14 April 2020	14/04/2020	14/04/2020



Ref.: CEDKTD2EM00\_0\_0038L.20

22 April 2020

Hyder-Meinhardt Joint Venture  
17/F, Two Harbour Square  
180 Wai Yip Street, Kwun Tong  
Kowloon, Hong Kong

By Post and E-mail

Attention: Mr. Edwin Ching

Dear Mr. Ching,

**Re: Agreement No. EDO 01/2019  
Independent Environmental Checker for  
Contract No. ED/2018/04 – Trunk Road T2 and Infrastructure Works for  
Developments at the Former South Apron**

**Waste Management Plan (Rev. B)**

Reference is made to the submission of Waste Management Plan dated 14 April 2020 certified by the ET Leader (ET's ref.: "MA20003/Corres/Out/ks200422" dated 22 April 2020) provided via e-mail on 22 April 2020.

We are pleased to inform you that we have no adverse comments on the captioned submission. We hereby verify the Waste Management Plan (for areas entrusted to Trunk Road T2 project only) in accordance with Condition 2.6 of EP-458/2013/C.

Thank you for your attention. Please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

For and on behalf of

Ramboll Hong Kong Limited



Ray Yan

Independent Environmental Checker

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Our Ref: MA20003/Corres/Out/ks200422

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By E-Mail  
22<sup>nd</sup> April 2020

**Attn: Mr. WONG Chi Wai, Tommy**

Dear Mr. Wong,

Contract No. ED/2018/04-Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron

**Environmental Team for Tseung Kwan O – Lam Tin Tunnel - Design and Construction**

**Environmental Permit No. EP-458/2013/C**

**EP Condition 2.6- Waste Mitigation Plan (Rev. B)**

We refer to the Waste Management Plan (Rev. B) submitted by Bouygues Travaux Publics on 15<sup>th</sup> April 2020 via email.

We are pleased to inform you that we have no further comment on your plan.

Should you have any queries, please contact our Ms. Karina Chan at 2151 3880 or the undersigned at 2151 2083.

Yours faithfully,

For and on behalf of  
Cinotech Consultants Limited



Mr. K.S Lee  
Environmental Team Leader

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Mr. Ray Yan

By E-Mail

By E-Mail

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**DOCUMENT STATUS**

**Details of Revision**

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A	12 Mar 2020	ALL	First Issue for Use
B	8 Apr 2020		Response as per EPD's comment

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Section No.	Rev.	A	B	C	D
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2.3		X			
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**(I) ABBREVIATIONS LIST**

C&D	Construction & Demolition
CEDD	Civil Engineering and Development Department
CM	Construction Manager
DDF	Disposal Delivery Form
DRS	Daily Record Summary
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring & Audit
EO	Environmental Officer
EPD	Environmental Protection Department
EP	Environmental Permit
ES	Environmental Supervisor
ET	Environmental Team
ETL	Environmental Team Leader
IEC	Independent Environmental Checker
PFRF	Public Fill Reception Facility
SOR	Supervising Officer's Representative
TKO 137	Tseung Kwan O Area 137 Fill Bank
TKO-LTT	Tseung Kwan O – Lam Tin Tunnel and Associated Works
TTS	Trip Ticket System
WFT	Waste Flow Table
WMP	Waste Management Plan



## 1 INTRODUCTION

### 1.1 Background

1.1.1 This Waste Management Plan is prepared for Contract ED/2018/04 Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron ("the Contract") for the Civil Engineering Development Department of HKSAR. This project is considered to be "Designated Projects", under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap 499) and Environmental Impact Assessment (EIA) Reports (Register No. AEIAR-174/2013 & AEIAR-173/2013) was prepared for the Project. The current Environmental Permits (EP) EP-451/2013 & EP-458/2013/C for the contract was issued on 19 September 2013 and 20 January 2017 respectively. These documents are available through the EIA Ordinance Register.

1.1.2 According to condition 2.6 of EP-458/2013/C state: "The Permit Holder shall, no later than one month before commencement of construction of the Project, deposit with the Director three hard copies and two electronic copies of a Waste Management Plan (WMP) for the construction stage of the Project. The WMP shall describe 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 shall include the recommended mitigation measures on waste management in the EIA Report. The WMP shall indicate the disposal location(s) of all surplus excavated spoil and other waste. A trip ticket system (TTS) shall be included in the WMP. Surplus excavated spoil and other wastes shall only be disposed of at designated disposal locations unless otherwise approved by the Director. All measures recommended in the WMP shall be fully and properly implemented by the Permit Holder and any person working on the Project throughout the construction period.

### 1.2 Scope of Work

1.2.1 This WMP applies to the works undertaken by BTP for the Contract. In this WMP, the Works Scope under EP-458/2013/C is Design and construction of Drill-and-blast Tunnel (two tubes with cross passages) under Cha Kwo Ling, of approximately 0.4km in length with dual 2-lane carriageway connecting between Cha Kwo Ling landfall and Lam Tin Interchange. This section also includes the Branch Tunnel to accommodate the slip road connecting the eastbound carriageway of the Trunk Road T2 to the Lam Tin Interchange.

Other Works under Contract ED/2018/04 encompasses two primary groups of Works, namely A) the Trunk Road T2 Works, and B) the Infrastructure Works for Developments at the Former South Apron. These Works are under the Scope of Works for EP-451/2013:



- A) The Trunk Road T2 Works:
- (i) Design and construction of Sub-sea TBM tunnel (two tubes with cross passages) under the Kwun Tong Typhoon Shelter and Victoria Harbour, connecting between the South Apron (of the Kai Tak Development) and Cha Kwo Ling, of approximately 2.1km in length with dual 2-lane carriageway.
  - (ii) Design and construction of Cut-and-Cover tunnel at the South Apron of approximately 0.10km in length connecting the Supporting Underground Structure (SUS) constructed under Contract KL/2014/03 to the Launching Shaft.
  - (iii) Design and construction of the Launching and Retrieval Shafts at the South Apron and Cha Kwo Ling landfalls, respectively, including the permanent tunnel structures within the Launching and Retrieval Shafts.
  - (iv) Design and construction of associated civil, structural, building, geotechnical, marine, environmental protection, landscaping, drainage and sewerage, waterworks and utility works for the Trunk Road T2 necessary for the commissioning of the Trunk Road T2.
  - (v) Design and construction of E&M Works, including ventilation, lighting, fire services, mechanical ventilation & air-conditioning, high voltage power supply, low voltage power supply, fire services, plumbing & drainage, central monitoring & control system for the Trunk Road T2.
- B) Infrastructure Works for Developments at Former South Apron
- (i) Design and construction of Stage 5 Infrastructure works at the Former South Apron of Kai Tak Development, including Single 2-lane Road L10 (Southern Section) and Road L18 of about 420m length; a single 2-lane Road S20 of about 230m in length; a landscaped elevated walkway FB02 of about 140m in length with associated lifts and staircase; demolition of an existing footbridge KF64; demolition of an existing building at Road S20; construction of drainage, sewerage and waterworks; construction of outfalls and modification of existing seawalls and associated footpaths; street lighting, traffic aids, landscaping, electrical and mechanical works.
  - (ii) Design and construction of associated roadworks and street furniture, electrical and mechanical works, utility works, drainage and sewerage, waterworks and landscaping for works to be constructed.
  - (iii) Implementation of environmental mitigation measures and related monitoring and auditing works.
- 1.2.2 This Waste Management Plan (WMP) is prepared to comply with Condition 2.6 of EP-458/2013/C.
- 1.2.3 The site location plans are provided in Appendix A.

### **1.3 Purpose of the Plan**

1.3.1 This WMP will describe the arrangements for avoidance, minimization, handling, reuse, recovery and recycling, storage, transportation, collection, treatment and disposal of the different categories of waste that are expected to be generated during the construction activities of the Contract. This WMP includes the recommended mitigation measures on waste management that are contained in the EIA report and EM&A manual.

1.3.2 The main objectives of this WMP are to:

- Provide reference to the applicable environmental legislation and guidelines pertaining to waste management.
- Clarify each party's responsibilities regarding waste management, and identify the personnel from each party that are assigned these responsibilities and their respective role on the Contract.
- Establish waste management practices and treatment procedures, for the avoidance, minimization, material reuse/recovery/recycling, collection, transportation, storage and disposal of wastes that are generated during the course of the Contract that are specified by the EP and the implementation of the mitigation measures that are outlined in the EIA report.

### **1.4 Project Waste Policy Statement**

1.4.1 A Project Waste Policy Statement has been established to do at all time what is necessary to comply with the legislation related to the waste management and to strive for the improvement of site environmental and hygiene conditions in all area under its control.



### Project Waste Policy Statement

It is the policy of Bouygues Travaux Publics (BTP) to do at all time what is necessary to comply with the legislation related to the waste management and to strive for the improvement of site environmental and hygiene conditions in all areas under its control. The BTP is committed to implement and maintain an environmental management system that complies with the requirements of ISO 14001:2015 to ensure that:

1. Avoiding or minimizing the waste generation through optimising the design approach in the project planning, such as material conservation technique;
2. Avoiding or minimizing the waste generation through optimising the construction method or sequence in the construction stage;
3. Reusing or recycling waste materials in other construction activities where possible;
4. Diverting waste to other construction sites or to public dumps for beneficial use if applicable;
5. Adopting better management practices on site to reduce cross contamination and promote waste segregation, sorting and reduction programme;
6. Installing appropriate facilities for segregation of various types of wastes; and
7. Arranging and facilitating collection of wastes by the appropriate waste recyclers as far as possible.

The Waste Management Plan (WMP) will be reviewed periodically by the Project Team and revised if necessary to achieve continual improvement. The requirement of this WMP will be communicated to all project staff who are required to diligently perform the duties that are assigned to them and to extend the understanding and acceptance of waste management policy to the subcontractors, suppliers and service providers.

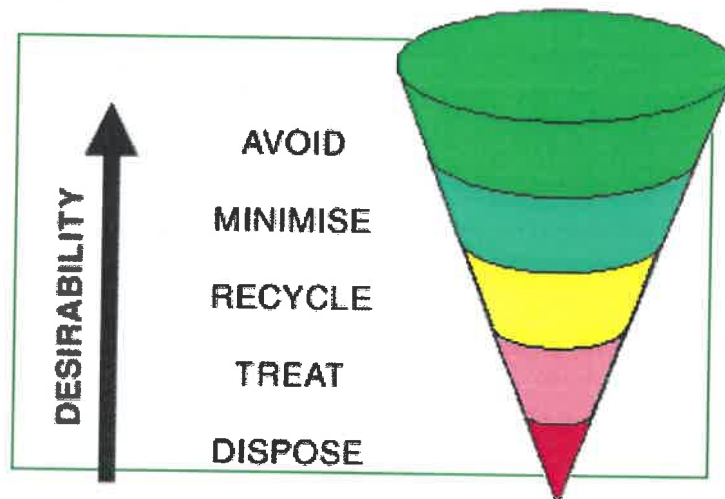
For Bouygues Travaux Publics (BTP)



  
Mr. Ivan CHAU  
Project Director  
Date: 6<sup>th</sup> November 2019

## 1.5 Waste Management Policy

1.5.1 BTP aims to recover, avoid and minimize the construction waste generated on site by utilizing the hierarchy illustrated below. This attempts to evaluate waste management practices and selects the best practical option since conceptually it makes sense to avoid producing a waste rather than developing extensive treatment schemes. Through good planning, and effective site management practices, BTP will minimise the amount of construction waste that is generated. The objective of BTP is to reduce and minimize the amount of wastes generated and hence minimise the costs associated with subsequent waste handling and disposal.



## 1.6 Regulations and Guidelines

1.6.1 During the course of the Contract, it is anticipated that various types of waste will be generated. Each distinct waste type will require a different approach for the effective management and disposal as stipulated in the applicable legislation and guidelines.

### Statutory Requirements

1.6.2 The following legislation relates to the handling, treatment and disposal of waste in Hong Kong:

- The Waste Disposal (Amendment) Ordinance (WDO) (Cap 354).
- The Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C).
- The Waste Disposal (Charges for Disposal of Construction Waste) Regulation. (Cap 354N).
- The Land (Miscellaneous Provisions) Ordinance (Cap 28).

- The Public Health and Municipal Services Ordinance (Cap 132) - Public Cleansing and Prevention of Nuisances (Urban Council) and (Regional Council) By-Laws.
  - Summary Offences Ordinance (Cap 228).
  - Other relevant regulations.
- 1.6.3 The WDO prohibits the unauthorized disposal of waste. Construction waste is not directly defined in the WDO, but is considered to fall within the category of “trade waste”. Under the WDO, wastes can only be disposed of at sites licensed by the Environmental Protection Department (EPD).
- 1.6.4 Under the WDO and the Charging Regulation, wastes can only be disposed of at designated waste disposal facilities that are licensed by the EPD. In this Contract, BTP is required to establish a billing account at the EPD before transporting the construction waste to the designated waste disposal facilities (e.g. landfill, public fill etc.). The billing account (no. 7036016) is approved by EPD on 9 Dec 2019.
- 1.6.5 Under the Waste Disposal (Chemical Waste) (General) Regulation, all producers of chemical wastes (including asbestos) must register with the EPD and treat their wastes either utilizing on-site plant licensed by the EPD, or arranging for a licensed collector transport the wastes to an appropriately licensed facility. The regulation also prescribes the storage facilities to be provided on site, including labelling and warning signs, and requires the preparation of written procedures and training to deal with emergencies such as spillages, leakages, or accidents arising from the storage of chemical wastes.
- 1.6.6 The current policy related to the dumping of construction and demolition (C&D) material is documented in the Works Branch Technical Circular No. 2/93, ‘Public Dumps’. C&D materials that are wholly inert, namely public fill, should not be disposed of at landfill, but should be taken to public filling areas, which usually form part of reclamation schemes.
- 1.6.7 The Land (Miscellaneous Provisions) Ordinance requires that dumping licenses be obtained by individuals or companies who deliver public fill to public filling areas. The Civil Engineering & Development Department (CEDD) issues the licenses under delegated powers from the Director of Lands.
- 1.6.8 The Public Cleansing and Prevention of Nuisances By-Laws provide further controls on the illegal tipping of wastes on unauthorized (unlicensed) sites.

1.6.9 The Contractor is required to obtain all necessary permits and licenses under these ordinances including, 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).

Non-Statutory Regulations

1.6.10 The following guidelines related to waste management and disposal would be adhered to during construction:

- Waste Disposal Plan for Hong Kong (1989), Planning, Environmental and Lands Branch Government Secretariat.
- Environmental Guidelines for Planning in Hong Kong. Hong Kong planning Standards and Guidelines (1990).
- New disposal Arrangements for Construction Waste, EPD and CEDD (1992).
- Code of Practice on the Packaging, Labelling and storage of Chemical Wastes EPD (1992).
- Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste, EPD.
- Works Branch Technical Circular No. 12/2000, Fill Management, Works Bureau, HKSAR Government.
- Works Branch Technical Circular No. 19/2005, Environmental Management on Construction Site, Works Bureau, HKSAR Government.
- Environment, Transport and Works Bureau Technical Circular (Works) No. 34/2002, Management of Dredged/Excavated Sediment, Environment, Transport and Works Bureau, HKSAR Government.
- Works Branch Technical Circular, 32/92, the Use of Tropical Hard Wood on Construction Site, Works Branch, HKSAR Government.
- 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 and No.4/98A, Use of Public Fill in Reclamation and Earth Filling Projects, Works Bureau, HKSAR Government.
- Works Bureau Technical Circular No. 5/98, On-site sorting of Construction Waste on Demolition Site, Works Bureau, HKSAR Government.
- Waste Reduction Framework Plan, 1998 to 2007, Planning, Environment and Lands Bureau, Government Secretariat, 5 November 1998.



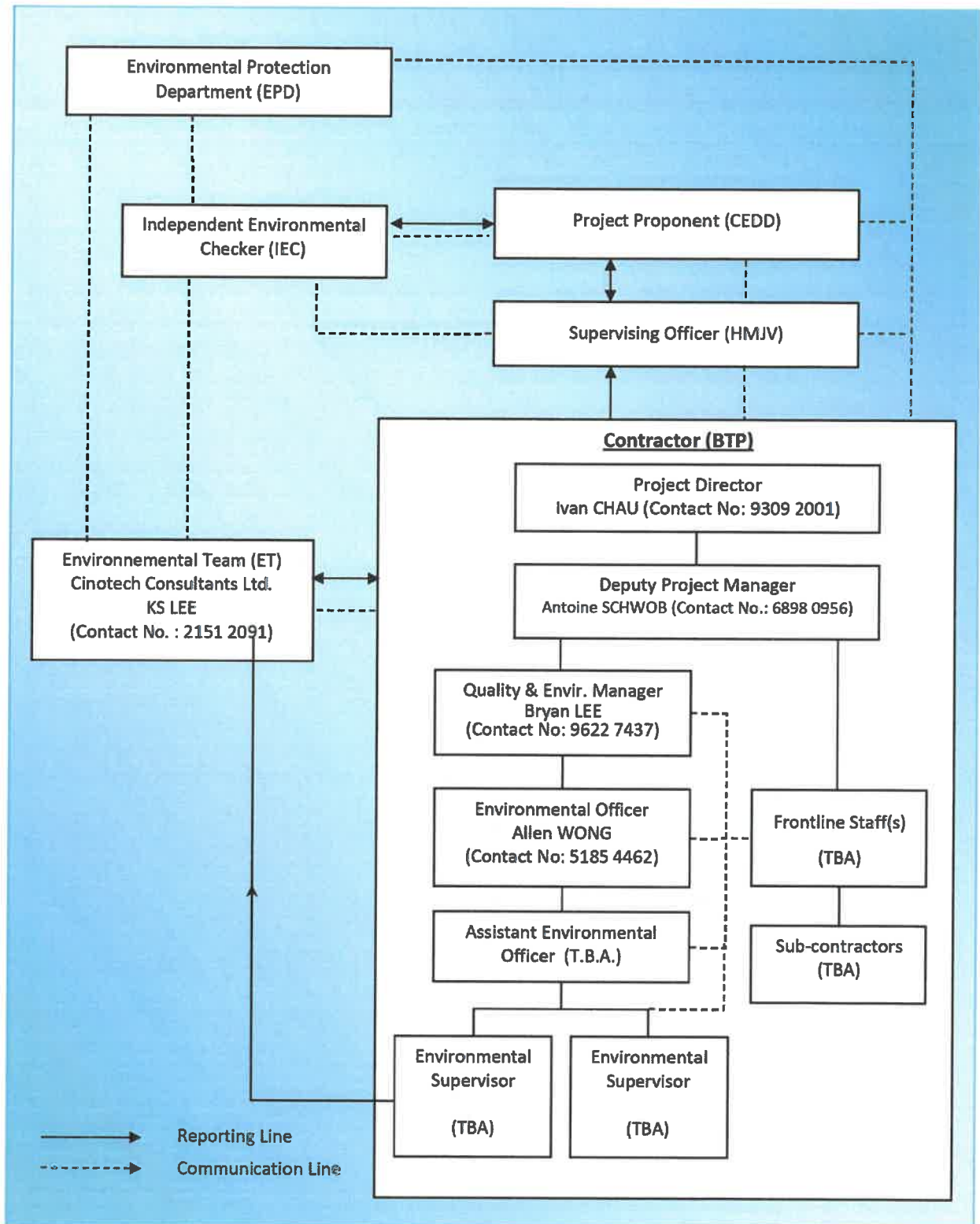
- Works Bureau Technical Circular No. 6/2002 and 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness, Works Bureau, HKSAR Government.
- Works Bureau Technical Circular No. 6/2010, Trip-ticket System for Disposal of Construction and Demolition Materials
- A Guide to the Registration of Chemical Waste Producers and Guide to the Chemical Waste Control Scheme.
- Project Administration Handbook for Civil Engineering Works.

## **2 SITE ORGANIZATION AND STAFF DUTIES**

### **2.1 Organizational Structure**

- 2.1.1 The organization structure for waste management onsite is outlined in **Figure 2.1**. This structure outlines the overall site management in relation to waste management and the associated environmental issues. Details on the roles and responsibilities of staff members responsible for the implementation of the WMP are outlined in the BTP organizational chart for waste management below:

Figure 2.1 Organization Structure







## 2.2 Roles and Responsibilities

### 2.2.1 Project Director

The Project Director (PD) is responsible for coordinating all environmental matters on site and reporting on these matters to the BTP. Approve (internally) the WMP and ensure adequate resources for the implementation of the WMP.

### 2.2.2 Deputy Project Director

The Deputy Project Director (DPD) is responsible for ensuring commitment to the WMP and assigning the necessary resources for its effective implementation.

### 2.2.3 Construction Manager(s)

Construction Manager (CM) reports to the PD and DPD, and has the responsibility to coordinate all environmental matters related to the WMP. The CM is also responsible for all site operations, management of environmental issues, staff supervision, control, coordination & planning, external liaison as well as implementing and monitoring corrective actions related to the WMP.

The CM, when necessary, will also carry out immediate corrective action to rectify any non-compliance of environmental requirements of the WMP, as well as handle any complaints that are received from the public regarding the WMP.

The CM will also assist the EO in overseeing the implementation and performance of the WMP. The CM would also assist with environmental duties onsite and ensure that works are executed in accordance with the WMP. The CM will arrange regular site inspections with the EO.

### 2.2.4 Environmental Officer

The EO will be appointed on site for the overall coordination, monitoring, oversight and implementation of the WMP for the duration of the contract. The EO directly reports to the PD and DPD. The responsibilities of the EO include, but are not limited to:

- Review of the Site Management Plan for Implementation of the TTS and ensure works are executed in accordance with the plan.
- Monitor onsite work to ensure compliance with the environmental requirements for the site.
- Assist the CM in handling any complaints that are received.
- Ensure that the required environmental monitoring is carried out, and that all environmental monitoring results are recorded.
- Carrying out waste management training.



#### 2.2.5 Senior Engineer/ Engineer (Frontline staff)

The Senior Engineer/ Engineer shall:

- Coordinate with the EO regarding the implementation of all appropriate environmental mitigation measures and waste management.
- Coordinate with the EO to make sure that all the applicable environmental licenses and permits are identified and allowed for in the program of work.

#### 2.2.6 Environmental Supervisor

The Environmental Supervisor (ES) is responsible for the implementation of the WMP with the assistance of the Foremen. The ES is also responsible for:

- Assisting the EO to rectify any non-conformances with the environmental requirements of this WMP that are identified onsite.
- Attend environmental meetings related to waste management when necessary.
- Carry out environmental site inspections with the EO when deficiencies in waste management are identified.
- Assist the EO with any environmental accidents, such as the release of chemicals.

#### 2.2.7 Foremen (Frontline staff)

The foremen are responsible for onsite supervision, the coordination of the works as well as the implementation of any corrective actions as directed by the CM/EO. The Foremen are also responsible for:

- Assisting in the daily implementation of the WMP including the sorting and segregation of construction waste in to separate stockpiles/staging areas and where possible the recycling (via recycling containers) or reusing materials.
- Ensuring that the trip-ticket system is followed and that all paperwork (e.g. CHIT / Disposal Delivery Form (DDF)) is signed, completed and collected.
- Ensuring that, where possible, the generation of waste is avoided or minimized.

### 2.3 **Training and Promotion**

- 2.3.1 Site-specific induction training cover environmental matters, including waste management shall be presented to all staff and workers employed for the Contract, whether in the employment of BTP or his sub-contractors or in connection with the Contract. The training will be delivered by the Environmental Officer, Environmental Supervisor or assigned person, as applicable as per construction programme. The



training content will cover subjects such as environmental management policy, waste management policy, project environmental organization structure, duties and responsibilities, waste control measures, disposal targets, in-house rules and regulations, mechanical cover requirement, disposal sites ...etc.

- 2.3.2 Apart from the induction training, toolbox talks shall be provided for workers on general site environmental nuisance abatement and waste management in addition to safety and health. Prior approval will be obtained from the SOR on the frequency and the contents of the toolbox trainings. If further required by the SOR, trainings organized by training institutes or organizations as considered appropriate will be arranged.
- 2.3.3 Method of promoting and maintaining the awareness on environmental aspects and its control measures and waste management amongst all persons on Site include:
- Display of the company's environmental policy, non-compliance statistics, posters and signs at prominent locations;
  - Talks and campaigns, and distribution of safety/environmental bulletins or newsletters drawing attention to the particular environmental issues; and
  - Procedures for recognition and commending those site personnel, teams or sub-contractors with good performance on environmental control measures and waste management.

### 3 SITE SPECIFIC WASTE MANAGEMENT

#### 3.1 Hierarchy of Site Waste Management

3.1.1 The key to successful waste management is undertaking proactive measures to reduce the amount of waste generated. Waste management options/programme will be exercised in accordance with the hierarchy outlined in **Table 3.1** below:

Table 3.1: Hierarchy/Programme of Waste Management

Waste Management Option/Programme	Required Actions
Avoidance / Reduction / Minimization	Avoid the generation of excessive waste by planning and scheduling material deliveries.  Minimize the amount of waste generated through careful planning and design, before commencing the contract.
Re-use	Where appropriate and practicable, construction materials such as timber formwork, metal, etc, and any spoil generated during excavation work should be re-used onsite.
Recovery and Recycling	Recyclable construction materials such as plastics and metal will be recovered, sorted and stored onsite in containers. The containers will be transported off site for recycling at an approved facility.  Regularly serviced, covered recycling containers will be provided for the use of the onsite workforce.
Treatment and Disposal	All waste removed from the site requiring treatment and/or disposal will be transported to an approved facility.

3.1.2 To achieve waste reduction, environmentally responsible purchasing would involve the introduction of practices that discourage unnecessary purchases and encourage the purchase of products or materials that can be found locally, that have reduced packaging or recyclable packaging, increased durability and materials with recycled content, such as, recycled paper, steel, concrete and other raw construction materials.



3.1.3 Waste minimization is best achieved through the use of careful planning, design and close supervision. It is expected that, following good waste management practices on site will result in a reduction of the amount waste being generated. To minimize the wastage of raw materials that are delivered to the site, good management, estimation and planning techniques will be required.

### **3.2 Specific Waste Management on Site**

3.2.1 For a better management of the spoil generated from the TBM tunnel excavation, all TBM excavated materials will be treated to produce byproducts which suitable for reuse on site or export to other project by Marine route.

3.2.2 The dewatered public fill byproducts are transported by means of covered conveyors to barging point adjacent to the STP.

3.2.3 Some material will be processed before export to other reclamation project (mixing with granular material).

3.2.4 Seek for any other alternative site or cross boundary disposal, subject to SO's approval.

3.2.5 Matching with other contractors for reuse, or other alternative disposal site after obtain Public Fill Committee's approval.

## 4 WASTE REDUCTION PROGRAMME

### 4.1 On-site sorting of C&D Materials

4.1.1 BTP will designate suitable areas onsite for the storage, sorting and segregation of construction waste. The areas that are designated by BTP will be clearly defined with appropriate signage and barriers (or similar) and allow for easy access by workers and vehicles. The layout plan of proposed temporary storage and sorting area for C&D materials is shown in Appendix B. As the project progresses, the designated areas will be reviewed depending upon construction program requirements. The areas designated by BTP will be sufficient for the amounts of construction waste that are anticipated to be generated during the course of the contract. **Table 4.1** below shows the actions that will be taken for each type of construction waste generated onsite.

**Table 4.1: Sorting of C&D Waste**

Type of C&D Material	Sources	Required Action	Responsible Party
Rock	Grade I to III	Re-use on site where possible or recycle off site	BTP
Excavated material	Shafts, TBM	Re-use on site where possible or dispose of at approved landfill facility	BTP/ Subcontractors
Concrete	Broken concrete, concrete residues	Sorted and segregated onsite, minimize wastage by accurate ordering, re-use on site where possible or recycle offsite	BTP/ Subcontractors
Metal	Rebar	Segregate and recycle offsite	BTP/ Subcontractors
Paper/ Cardboard Materials	Site office, packaging	Segregate and recycle offsite	BTP/ Subcontractors
Plastics	Food Waste, rebar caps, Safety Helmet	Use recycling containers for temporary storage and recycle offsite / Reuse / Replaced by other materials	BTP



Aluminium Cans	Food Waste	Use recycling containers for temporary storage and recycle offsite	BTP
Timber	Formwork and Falsework	Re-use on site if possible, other segregate and recycle off site	BTP/ Subcontractors
Chemical Waste	TBM, other works related to chemical usage	Store in approved containers and transport offsite for disposal at an approved facility	BTP/ Subcontractors

4.1.2 Reusable or recyclable materials such as hard rock, broken concrete, metallic waste, timber, paper as well as cardboard packaging will be separately sorted out and pre-identified on-site at different area, for easy collection of those materials by recyclers.

4.1.3 Arrangements with potential recycling contractors shall be made to facilitate that recyclable materials sorted from the Site are collected with reasonable care.

#### 4.2 Recyclable Materials

4.2.1 Control measures would be devised to ensure that the recyclable materials are delivered to a proper recycling outlet for processing, and to avoid such materials being considered as C&D materials for the purposes of the Contract. Trip ticket system is not applicable to recyclable materials. However, the invoice, receipt or disposal records will form parts of the comprehensive register as described in the previous section to ensure integrity of disposal records. The monthly quantities of the recyclable materials removed off site will be recorded in the waste flow table for monthly submission to the SOR.

4.2.2 C&D waste generated from construction activities will be basically on-site sorted to inert and non-inert. For the inert portion, it will be will be collected and stored separately from other non-inert materials to prevent cross-contamination. About the non-inert portion, recyclable materials such as plastics, aluminium cans and cardboard will be collected and stored separately for other non-recyclable materials.

4.2.3 Specific measures will be implemented to reduce the generation of waste materials, and thus minimize the amount of waste disposal to landfills. The measures will include:



- Sort all excavated materials and recover the inert portion of C&D materials, such as hard rock, soil and broken concrete, for reuse on the Site or, if cannot be used on the Site, disposal to designated outlets for reuse;
- recover all metallic waste for recycling;
- recover cardboard and paper packaging, and properly stockpile them in dry and covered condition to prevent cross contamination; and
- sort all demolition debris to recover reinforcement bars, mechanical and electrical fittings, hardware and all other fittings/ materials that have established recycling outlets.

### 4.3 Waste Reduction Targets

4.3.1 In order to determine whether the waste management procedures used by BTP are effective, the following specific targets will be implemented onsite in an effort to reduce the generation of waste materials, and thus minimize the amount of waste requiring disposal at landfill:

- All excavated material will be sorted on site to recover the inert portion of construction and demolition debris materials, such as hard rock, soil and broken concrete, for subsequent re-use on site or disposal to designated outlets.
- Recover and store all metallic waste (e.g. scrap metal) for subsequent collection by a recycling contractor and recycling at an approved facility.
- Recover all cardboard and/or paper packaging (for plant, equipment and materials) and store in covered stockpiles (to keep dry and prevent contamination) for subsequent collection and recycling at an approved facility, if possible.
- All chemical waste that is generated on site (e.g. servicing of plant) will be stored for collection and disposal at an approved disposal facility.
- All demolition debris will be sorted on site to recover broken concrete, reinforcement bars, mechanical and electrical fittings, hardware as well as other recyclable fittings for subsequent recycling at an approved facility.
- The use of timber formwork shall be avoided when practicable and alternatives such as steel formwork shall be considered and used to increase the potential for re-use. Timber hoarding shall not be Instead of wooden pallets for material delivery, the use of plastic re-usable pallets shall be encouraged by BTP with its discussions with suppliers. When timber is required for the works, it will be selected whenever practicable from managed sources.





#### **4.4 System for Proper Control of Using Timber in Temporary Works**

4.4.1 In order to control the quantity of using timber in temporary works, controlling system will be implemented:

- Use of timber in temporary works shall be reduced or minimized as far as practicable; for example, by the use of pre-cast concrete elements or steel formwork which will reduce the quantity of timber required for formwork. Timber pallets when delivered to site will be carefully handled so that they may be reused.
- The design of formwork shall maximize the use of standard panels so that high re-use levels can be achieved. Timber formwork shall be carefully dismantled to prevent damage. The timber shall be de-nailed, cleaned and stacked neatly for re-use. Wooden pallets for material delivery may be returned to the supplier for re-use.
- Review construction method statements to estimate and control of use of timber, and use of alternative materials to place timber for temporary works.

#### **4.5 Good Site Practices**

4.5.1 BTP will follow some good site practices to reduce the adverse waste issues such as:

- cleaning and maintenance for drainage systems, sumps and oil interceptors shall be carried out once per week or if necessary;
- regular collection of waste at disposal points, etc.

#### **4.6 Mitigation Measures in EIA**

4.6.1 Section 5.2 of the Tseung Kwan O – Lam Tin Tunnel and Associated Works (TKO-LTT) EM&A Manual (AEIAR-173/2013) gives recommendations on mitigation measures of waste management. The recommendations were extracted to form an implementation schedule particularly for waste management during construction phase and the schedule is shown in Appendix C.



## 5 WASTE DISPOSAL MANAGEMENT AND PROCEDURE

### 5.1 General

- 5.1.1 The waste that is generated during the construction process will be disposed to designated disposal facilities. Monthly summaries of the amount of waste material disposed offsite will be provided to the Supervising Officer's Representative (SOR) in the form of a Waste Flow Table (WFT). The summaries will indicate the estimated quantities of different types of waste removed offsite and the corresponding disposal ground in the WFT.
- 5.1.2 The quantities of C&D material disposed of will be recorded under the barcode TTS by using the CHIT / DDF (for disposal of C&D Materials at disposal grounds (Other than Prescribed Facilities) as designated in the Contract, or alternative disposal grounds proposed by the Contractor and approved by the SOR. In addition, a completed "CHIT" will also be presented to the receiving facility as part of the system for the disposal charging scheme. Waste transaction records could be obtained either from the waste disposal facilities directly, or retrieved from the EPD website or bill statement.
- 5.1.3 The list of work processes or activities that will generate C&D waste during the works is shown in Appendix D.

### 5.2 Waste Acceptance Criteria for Government Disposal Facilities

- 5.2.1 Pursuant to AEIAR-174/2013 EM&A Manual Section 9.2.1.3, the recommended waste disposal sites are listed in Table 5.1 below:

Table 5.1 Recommended Waste Disposal Sites

Type of Waste	Disposal Site
C&D materials	Tseung Kwan O Area 137 (TKO 137) Fill Bank
C&D waste (plastics, glass, wood, including cleared vegetation etc.)	SENT Landfill
Chemical waste (as defined under Schedule 1 of the Waste Disposal (Chemical Waste) Regulation)	Chemical Waste Treatment Centre in Tsing Yi or other approved facilities
General refuse	SENT Landfill

- 5.2.2 According to TKO-LTT AEIAR-173/2013 EIA Report Section 8.5.6 & 8.5.8, there is no specific recommended waste disposal sites identified. However, as listed in the Manual, the inert C&D materials generated from Cha Kwo Ling Tunnel would be recycled as far as practicable at any quarry in operation during construction stage. Surplus rock (Grade II or above Granite) would be recycled in Lam Tei Quarry subject to

the operation period of the Quarry. The last resort will be disposed to TKO137 Fill Bank as mentioned in section 5.2.1. Non-inert C&D materials is proposed to be disposed in public landfills.

5.2.3 BTP will comply with the acceptance criteria laid down by the operators of the corresponding fill bank(s) and landfill(s), as outlined in Section 5.3 and 5.4 below.

### **5.3 Acceptance Criteria for Fill Banks (Tseung Kwan O 137 Fill Bank)**

5.3.1 The truck drivers should bear a duly signed CHIT / a duly completed, signed and stamped DDF (for approved alternative disposal grounds). The dump truck should also have a valid Dumping Licence issued by CEDD. Dump trucks without valid Dumping Licences will be rejected.

5.3.2 The inert C&D materials to be delivered to the fill bank(s) should be in accordance with the conditions stipulated in the Dumping Licence. The C&D materials to be disposed should consist entirely of inert construction waste (i.e. 100% inert construction waste).

5.3.3 Recyclable materials such as metal, paper, plastics and milled bituminous materials etc., which have been sorted on the site for the purposes of recycling, shall not be considered as C&D materials and should be delivered to a proper recycling outlet for processing. Recycling contractors will be arranged to collect the recyclable materials.

### **5.4 Acceptance Criteria for SENT Landfill**

5.4.1 The truck drivers should bear a duly signed CHIT. The dump truck should also have a valid Dumping License issued by CEDD. Dump trucks without valid Dumping Licenses will be rejected.

5.4.2 The non-inert C&D waste to be delivered to the landfills should be in accordance with the conditions stipulated in the Dumping License.

5.4.3 Construction waste containing not more than 50% by weight of inert C&D waste (Gazette Notice G.N. 4274 published on 16 June 2008).



5.4.4 For a load of C&D waste not consisting entirely of bamboo, plywood or timber delivered by a vehicle, the weight of the waste divided by the permitted gross vehicle weight of the vehicle must not be greater than 0.25 for goods vehicle with demountable skip and 0.2 for other types of vehicle (Gazette Notice G.N. 4274 published on 16 June 2008). The depth of waste loaded on the goods vehicle or any other vehicle must be greater than 1 meter for goods vehicle with demountable skip and 1.5 meters for any other types of vehicle.

5.4.5 Mixed C&D materials should be sorted at source to reduce the inert content as far as practicable to meet the above criteria before they are delivered to landfills.

5.4.6 C&D waste delivered for landfill disposal should contain no free water and the liquid content will not exceed 70% by weight.

#### **5.5 Procedures of the Trip Ticket System (TTS)**

5.5.1 Under the Waste Disposal (Charges for Disposal of Construction Waste) Regulation, BTP applied for a vehicle billing account for disposal of construction waste on 9 December 2019. The account number is 7036016.

5.5.2 We will implement a TTS to track the disposal of C&D materials. Under the TTS, each truck carrying C&D materials leaving the Site for a Government disposal facility will be accompanied by a duly completed and stamped CHIT. The C&D materials must be disposed of at the disposal grounds as stipulated in the DDF. The TTS will be executed according to the following procedures:

5.5.3 The Foremen will arrange the C&D waste to be segregated on site and also check the total actual amount of cumulated C&D waste after the completion of the particular works in the working area.

5.5.4 The C&D waste will be sorted and stored separately into different storage areas.

5.5.5 Non-inert C&D waste will be stored in waste receptacles at a temporary holding area. Inert C&D materials will be stored on a temporary holding area enclosed by water barriers or rigid concrete barriers.

5.5.6 For each load on truck of C&D material leaving the working area to the designated fill banks / landfills, the truck driver must bear a duly completed,



signed and stamped CHIT. A Notification to Truck Driver (attached in Appendix E) will be given to truck drivers to remind them the proper disposal procedures.

- 5.5.7 The truck will proceed to the designated disposal facility as stipulated in the CHIT. The truck driver will present the CHIT to the reception facility operator. If the C&D waste accords with the acceptance criteria, disposal of the C&D waste will be permitted and the facility operator will give the truck driver a transaction receipt and stamp the CHIT.
- 5.5.8 The truck driver will present the CHIT at the weighbridge. If the vehicle load is accepted, the CHIT is deemed to be used and the weight would be recorded on the "Transaction Record Slip".
- 5.5.9 If the truck driver is instructed by the reception facility operator to go to the sorting facility, the driver will need return back to the site and report to the Foremen. No driver is allowed to go to sorting facility without Foremen permission or instruction.
- 5.5.10 The truck driver will then return the transaction receipt and the stamped CHIT to BTP as soon as possible. All CHITs are to be returned to the EO or ES.
- 5.5.11 BTP will maintain a daily record summary (DRS) of disposal of C&D material from the Site including details of the C&D waste, the truck number, departure time, etc. This record will be checked against the SOR records as soon as possible and the SOR will be notified immediately in case any discrepancy is noted.
- 5.5.12 Part 1 of the DRS will be completed in duplicate and a copy should be kept by the SOR.
- 5.5.13 For disposal at government disposal facilities, BTP will check the information recorded in the DRS against the disposal records on the EPD's website (see below).
- <http://www.epd.gov.hk/epd/misc/cdm/trip.html>
- 5.5.14 Part 2 of the DRS will be completed and submit to the SOR within 1 working day after the records are posted at the EPD web-site.



5.5.15 Where an irregularity is observed or where requested by the SOR under special circumstances (e.g. a CHIT has been issued but there is no disposal record at the disposal ground), BTP will submit to the SOR within 5 working days after the recorded date of disposal the supporting evidence such as duly stamped CHIT and/or the Transaction Record Slip (where relevant) to confirm proper completion of the delivery trips in question, or within 2 working days after the SOR has requested for such evidence, whichever is later. A fax copy of the CHIT or Transaction Record Slip is acceptable, unless otherwise directed by the SOR.

5.5.16 A Trip Ticket Management System (either via land or marine transportation) and relevant transportation arrangement shall be developed and agreed with the alternative disposal project(s) and get approval from SOR if alternative disposal ground is proposed.

#### **5.6 Measures to be Implemented during Transportation of Wastes to Avoid Leakage of Wastes onto Public Areas**

5.6.1 All trucks to transport waste from the site will be in good working condition and will be equipped with mechanical covers (or similar) to prevent leakage of waste onto public areas. In addition to the cover, to further minimize the leaking of waste from the trucks, trucks should not be filled higher than the trail board.

5.6.2 Wastes collected on all the wheels and bodies of trucks will be washed off by wheel washing facilities before leaving the construction site. BTP will provide wheel washing facilities on site at the site entrance.

5.6.3 Pursuant to Employer's Requirements Part 8.8.5 (g) (i), all dump trucks engaged on site are to be equipped with Global Positioning System (GPS) or equivalent automatic system for real time tracking and monitoring for their travel routings and parking locations to prohibit illegal dumping and landfilling of C&D materials.

#### **5.7 Disposal of C&D Materials to Alternate Disposal Facilities**

5.7.1 Where BTP has identified a project that can serve as an alternative disposal facility, BTP will provide a detailed description of the alternative disposal ground, including location, lot number (where appropriate) and location plan(s) to the SOR to request for his written approval to dispose of waste at the proposed location.

- 5.7.2 Where the alternative disposal facility is a private construction project, BTP will submit a letter from the Authorized Person of the development (as defined under the Building Ordinance) to confirm that:
- The use of C&D materials in the development is acceptable.
  - The use of land formed by C&D materials is in conformity with the statutory town plan / lease conditions.
  - The SOR is allowed to enter the alternative facility to conduct an inspection when necessary.
  - The estimated quantity and type of C&D materials to be used in the construction works and the approximate delivery program, together with the name, post and specimen signature of the competent person to sign the internal trip ticket.

5.7.3 Where the alternative disposal facility is a private facility but not a construction site, BTP will submit a letter from the relevant authorities, such as the Lands Department and Planning Department, to confirm the suitability of the alternative disposal facility to receive the proposed amount of C&D materials for use, and a written consent from the landowner.

5.7.4 Where the alternative disposal facility is a government project, BTP will submit written consent from the project office of the alternative disposal facility to use the C&D materials generated from the Site, and to confirm the estimated quantity and type of C&D materials required and the approximate delivery programme.

5.7.5 A system for transmitting disposal records from the alternative disposal ground will be submitted to the SOR for approval before disposal to the alternative ground starts.

## 5.8 Chemical Wastes / Hazardous Waste Handling and Disposal

5.8.1 BTP has been registered as Chemical Waste Producer. Chemical waste that is generated, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, will be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes as follows:

### Packaging

5.8.2 Chemical waste will be packed and held in containers of suitable design and construction so as to prevent leakage, spillage or escape of the contents under normal conditions of handling, storage and transport.

5.8.3 Containers used for the storage of chemical wastes 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 specifications have been approved by the EPD.
- Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.

Labelling

5.8.4 Every container of chemical waste will bear an appropriate label which with details of the chemical waste. The waste producer will ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste.

Storage

5.8.5 The storage area will be specially constructed and bunded, and located close to the source of waste generation. The storage area for chemical wastes will:

- Be clearly labelled and used solely for the storage of chemical waste.
- Be enclosed on at least three (3) sides.
- Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest.
- Have adequate ventilation.
- Be covered to prevent rainfall entering (water collected with the bund must be tested and disposed of as chemical waste).
- Be arranged so that incompatible materials are adequately separated.
- Before reaching 80% capacity of the storage container, licensed waste collectors will be contracted to remove the chemical waste.

Transportation and Disposal

5.8.6 After the chemical wastes have been packed, labelled, and stored, the chemical wastes will be transported by licensed waste collectors and disposed of at Chemical Waste Treatment Facility in Tsing Yi or other approved facilities.



## **5.9 General Refuse**

5.9.1 Measures to be implemented to encourage general waste avoidance / minimization include:

- Reducing the number of photocopies to a minimum and copying on both sides of paper for internal documents and external documents where appropriate.
- Preventing over-ordering of office equipment and consumables.
- Procuring energy efficient office equipment and consumables.
- Deploying and servicing recycling containers on site to facilitate collection of recyclables (e.g. aluminum cans, plastic bottles).
- Deploying containers with covers onsite to facilitate the collection of non-recyclables for disposal at landfills.

## **5.10 Sewage**

5.10.1 Sewage waste will be generated from amenity facilities used by the construction workforce and site office's sanitary facilities. Such sewage waste will be treated by a sewage treatment system to minimize the volume of waste. The treated sewage sludge will be pumped out by suction trucks and disposed off site.

5.10.2 Night soil from chemical toilets will also be generated. The sludge needs to be properly managed to minimise odour and potential health risks to the workforce by attracting pests and other disease vectors.

5.10.3 The peak number of construction workers anticipated to on site by BTP is to be about 300 staffs. As the workers will be scattered within the construction site, the most cost-effective solution will be to provide adequate number of portable toilets within the site to ensure that sewage from site staff is properly collected. BTP will ensure adequate numbers of portable toilets for the workforce and ensure no adverse water impacts by contracting with licensed contractors to maintain the facilities.

## **5.11 Handling of Recyclables**

5.11.1 Before starting the transportation of recyclable materials off site to recycling facilities, BTP will meet with recycling contractors to establish a suitable system for collecting recyclable materials with care.



**5.12 Estimate Quantities of C&D Material/Waste**

5.12.1 The following types of waste will be generated during the construction of the Contract.

- General Waste.
- Non-inert C&D materials.
- Inert C&D materials / waste.
- Chemical waste.
- Recyclable waste.

5.12.2 The estimated amount of waste to be generated from the whole Contract is listed in Table 5.2 below:

Table 5.2: Estimated Amount of Waste to be Generated During the Contract

Material	Generated from Project (m <sup>3</sup> )	Re-used/ Recycled onsite or on other Projects (m <sup>3</sup> )	Disposal (m <sup>3</sup> )	Proposed Disposal Outlet
General Waste (include unclean packaging paper and plastics)	30,000	3,000	27,000	SENT Landfill
Non- Inert C&D Materials (such as timber, tree)	25,000	0	25,000	SENT Landfill
Inert C&D Materials/ Waste	1,200,000	1,025,000	175,000	Alternative Disposal Ground (Lam Tei Quarry)/ Concurrent Projects/ TKO Area 137 Fill Bank
Chemical waste	12,000 (L)	0	12,000 (L)	To be handled by Registered Contractor on the approved list



Recyclable waste (such as paper and plastics)	5,000	0	0	To be handled by Recycler
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5.12.3 For Drill & Blast Tunnel at Cha Kwo Ling Section, around 96,000 m<sup>3</sup> of inert materials will be generated. Those surplus rock (Grade II or above Granite) would be recycled in Lam Tei Quarry subject to the operation period of the Quarry.

5.12.4 Control measures would be devised to ensure that the recyclable materials are delivered to a proper recycling outlet for processing, and to avoid such materials being considered as C&D materials for the purposes of the Contract.

5.12.5 All recyclable material that is generated during the course of the Contract will be collected by registered contractors and transported to an approved facility.

5.12.6 Details of these contractors were listed in the website of EPD as waste collectors and recyclers, the information can be search via the hyperlinks at:

- [http://www.epd.gov.hk/epd/english/environmentinhk/waste/guide\\_ref/guide\\_ref\\_dwc.html](http://www.epd.gov.hk/epd/english/environmentinhk/waste/guide_ref/guide_ref_dwc.html)

5.12.7 It is aimed to maximize the reuse of C&D waste in suitable facilities or concurrent projects in Hong Kong. Any opportunities to minimize the transportation distance so as to minimize the related environmental impact are explored.



## 6 DISPOSAL PROGRAM

- 6.1.1 The applicable waste disposal requirements are listed in Section 1 of this WMP.
- 6.1.2 Excavated materials are mainly from the construction processes of Launching Shaft, Cut-and-Cover Tunnel, At-grade Road, Depressed Road, Ventilation Buildings, Drill and Blast Tunnel, and also from Tunnel Boring Machine (TBM). Disposal Programme will be arranged according to different stage of works.
- 6.1.3 Monthly summaries of the amount of C&D material disposed of offsite will be provided to the SOR. The summaries will indicate the estimated quantities of C&D material removed, the types of C&D materials removed and the corresponding disposal ground in the WFT.
- 6.1.4 With reference to the PS clause 25.25(7), alternative disposal grounds for inert C&D material could be proposed for the agreement of the SOR, Fill Management Division of CEDD, and other relevant Government departments. In support of the request for approval, the following information will be provided:
- A detailed description of the alternative disposal ground, including location, lot number (where appropriate), location plan and photographs of the proposed alternative disposal grounds showing the surrounding environment and land use;
  - Where the alternative disposal ground is a private construction site, a letter from each of the relevant authorities to comment on suitability of the site under their respective purview, and a letter from the Authorized Person of the development to confirm:
    - The C&D materials for use in the development is acceptable;
    - The land/pond filling in the proposed alternative disposal ground and the use of land so formed by the C&D materials are in conformity with the statutory town plan/ lease conditions; and
    - The SOR staff are allowed to enter the alternative ground to conduct inspections where necessary;
  - Where the alternative disposal ground is a private recycling facility, it is on the recyclers' list for C&D materials recognized by EPD, as well as a letter from the operator to confirm the SOR. to enter the recycling facility to conduct inspections where necessary;
  - Where the alternative disposal ground is a construction site of Government, Hong Kong Housing Authority or Mass Transit Railway Corporation, a written consent from

the project office of the alternative disposal ground to use the C&D materials generated from the Site;

- Where the alternative disposal ground is a government contract quarry, a written consent from the Mines Division of Civil Engineering and Development Department to import the C&D materials generated from the Site;
- The estimated quantity and type of C&D materials to be used/processed in the alternative disposal ground and the approximate delivery programme, together with the name, post and specimen signature of the competent person to sign disposal ticket; and
- A system for transmitting disposal records from the alternative disposal ground to the SOR.

6.1.5 The potential disposal grounds provide alternative options to reuse further amount of rock in an environmentally friendly way.

6.1.6 The locations of the potential disposal grounds within Hong Kong are similar to or located in a shorter distance to our Project site. The environmental impact arising from adopting the potential disposal grounds are no more than those arising from disposing the rock in accordance with the recommendations stated in the approved Environmental Impact Assessment Report.



## **7 NOTIFICATION TO TRUCK DRIVERS**

7.1.1 BTP will contact all transportation companies who are contracted by BTP, or its subcontractors, for the removal of C&D materials from the Site and highlight the following parts of the WMP:

- Each truck transporting C&D materials from the Site to a disposal facility must carry a duly completed, signed and stamped DDF, irrespective of the location and nature of the disposal facility.
- The C&D materials must be disposed of at the disposal ground as stipulated in the CHIT.
- The improper disposal of C&D materials, as outlined by the Public Fill Committee, may result in the revoking of the transportation company Dumping License.
- Truck drivers must bear a valid Dumping License that has been issued by the CEDD.
- All Trucks and Vessels must be equipped with GPS.

7.1.2 A sample of notification to truck drivers is attached in Appendix E. The Flow Chart of the TTS is attached in Appendix F.



## **8 WASTE MANAGEMENT RECORDS**

### **8.1 General**

8.1.1 The CHIT will be used for each and every vehicle that transports C&D material off site to a disposal facility.

8.1.2 Prior to the vehicle leaving the site, the BTP's representative will input the serial number, date, time of departure, vehicle licence plate number, designated public filling facility / landfill, and any other information as required in Part 1 onto the Daily Record Summary (DRS) for Disposal of Construction and Demolition (C&D) Materials from Site while dispatching the CHIT to dump truck driver. The SOR will sign DRS when Part 2 of the DRS is completed by BTP after the disposal. The CHIT will be carried on board the vehicle by the driver at all times, for the duration of the trip.

8.1.3 A register of the CHIT's issued will be maintained by BTP in the project environmental filing system, and will be made available for inspection by the SOR upon request. The following records will be kept to enable monitoring of the CHIT's that have been issued: -

- Completed Daily Record Summary (DRS)
- Waste Flow Table (WFT)
- A sample of the DRS and the WFT is provided in Appendix G and H of this WMP.

### **8.2 Waste Flow Table**

8.2.1 BTP will maintain a record of the quantities of C&D materials that are generated each month using the monthly summary WFT. The BTP's EO will complete and submit the monthly summary WFT (attached in the monthly Environmental Report) to the ER by no later than the fifteenth (15<sup>th</sup>) day of the following month, or if this day is a general holiday, the day following the General Holiday, or a later date as agreed to by the SOR.

8.2.2 These summaries shall also be made available to the ETL and the IEC.

8.2.3 Specific trip tickets and records for the internal transfer of C&D materials will also be kept for monitoring and shall be made available to the SOR upon request.



8.2.4 For recyclable materials, BTP's Representative will record the quantities of recyclable materials before removal off the Site via recycling contractors, and also include the details in the WFT for submission to the SOR.

### 8.3 Waste Flow Verification

8.3.1 In order to ensure the proper disposal of C&D materials that are generated during the course of the contract, the following enhancement measure to improve the TTS recording system will be utilised:

- A video recording system as stipulated on CS. Section 25.25 (10) (g) will be installed onsite by BTP and disposal records shall be checked against the survey record. The video recording system shall also be used to monitor the vehicular exit / entrance of the site.



## 9 WASTE MONITORING AND ACTION PLAN

9.1.1 The aims and objectives of the waste management audit program are:

- To ensure that waste generated by the works is handled, stored, collected, transported and disposed of in accordance with the applicable environmental guidelines and regulations.
- To ensure that the handling, storage, collection and disposal of waste arising from the demolition works complies with the relevant requirements under the WDO and its regulations, and this WMP.
- To encourage the reuse and recycling of materials.

9.1.2 The EO, with assistance from the PD or DPD, will conduct audits of the waste management practices during the weekly environmental site inspection to evaluate the overall implementation of the WMP, and to ensure that the appropriate control measures are properly implemented. The results of the waste management audits will be reported in the monthly EM&A reports. The Environmental Mitigation Implementation Schedule (EMIS) of the TKO-LTT EM&A Manual (AEIAR-173/2013) is given in Appendix C.

9.1.3 In the event of any non-compliance observations or complaints against the provisions of this WMP, appropriate actions will be taken according to the particular event. An Action Plan for non-compliance and complaints is shown in the following tables:

**Table 9.1: Event Action Plan for Non-compliance**

Step	Day	Action	Construction Team	Env. Officer
1	1	A non-compliance record will be created within one (1) working day of making the observation during a site audit. The EO will send a Non-Compliance Report (NCR) to Construction Team. The NCR would include details of the observation/s, the time and location of the observation/s and the reason/s for the non-compliance.		X
2	2	The Construction Team will propose	X	-



		suitable corrective action/s to mitigate the non-compliance observed within Three (3) working day of receipt of the NC from the ET.		
3	3	The EO will review BTP's proposed corrective action/s and make additional recommendations as necessary.	-	X
4	-	The Construction Team will implement the proposed corrective action/s once they have been agreed to by all parties.	X	-
5	-	The implementation of the corrective action/s will be checked at the next site audit. Close the NC if the implementation of the corrective action/s is satisfactory.	X	X
6	-	Construction Team will propose preventive action/s within three (3) working days of the closure of the NC.	X	-
Note: "x" denotes action party comments on the NC where applicable.				

**Table 9.2: Event Action Plan for Complaint**

Step	Day	Action	Construction Team	EO
1	1	The EO will investigate validity of complaint, and assess whether the complaint is due to an onsite activity. If the complaint is valid and due to site activity, the EO will log details of the complaint into a Complaint Register (CR).	-	X
2	2	Construction Team will assess the CR and propose suitable mitigation measures.	X	X



3	3	The EO will review the mitigation measures and agree or propose further mitigation measures if required.	-	X
4	-	Construction Team will implement the proposed mitigation measures once they have been agreed to by all parties.	X	-
5	-	The EO will check the implementation of the mitigation measures during the next site audit. The EO will close out the compliant, if the implementation of the mitigation measures is satisfactory.	X	X
6	-	Construction Team will propose suitable prevention measures within three (3) working days after closure of the compliant.	X	-
Note: "x" denotes action party comments on the NC where applicable.				

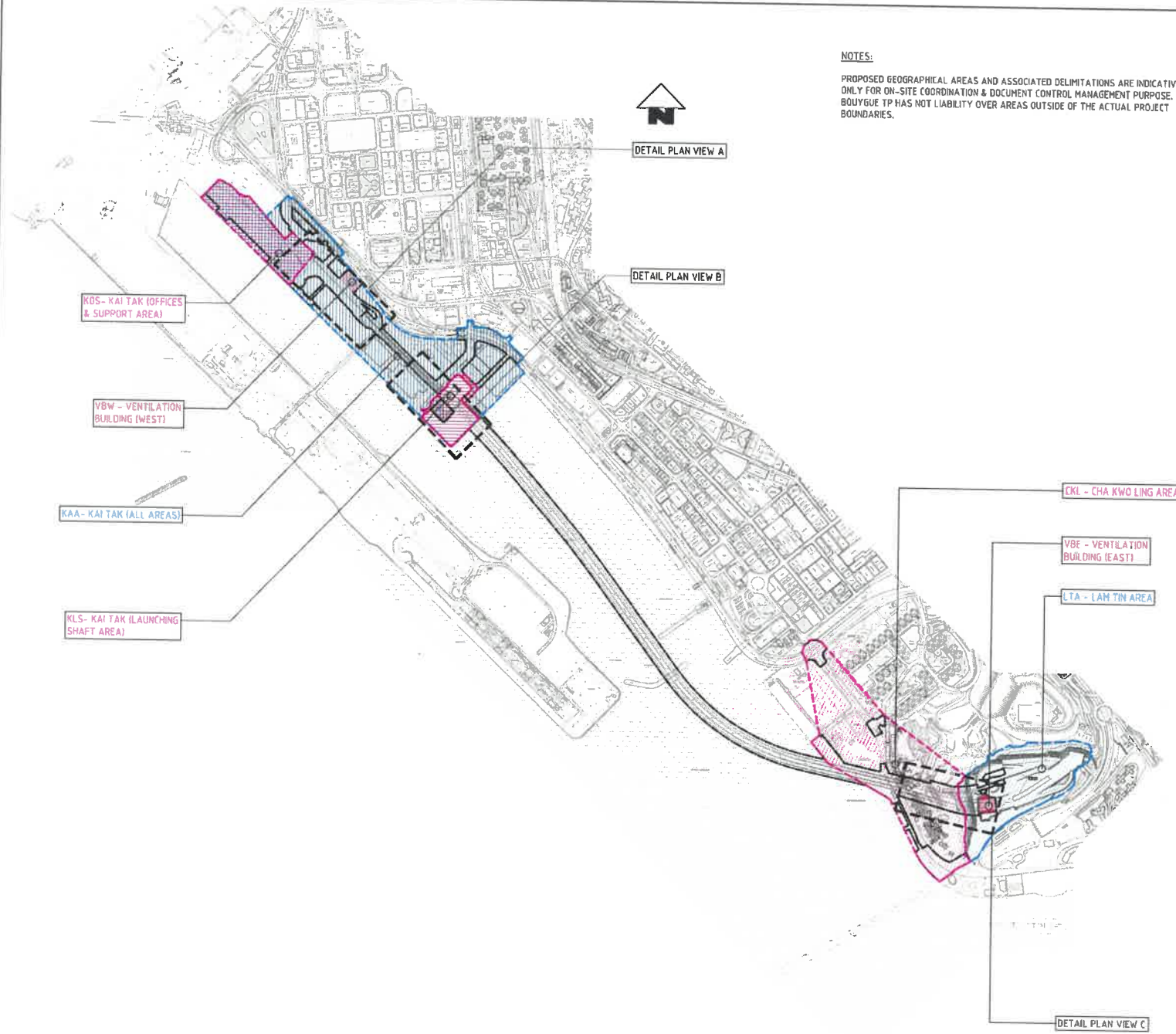


**Contract No. ED/2018/04  
Trunk Road T2 and Infrastructure Works  
for Developments at the Former South Apron**

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## **Appendix A Site Location Plan**

**NOTES:**  
 PROPOSED GEOGRAPHICAL AREAS AND ASSOCIATED DELIMITATIONS ARE INDICATIVE ONLY FOR ON-SITE COORDINATION & DOCUMENT CONTROL MANAGEMENT PURPOSE. BOUYGUE TP HAS NOT LIABILITY OVER AREAS OUTSIDE OF THE ACTUAL PROJECT BOUNDARIES.



Contract No. ED/2018/04  
 Trunk Road T2 and Infrastructure Works  
 for Developments at the Former South Apron

**PROJECT WIDE – GENERAL  
 T2 GEOGRAPHICAL AREA DEFINITION  
 SURFACE AREAS**

**Client:**  
 土木工程發展署  
 Civil Engineering and  
 Development Department  
 土木工程發展署  
 香港特別行政區

**Supervising Officer:**  


**Main Contractor:**  


**Contractor's Designer:**  


**Client Revision A Change Log**

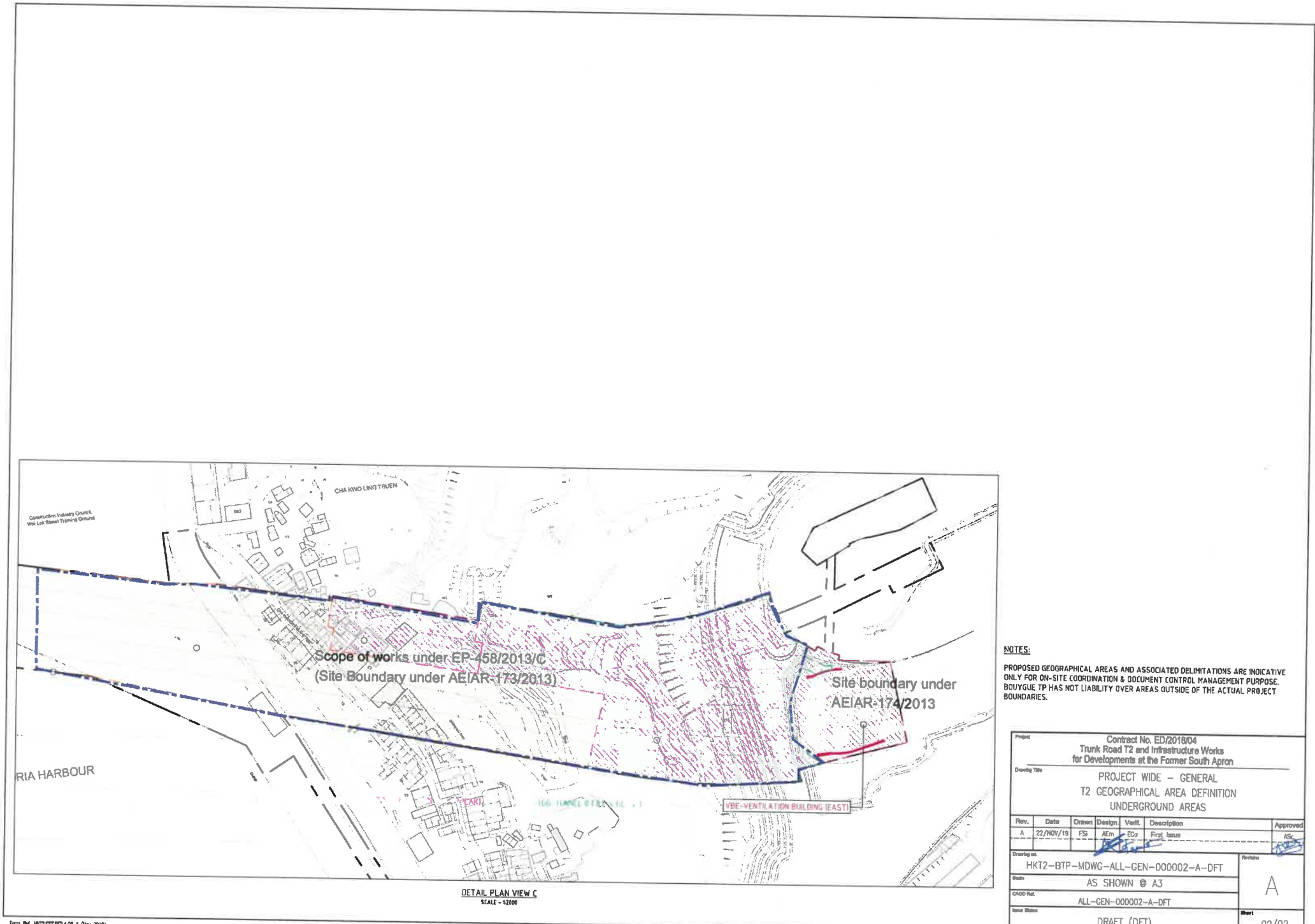
Rev.	Date	Drawn	Design.	Verif.	Description	Approved
01					First issue	
02					First issue	

Supervising Officer's Name: \_\_\_\_\_  
 Date: \_\_\_\_\_

Rev.	Date	Drawn	Design.	Verif.	Description	Approved
A	22/NOV/18	FSI	AEm ECo	ASc	First issue	ASc

Drawing No. HKT2-BTP-MDWG-ALL-GEN-000002-A-DFT  
 Scale: 1:15000 @ A3  
 CADD Ref: ALL-GEN-000002-A-DFT  
 Issue Status: DRAFT (DFT)

Revision: A  
 Sheet: 01/02



DETAIL PLAN VIEW C  
SCALE - 1:2000

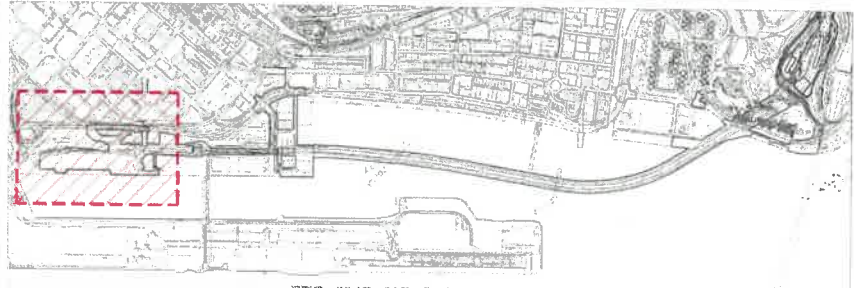
**NOTES:**

PROPOSED GEOGRAPHICAL AREAS AND ASSOCIATED DELIMITATIONS ARE INDICATIVE ONLY FOR ON-SITE COORDINATION & DOCUMENT CONTROL MANAGEMENT PURPOSE. BOUYGUE TP HAS NOT LIABILITY OVER AREAS OUTSIDE OF THE ACTUAL PROJECT BOUNDARIES.

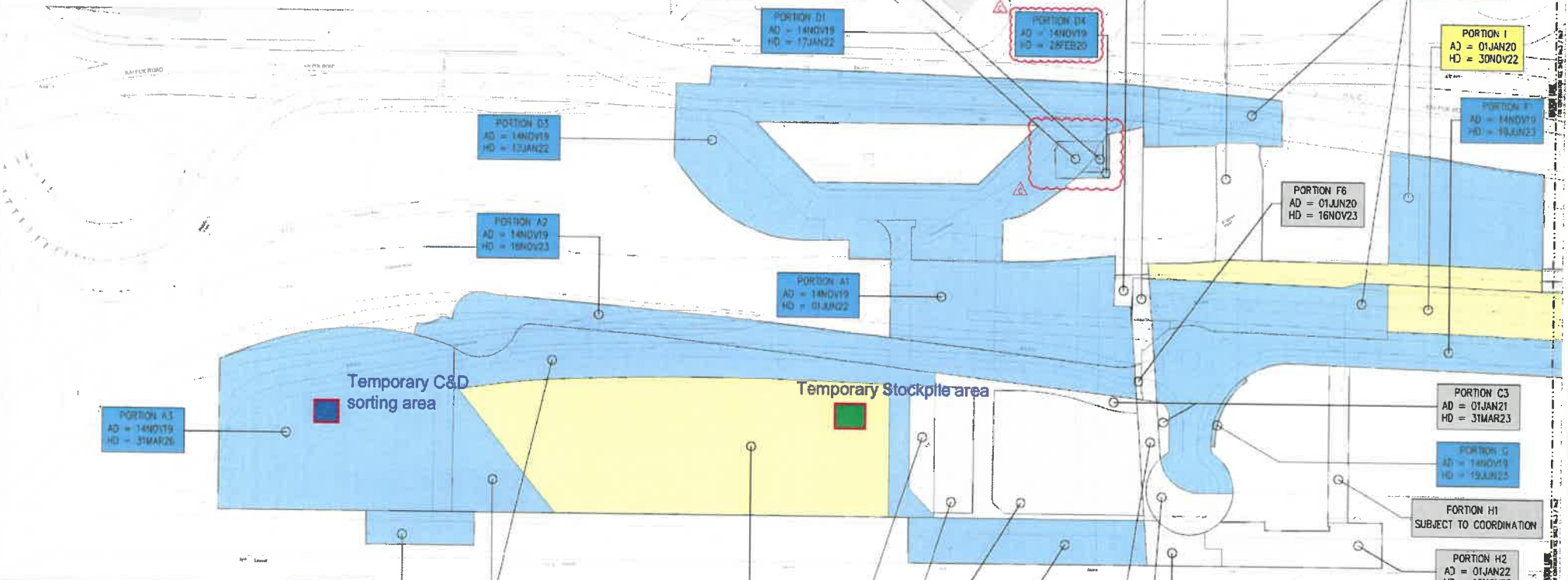
Project							Contract No. ED/2018/04	
Drawing Title							Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron	
Drawing No.							PROJECT WIDE - GENERAL T2 GEOGRAPHICAL AREA DEFINITION UNDERGROUND AREAS	
Rev.	Date	Drawn	Design	Verif.	Description	Approved		
A	22/NOV/19	FSi	AEm	ECe	First Issue	ASc		
Drawing no.							HKT2-BTP-MDWG-ALL-GEN-000002-A-DFT	
Scale							AS SHOWN @ A3	
Issue Status							ALL-GEN-000002-A-DFT	
Issue Status							DRAFT (DFT)	
Sheet							A 02/02	



**Appendix B**  
**Layout Plan for Temporary Storage of C&D**  
**Materials**



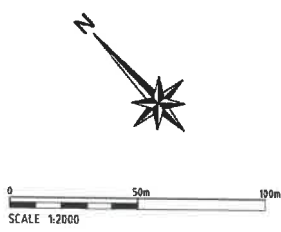
KEY PLAN - HKT2 OVERALL PROJECT  
SCALE - 1:25000



- LEGEND**
- AD == ACCESS DATE
  - HD == HANDOVER DATE
  - Blue box - DAY 1 ACCESS - 14/NOV/2019 (30/SEP/2019)
  - Yellow box - JANUARY 2020
  - Red box - MARCH & APRIL 2020
  - White box - AFTER APRIL 2020

**NOTES**

PROJECT BOUNDARY & SITE PORTIONS AS PER DRAWINGS Nos EB000560/POS/7001 to EB/000560/POS/7007 FROM ADDENDUM No. 5 - VOL7 PART 1 OF THE TENDER DOCUMENTS.



Project Contract No. ED/2018/04						
Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron						
Drawing Title PROJECT WIDE - GENERAL						
HKT2 SITE PORTIONS - ACCESS & H/O DATES KAI TAK (OFFICE & SUPPORT AREA)						
Rev.	Date	Drawn	Design	Verif.	Description	Approved
C	14/JAN/20	ASm	AEh	Eda	F3 dates revised & portion D4 added	ASc
Drawing no. HKT2-BTP-MDWG-ALL-GEN-000001-C-IFA						Revision
Scale 1:2000 @ A3						C
CADD no. ALL-GEN-000001-C-IFA						Sheet
Issue Status ISSUE FOR APPROVAL (IFA)						02/05





**Contract No. ED/2018/04  
Trunk Road T2 and Infrastructure Works  
for Developments at the Former South Apron**

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# **Appendix C**

## **Environmental Mitigation Implementation Schedule (EMIS)**

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
<b>Waste Management</b>						
<b>Construction Phase</b>						
S8.6.3	<b><i>Good Site Practices and Waste Reduction Measures</i></b> <ul style="list-style-type: none"> <li>Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and</li> </ul>	To reduce waste management impacts	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354)  Land

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	effective disposal to an appropriate facility, of all wastes generated at the site; <ul style="list-style-type: none"> <li>• Training of site personnel in site cleanliness, proper waste management and chemical handling procedures;</li> <li>• Provision of sufficient waste disposal points and regular collection of waste;</li> <li>• Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and</li> <li>• Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.</li> </ul>					(Miscellaneous Provisions) Ordinance (Cap. 28)
S8.6.4	<b><i>Good Site Practices and Waste Reduction Measures (con't)</i></b> <ul style="list-style-type: none"> <li>• Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;</li> <li>• Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce;</li> </ul>	To achieve waste reduction	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354)  Land (Miscellaneous Provisions) Ordinance (Cap. 28)

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	<ul style="list-style-type: none"> <li>• Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and</li> <li>• Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.</li> </ul>					
S8.6.5	<p><b><i>Good Site Practices and Waste Reduction Measures (con't)</i></b></p> <p>The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities. Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor.</p>	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
S8.6.6	<p><b><i>Good Site Practices and Waste Reduction Measures (con't)</i></b></p> <p>C&amp;D materials would be reused in the project and other local concurrent projects as far as possible.</p>	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005
S8.6.7	<p><b><i>Storage, Collection and Transportation of Waste</i></b></p> <p>Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include:</p> <ul style="list-style-type: none"> <li>• Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution;</li> <li>• Maintain and clean storage areas routinely;</li> <li>• Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and</li> <li>• Different locations should be designated to stockpile each material to enhance reuse.</li> </ul>	To minimize potential adverse environmental impacts arising from waste storage	Contractor	All work sites	Construction Phase	-
S8.6.8	<p><b><i>Storage, Collection and Transportation of Waste (con't)</i></b></p> <ul style="list-style-type: none"> <li>• Remove waste in timely manner;</li> <li>• Waste collectors should only collect wastes</li> </ul>	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase	-

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	<p>prescribed by their permits;</p> <ul style="list-style-type: none"> <li>• Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers;</li> <li>• Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28);</li> <li>• Waste should be disposed of at licensed waste disposal facilities; and</li> <li>• Maintain records of quantities of waste generated, recycled and disposed.</li> </ul>					
S8.6.9	<p><b><i>Storage, Collection and Transportation of Waste (con't)</i></b></p> <p>Implementation of trip ticket system with reference to DEVB TC(W) No. 6/2010, <i>Trip Ticket System for Disposal of Construction &amp; Demolition Materials</i>, to monitor disposal of waste and to control fly-tipping at PFRFs or landfills. A recording system for the amount of waste generated, recycled and disposed (including</p>	<p>To minimize potential adverse environmental impacts arising from waste collection and disposal</p>	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	disposal sites) should be proposed.					
S8.6.11 - S8.6.13	<p><b>Sorting of C&amp;D Materials</b></p> <ul style="list-style-type: none"> <li>• Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site.</li> <li>• Specific areas shall be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials.</li> <li>• The C&amp;D materials should at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled in the reclamation as far as practicable before delivery to PFRFs. While opportunities for reusing the non-inert portion should be investigated before disposal of at designated landfills.</li> </ul>	To minimize potential adverse environmental	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010  ETWB TCW No. 33/2002  ETWB TCW No. 19/2005
S8.6.15 – S8.6.16	<p><b>Sediments</b></p> <ul style="list-style-type: none"> <li>• Sediment encountered may be reused as filling material on-site after cement stabilization. Cement-stabilization process is undertaken by mixing sediment and cement and will convert sediment to earth filling material. The treated sediment has to comply with Risk-Based Remediation Goals (RBRGs) before being reused in order not to raise any land</li> </ul>	To ensure the sediment to be disposed of in an authorized and least impacted way	contractor	All works areas with sediments concern	Construction Phase	RBRG

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	<p>contamination issue. The adoption of RBRGs to assess stabilized sediment has been proposed in the current C&amp;DMMP. MFC has no adverse comment on the current C&amp;DMMP. The sediment quality indicates that all sediments comply with most stringent RBRGs except for one sediment sample (TKO-EBH501 3-3.95m) with lead exceeding the RBRG. Except for the sediment sample (TKO-EBH501 3-3.95m), the chemical screening results do not indicate sediment as contaminated soil. It is anticipated that reuse of sediment except sediment sample (TKO-EBH501 3-3.95m) will not lead to land contamination.</p> <ul style="list-style-type: none"> <li>• Despite exceedance of RBRG, onsite reuse of sediment under sample (TKO-EBH501 3-3.95m) as filling material after cement stabilization is also a suitable treatment. Sediment quality indicates the sediment sample (TKO-EBH501 3-3.95m) exceed RBRG for lead. While cement stabilization will immobilize metal contaminants, it is capable to treat the exceedance on lead. The stabilized material should comply with UTS of Lead and UCS. If the treated material do not comply with UTS or UCS, re-stabilization have to be undertaken to</li> </ul>					



EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	meet compliance of UTS and UCS before reusing the treated sediment as filling material. However, further agreement on final disposal/treatment on sediment under sample (TKO-EBH501 3-3.95m) has to be sought from DEP.					
S8.6.17 – S8.6.20	<p><b>Sediments (con't)</b></p> <ul style="list-style-type: none"> <li>Requirements of the <i>Air Pollution Control (Construction Dust) Regulation</i>, where relevant, shall be adhered to during boring, excavation, transportation and disposal of sediments or cement stabilization of sediment.</li> <li>A treatment area should be confined for carrying out the cement stabilization mixing and temporary stockpile. The area should be designed to prevent leachate from entering the ground. Leachate, if any, should be collected and discharged according to the <i>Water Pollution Control Ordinance (WPCO)</i>.</li> <li>In order to minimise the potential odour / dust emissions during boring, excavation and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges/trucks. Loading</li> </ul>	To determine the best handling and treatment of sediment	Contractor	All works areas with sediments concern	Construction Phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	<p>of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.</p> <ul style="list-style-type: none"> <li>In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site.</li> </ul>					
S8.6.21	<p><b>Sediments (con't)</b></p> <ul style="list-style-type: none"> <li>Alternatively, excavated sediment can be treated with marine disposal. The basic requirements and procedures for excavated sediment disposal specified under ETWB TC(W) No. 34/2002 shall be followed. MFC is responsible for the provision and management of disposal capacity and facilities for the excavated sediment, while the permit of marine dumping is required under the <i>Dumping at Sea Ordinance</i> and is the responsibility of the DEP.</li> </ul>	To ensure the sediment to be disposed of in an authorized and least impacted way	contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance
S8.6.23	<p><b>Sediments (con't)</b></p> <ul style="list-style-type: none"> <li>For allocation of sediment disposal sites and application of marine dumping permit, separate SSTP has to be submitted to EPD for agreement</li> </ul>	To determine the best handling and disposal option of sediment	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	<p>under DASO. Additional site investigation, based on the SSTP, maybe carried out in order to confirm the disposal arrangements for the proposed sediments removal. A Sediment Quality Report (SQR) shall then be required for EPD agreement under DASO prior to the tendering of the construction contract, discussing in details the site investigation, testing results as well as the delineation of each of the categories of excavated materials and the corresponding types of disposal.</p>					
<p>S8.6.24 - S8.6.28</p>	<p><b>Sediments (con't)</b></p> <ul style="list-style-type: none"> <li>The excavated sediments is expected to be loaded onto the barge and transported to the designated disposal sites allocated by the MFC. The excavated sediment would be disposed of according to its determined disposal options and <i>ETWB TC(W) No. 34/2002</i>.</li> <li>Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground,</li> </ul>	<p>To ensure handling of sediments are in accordance to statutory requirements</p>	<p>Contractor</p>	<p>All works areas with sediments concern</p>	<p>Construction Phase</p>	<p>ETWB TC(W) No. 34/2002 &amp; Dumping at Sea Ordinance</p>

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	<p>nearby drains and surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO).</p> <ul style="list-style-type: none"> <li>• In order to minimise the potential odour / dust emissions during boring and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.</li> <li>• The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be</li> </ul>					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	<p>conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP.</p> <ul style="list-style-type: none"> <li>• In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site.</li> <li>• Another possible arrangement for Type 3 disposal is by geosynthetic containment. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal.</li> </ul>					
S8.6.26	<p><b>Chemical Wastes</b></p> <p>If chemical wastes are produced at the construction site, the Contractor would be required to register</p>	To ensure proper management of	Contractor	All works sites	Construction Phase	Code of Practice on the Packaging,

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i> . Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or other licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i> .	chemical waste				Labelling and Storage of Chemical Wastes  Waste Disposal (Chemical Waste) (General) Regulation
S8.6.27	<b>General Refuse</b> General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light	To ensure proper management of general refuse	Contractor	All works sites	Construction Phase	Public Health and Municipal Services Ordinance (Cap. 132)

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	material.					
<b>Operation Phase</b>						
S8.6.30 - S8.6.31	<p><b>Chemical Wastes</b></p> <ul style="list-style-type: none"> <li>The requirements given in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes would be followed in handling of chemical waste as in construction phase. A trip-ticket system would be adopted by the operator to monitor disposal of chemical waste.</li> <li>Non-recyclable chemical waste should be disposed of at appropriate facility like CWTC by licensed collectors. Recyclable chemical waste should be collected and transported off-site by licensed collectors.</li> </ul>	To avoid environmental impacts in handling, storage and disposal of chemical waste	Operator	All facilities	Operation waste	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes  Waste Disposal (Chemical Waste) (General) Regulation
S8.6.32 - S8.6.33	<p><b>General Refuse</b></p> <ul style="list-style-type: none"> <li>Recycling of waste paper, aluminium cans and plastic bottles should be encouraged, it is recommended to place clearly labelled recycling bins at designated locations which could be accessed conveniently. Other general refuse should be separated from chemical and industrial waste by providing separated bins for storage to maximize the recyclable volume.</li> </ul>	To separate general refuse from other waste types and proper disposal of the refuse	Operator	All facilities	Operation Phase	Public Health and Municipal Services Ordinance (Cap. 132)

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve
	<ul style="list-style-type: none"> <li>A reputable licensed waste collector should be employed to remove general refuse on a daily basis to minimize odour, pest and litter impacts.</li> </ul>					





**Appendix D**  
**Summary of Activities Producing Surplus**  
**Material**

Work Process/Activity	Waste Types										
	Natural Excavated Material	Other inert material (eg concrete)	Plastic	Packaging	Paper	Timber	Bamboo Scaffolding	General Refuse	Vegetation and trees	Metals	Chemical Waste
Site clearance	✓	✓						✓	✓		
Demolition	✓	✓	✓			✓	✓	✓		✓	
Earthworks	✓										
Maintenance of plant and equipment											✓
Underground drainage	✓	✓	✓							✓	
Formwork			✓			✓				✓	
Falsework						✓	✓			✓	
Concrete works	✓	✓				✓					
Pre-cast concrete		✓	✓			✓				✓	
Piling and foundations	✓	✓					✓				
Road works	✓	✓									
Hard landscape	✓	✓									
Soft landscape	✓								✓		
Finishing works			✓	✓		✓	✓	✓		✓	✓
Mechanical-ventilation and air-conditioning			✓	✓		✓				✓	✓
Electrical works			✓	✓		✓				✓	✓
Material handling and storage	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
General welfare								✓			
Office activities			✓	✓	✓					✓	



**Contract No. ED/2018/04**  
**Trunk Road T2 and Infrastructure Works**  
**for Developments at the Former South Apron**

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## **Appendix E**

### **Notification to Truck Drivers**

NOTIFICATION TO TRUCK DRIVER

## 泥頭車司機運載物料及傾倒時需注意及檢查事項

- 泥頭車嚴禁超載
- 司機需持有有效的傾倒執照
- 已用帆布覆蓋整個泥斗及縛穩在車身或機動蓋掩已經蓋上
- 車身及車輪已經徹底清洗乾淨
- 已領取運載入帳票 (綠色) 並已填妥票上所有資料
- 到達指定檢查點才可打開帆布或機動蓋掩
- 如泥頭車駛往非指定的地點進行傾倒, 或進行非法傾倒, 則會構成嚴重不當傾倒, 可被吊銷傾倒牌照

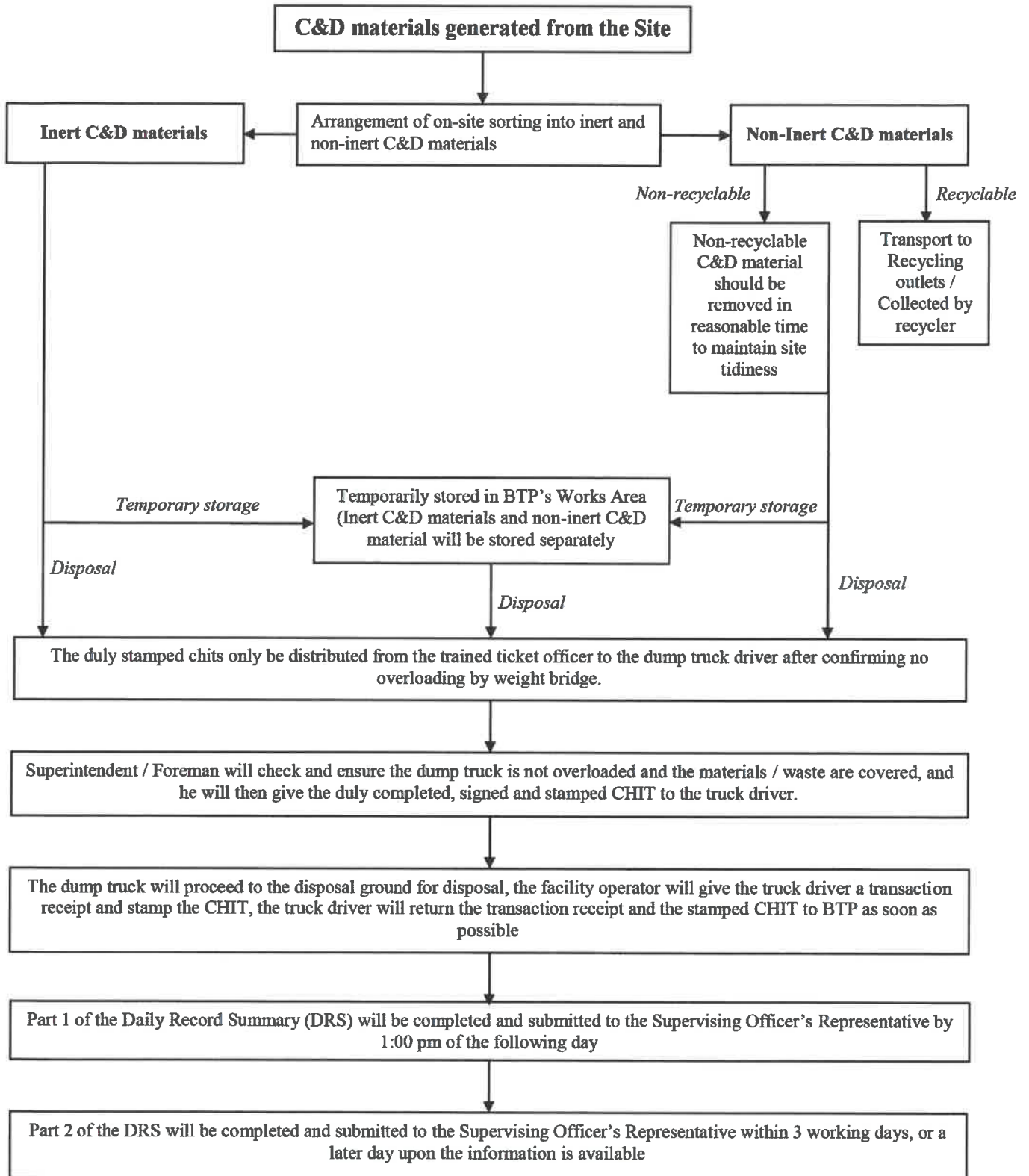


## Appendix F

# Trip Ticket System Flow Chart



**FLOWCHART TRIP TICKET SYSTEM**





# **Appendix G**

## **Daily Record Summary**



“Daily Record Summary” to record daily disposal of construction & demolition (C&D) materials from the \*Site  
“每日運載記錄摘要”記錄每日由\*地盤所傾卸的拆建物料

- (1) Contract no. & title 合約編號及名稱 : \_\_\_\_\_
- (2) Date of disposal 傾卸日期: \_\_\_\_\_
- (3) Disposal ground (s) designated in the Contract or directed by the Architect/Engineer 合約指定或建築師/工程師指示接收設施: (a) \_\_\_\_\_  
(b) Others 其它 \_\_\_\_\_
- (4) Approved alternative disposal grounds 另可接受的接收設施 \_\_\_\_\_

CHIT/ DDF no. 載運入帳 票/ 拆建 物料運載 記錄票編 號	Vehicle registration mark 車輛登記號 碼	Approx. vol (e.g. Full/Three Quarter/Half/One quarter) 大約承載量 (例如全、 3/4、半、1/4)	C&D materials type (e.g. inert or non-inert) 建築廢料種類 (例如惰性 或非惰性)	Disposal ground 接收設施	Signature & Name of the Contractor's Designated person before departure 於離開地盤 前, 承建商的指 定人仕姓名及 簽名	Departure time from *Site 離開地盤時 間	Signature & name of the Architect/Engineer's supervisory staff before departure or other time as agreed between the Architect/Engineer's Representative and the Contractor <sup>1</sup> 於離開地盤前或其它經承建商與建 築師/工程師代表同意的時間, 建築師 /工程師監管人員姓名及簽名	Actual disposal ground 真正接收設 施	Arrival time at disposal ground 抵達接收設 施 時間	Remarks 備註:

Part 1<sup>2</sup> 甲部

Part 2<sup>3</sup> 乙部

Submitted by 呈交 : \_\_\_\_\_

[Name of Contractor's Designated Person  
承建商的指定人仕姓名

Signature 簽名 : \_\_\_\_\_

Date 日期: \_\_\_\_\_

Received by 接收 : \_\_\_\_\_

[Name and signature of the  
Architect/Engineer's staff]  
建築師/工程師監管人員姓名及簽名

Post 職位 : \_\_\_\_\_

Date & Time 日期及時間 : \_\_\_\_\_

<sup>1</sup> For term contract, if there are no full time site supervisory staff, the Architect/Engineer's supervisory staff should spot check and then sign as appropriate in accordance with paragraph 25 of DEVB TC(W) 6/2010 定期合約, 如沒有全職地盤監管人員, 應根據 DEVB TC(W) 6/2010 的第 25 段進行定點檢查及簽署

<sup>2</sup> Part 1 甲部- The Contractor shall complete Part 1 in duplicate and a copy should be kept by the Architect's/ Engineer's Representative. 承建商填寫甲部兩份, 副本由建築師/工程師代表持有

<sup>3</sup> Part 2 乙部- The Contractor shall complete Part 2 and submit the whole Summary to the Architect/Engineer's Representative within 1 working day after the records are posted at the EPD web-site. 承建商填寫乙部及將整份運載記錄摘要於記錄上載在環境保護署網頁後 1 個工作天內呈交給建築師/工程師代表

\*Delete "Site" and substitute "Sites" for term contracts. 定期合約將 "Site" 刪去及以 "Sites" 代替





## **Appendix H**

### **Waste Flow Table**



**WASTE FLOW TABLE**

Name of Department:           CEDD          

Contract No. / Works Order No.:

Monthly Summary Waste Flow Table for \_\_\_\_\_ [to be submitted not later than the 15<sup>th</sup> day of each month following reporting month]

(All quantities shall be rounded off to 3 decimal places.)

Month	Actual Quantities of Inert C&D Materials Generated Monthly					
	(a)=(b)+(c)+(d)+(e) Total Quantity Generated	(b) Hard Rock and Large Broken Concrete	(c) Reused in the Contract	(d) Reused in other Projects	(e) Disposed of as Public Fill	Imported Fill
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )
Jan						
Feb						
Mar						
Apr						
May						
Jun						
Sub-total						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						
Total						



Month	Actual Quantities of <u>Non-inert</u> Construction Waste Generated Monthly								
	Metals		Paper/ cardboard packaging		Plastics (see Note 3)		Chemical Waste		Others, e.g. General Refuse disposed at Landfill
	(in '000kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000m <sup>3</sup> )
	generated	recycled	generated	recycled	generated	recycled	generated	recycled	generated
Jan									
Feb									
Mar									
Apr									
May									
Jun									
Sub-total									
Jul									
Aug									
Sep									
Oct									
Nov									
Dec									
Total									



Forecast of Total Quantities of Construction and Demolition Materials to be Generated from the Contract*										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed of as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	General Refuse disposed of at Landfill
(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )

Notes:

- (1) The performance targets are given in the CS Clause 6(14) and the EM & A Manual(s).
- (2) The waste flow table shall also include C&D materials to be imported for use at the Site.
- (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m<sup>3</sup>. (CS Clause 25.02A (7) refers).