Waste Management Plan
for Tung Chung New Town Extension
(EP No. EP-519/2016)

May 2018

土木工程拓展署
Civil Engineering and Development Department

Tung Chung New Town Extension

Environmental Certification Sheet for Environmental Permit No. EP-519/2016

Reference Document/Plan

Document/Plan to be Certified:	Waste Management Plan (Revision 1)
Date of Report:	28 May 2018

Reference EP Condition

Environmental Permit Condition:	Condition 2.24
The Permit Holder shall, no later than 3 months before the commencement of construction of the Project, deposit 3 hard copies and 1 electronic copy of a Waste Management Plan (The Plan) for the construction of the Project with the Director.	

ET Certification

I hereby certify that the above referenced document/plan complies with the above referenced condition of EP-519/2016

Jovy Tam
Environmental Team Leader
ERM-Hong Kong, Limited

Date: 29 May 2018

BLACK & VEATCH

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OUR REF 198377-0033

YOUR REF

DATE 29 May 2018

Sustainable Lantau Office
Civil Engineering and Development Department
13/F, North Point Government Offices
333 Java Road, North Point
Hong Kong

For the attention of Mr. H.Y. Szeto / Mr. Stanley Yip

Dear Sirs,

Agreement No. CE 59/2017 (EP)
Independent Environmental Checker for Tung Chung New Town Extension – Investigation

Waste Management Plan (EP condition 2.24)

We refer to the Waste Management Plan (Revision 1) dated 28 May 2018 and certified by the Environmental Team Leader on 29 May 2018. Please note we have no adverse comments on the captioned submission. The captioned submission is hereby verified in accordance with the requirement stipulated in Condition 2.24 of EP-519/2016.

Should you have any query, please feel free to contact the undersigned at 2608 7314 (chuawo@bv.com) or our Ivan Ting at 9222 9490 (iec.tcnte@gmail.com).

Yours faithfully,
for and on behalf of
BLACK & VEATCH HONG KONG LIMITED

MANUEL CHUA
INDEPENDENT ENVIRONMENTAL CHECKER

c.c. ET Leader – ERM (Attn: Mr. Jovy Tam) [by Email: jovy.tam@erm.com]
Project Manager / TCE – AECOM (Attn: Mr. Robo Lo) [by Email: sre1.tce@gmail.com]

Project Description

The development of the Tung Chung New Town Extension (TCNTE), comprising Tung Chung East (TCE) and Tung Chung West (TCW), is a mega-scale and complex project aiming to provide land to meet the future housing, economic and social development needs of Hong Kong. Due to the fact that the proposed works are geographically separated, the implementation of the mega-scale Project is divided into two packages, namely TCE and TCW respectively. In accordance with the tight delivery programme, the Project will be implemented in phases under separate contracts for the developments of TCE and TCW.

Scope of Works for Tung Chung New Town Extension

The Tung Chung New Town Extension project (the Project) comprises the following elements:

(i) reclamation of the seabed by a non-dredged method at TCE to form a total of about 130 hectares of land;

(ii) construction of about 4.9 kilometres of seawalls, with an eco-shoreline, three drainage box culvert outfalls, three circulation drains and a seawater intake at TCE;

(iii) construction of a 470-metre (m) long multi-cell drainage box culvert at TCE;

(iv) provision of infrastructure for Tung Chung Area 58, including construction of a single two-lane road with a footpath of about 270 m in length and the associated utility works;

(v) site formation works for about 10 hectares of land at TCW;

(vi) construction of roads, footbridges, drainage, sewerage, waterworks, sewage and salt water pumping stations, fresh water and salt water service reservoirs, and flood protection measures;

(vii) provision of new cycle tracks connecting to the existing cycle track network;

(viii) provision of a river park adjacent to a portion of Tung Chung River and de-channelisation of a section of Tung Chung River at TCW;

(ix) landscaping, reprovisioning and ancillary works; and

(x) implementation of environmental mitigation measures and environmental monitoring and audit works.

Implementation Programme

The Contract No. NL/2017/03 – Tung Chung New Town Extension – Reclamation and Advance Works (i.e. Contract 1) at TCE has been awarded in December 2017 and is scheduled for completion in end 2023. The main contractor for Contract No. NL/2017/03 is Build King – Samsung C&T Joint Venture (BKSCTJV).

The site formation and infrastructure works at TCE and TCW are under detailed design and CEDD will seek funding from the Legislative Council in phases to tie in with population intakes. Subject to funding approvals by the Legislative Council Finance Committee, these remaining construction works at TCE and TCW are tentatively scheduled for commencement in phases from 2020.

Submissions under EP

In view that only the reclamation and advance works contract (i.e. Contract 1) at TCE has commenced and other works of the Project are still under detailed design, this submission is prepared based on the latest information of Contract 1. The submission shall be updated before respective contract commencement of construction of the site formation and infrastructure works at TCE and TCW according to the relevant requirements contained in the EM&A Manual, EIA Report and EP.

The details of Waste Management Plan for Contract 1 are provided in **Section 1** below.

Section 1

Waste Management Plan for Contract No. NL/2017/03 – Tung Chung New Town Extension – Reclamation and Advance Works (i.e. Contract 1)

BUILD KING - SCT JOINT VENTURE

Civil Engineering and Development Department
Contract No. NL/2017/03

Tung Chung New Town Extension – Reclamation and Advance Works

Waste Management Plan

Revision 1

Complied By :	Authorized for issue :
Signature :	Signature :
Name: Calvin Sze Post : Environmental Officer Date : 28 May 2018	Name: Mr. Keith Tse Post : Site Agent Date : 28 May 2018

Appendices

List of registered holders

Copy No.	Deliver To	Position	Company
1.	Frankie Fan	*Project Manager*'s Delegate	AECOM
2.	Ho Wing Tai	Project Manager	BKSCTJV
3.	Keith Tse	Site Agent	BKSCTJV
4.	Lee Wai Man	Construction Team Leader	BKSCTJV
5.	Calvin Sze	Environmental Officer	BKSCTJV
6.	TBC	Environmental Engineer	BKSCTJV
7.	Isaac Lau	Environmental Supervisor	BKSCTJV
8.	Lai Chi Wing	Superintendent / Safety Supervisor	BKSCTJV
9.	C K Suen	Safety Manager	BKSCTJV
10.	Vincent Hui	Safety Officer	BKSCTJV

Registered Holders of Subcontractors

Copy No.	Deliver To	Position	Sub-Contractors

1.0 INTRODUCTION

1.1 Background

This plan will outline the Contractor WMP proposed by the Contractor for CEDD Contract (Contract No. NL/2017/03) - Tung Chung New Town Extension and Advance Works. The main contractor Build King – Samsung C&T Joint Venture (hereinafter mentioned as BKSCTJV) will ensure that all his employees will implement the accepted version of this WMP as an integral part of their daily activities on site.

1.2 Scope of Works

The works mainly comprise

(a) Reclamation of the seabed by a non-dredged method at Tung Chung East (TCE) to form a total of about 130 hectares of land;
(b) Construction of about 4.9 kilometers of seawalls with eco-shoreline, three drainage box culvert outfalls, three circulation drains and a seawater intake;
(c) Construction of about a 470-metre long multi-cell drainage box culvert at TCE;
(d) Provision of infrastructure for Tung Chung Area 58, including construction of a single two-lane road with a footpath of about 270 meters in length and the associated utility works; and
(e) Associated environmental mitigation measures.

1.3 Purposes of the Waste Management Plan

This WMP provides necessary technical information, guidance and instructions to designated personnel who are responsible for the management of Construction and Demolition Materials (C&DM).

The aims of this WMP are:

- To identify and classify the types of C&DM generated in the execution of the works;
- To identify the potential for reuse, recycling minimization and disposal of C&DM from the proposed construction activities; and
- To outline the implementation, monitoring and audit programmed to ensure that the wastes arising from the construction activities are handled, stored, collected, transferred and disposed of in an environmentally acceptable manner which complies with the contract requirements and the relevant *Ordinance* and *Regulations* in the Government of Hong Kong SAR.

"C&DM" refers to surplus materials arising from any land excavation or formation, civil/building construction, road works, building renovation or demolition activities. It includes various types of the reusable materials, building debris, rubble, earth, concrete, timber and mixed site clearance materials. When sorted properly materials suitable for land reclamation and site formation (known as public fill) should be reused at public filling area whereas the remaining C&DM are to be disposed of at landfills.

This WMP will also describe the waste management arrangements for other wastes (such as chemical waste, general refuse) that will be generated during the construction activities.

1.4 Waste Management Requirements and Guidelines

During the contract period, BKSCTJV will comply with the following legislations, code of practices, guidelines, practical notes and technical circulars.

■ **Statutory requirements**

- Waste Disposal Ordinance (Cap. 354) and its subsidiary regulations;
- Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C);
- Public Health and Municipal Services Ordinance - Public Cleansing and Prevention of Nuisances Regulation (Cap. 132);
- Land (Miscellaneous Provisions) Ordinance) (Cap. 28);
- Dumping at Sea Ordinance (Cap. 466); and
- Dangerous Goods Ordinance (Cap.295)

■ **Codes of Practice, Circulars and Guidelines**

BKSCTJV will meet all relevant requirements by consulting the following codes of practice, technical circulars and guidelines:

a. Environment, Transport and Works Bureau Technical Circular (Works) No. 19/2005 - Environmental Management on Construction Sites;
b. Environment, Transport and Works Bureau Technical Circular No. 33/2002 - Management of Construction and Demolition Material Including Rock;
c. Development Bureau Technical Circular (Works) No. 6/2010 - Trip-ticket System for Disposal of Construction and Demolition Material;
d. Environment, Transport and Works Bureau Technical Circular (Works) No. 24/2004 - Specifications Facilitating the Use of Concrete Paving Units Made of Recycled Aggregates;
e. Works Bureau Technical Circular No. 12/2002 - Specifications Facilitating the Use of Recycled Aggregates;
f. Development Bureau Technical Circular (Works) No. 8/2010 - Enhanced Specification for Site Cleanliness and Tidiness;
g. Works Bureau Technical Circular No. 19/2001 - Metallic Site Hoardings and Signboards;
h. Works Bureau Technical Circular No. 12/2000 - Fill Management;
i. Works Bureau Technical Circular No. 04/1998A - Use of Public Fill in Reclamation and Earth Filling Projects;
j. Works Bureau Technical Circular No. 04/1998 - Use of Public Fill in Reclamation and Earth Filling Projects;
k. Works Bureau Technical Circular No. 16/1996 - Wet Soil in Public Dumps;
l. Works Bureau Technical Circular No. 02/1993B - Public Filling Facilities;
m. Works Bureau Technical Circular No. 02/1993 - Public Dumps;
n. Works Bureau Technical Circular No. 32/1992 - The Use of Tropical Hardwood on Construction Sites;
o. A Guide to the Registration of Chemical Waste Producers;
p. A Guide to the Chemical Waste Control Scheme;
q. Code of Practice on the Packaging, Labeling and Storage of Chemical Wastes;
r. Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste – (Cap 354, Section 35) and,
s. Environmental Guidelines for Planning in Hong Kong (1990), Hong Kong Planning and Standards Guidelines, Hong Kong Government.

BKSCTJV will observe all applicable statutory requirements, legislation and associated regulations, and/or code of practices with regard to the waste to be generated in the construction activities. BKSCTJV will also apply for all necessary permits and licenses under these ordinances / regulations

1.5 License Requirements

Where appropriate, BKSCTJV will apply for all permits and licenses required under the following legislation for the handling and disposal of waste arising from the Project:

a. Chemical Waste Producer Registration under the Waste Disposal (Chemical Waste) (General) Regulation; and,
b. License to Collect and Transport Chemical Waste under Waste Disposal Ordinance
c. Public Dumping License under the Land (Miscellaneous Provisions) Ordinance.

A licensed chemical waste collector will be appointed for the disposal of chemical waste. Upon classification of any types of chemical waste as dangerous goods under the Dangerous Goods Ordinance, the handling of these wastes will comply with all the requirements of the ordinance and its regulations.

2.0 ORGANISATION AND STRUCTURE

This Section provides an outline of the roles and responsibilities of the major site staff involved with the management of C&DM arising from the Project.

2.1 Organization and Responsibility

The Project Manager / Deputy Project Manager will have the overall responsibility to ensure that the requirements of the WMP are properly implemented. The Site Agent will act as the Waste Manager for the Contract. The Construction Team Leader acts as Deputy Waste Manager and Team Leader of the Environmental Team for overall control of waste management practices to ensure compliance with the contract requirements. The Environmental Officer and Environmental Supervisor will communicate and coordinate with ET on waste management for environmental monitoring and audit. The responsibilities of key site staff for the WMP are listed as follows: (see ***Appendix A*** of Project Environmental Organization Chart).

Project Manager PM / Deputy Project Manager DPM (Chairman)

The PM / DPM will maintain overall control of all aspects of the construction activities and will oversee the implementation of the WMP. He is also responsible for ensuring that there are adequate resources available for the implementation of the WMP. He will also chair the ad hoc meeting(s) with the Supervising Officer's Representatives to discuss the WMP.

Site Agent, SA (Deputy Chairman)

The Site Agent will be responsible for management and control of the construction activities in relation to waste management and mitigation measures. He will be responsible for assigning other team members to assist him for supervision and enforcement of the on-site waste management practices. The Site Agent will be responsible for:

- Identification and classification of all possible wastes arising from the construction activities
- Analysis of effectiveness, efficiency and reliability of waste reduction programme
- Obtaining all necessary licenses and permits for the handling and disposal of wastes
- Planning for on-site segregation, sorting and storage of wastes
- Ensure that the on-site waste management practices are in compliance with all legislations and requirements of the Contract
- Carry out quarterly internal auditing for the implementation of WMP
- Provide resources to the implementation and control of the WMP

Environmental Engineer, EE

- Overview and coordinate to Environmental Officer in relation to waste management
- Direct AE and GF as appropriate in supervising and enforcing the on-site mitigation measures
- Report to the SA
- Ensure all disposal records be promptly available to the EO for record or/and action as necessary

Environmental Officer, EO

- Identify legal requirements
- Ensure site comply with legal requirements
- Prepare, implement and update the WMP
- Update the Waste Flow Table and Use of Timber Record
- Verify waste management activities and related results to comply with planned arrangements
- Arrange and provide the environmental training including the site specific induction training and

toolbox talks
- Organize environmental promotional activities
- Liaise on all matters relating to complaint, enquiry and non-compliance
- Carry out environmental system audits

Environmental Supervisor, ES; Safety Officer, SO and Safety Supervisor, SS (Team Member)

- Identify statutory requirements, contract requirements and corporation requirements
- Identify material that can be recycled, re-use and returned
- Arrange re-use, recycle and return work
- Monitor sub-contractors and workers to implement according to WMP
- Conduct waste management briefing to all site staff and workers
- Carry out quarterly internal auditing for the implementation of WMP

General Foreman, GF (Team Member)

- Prepare location plans for storage of building materials to avoid or minimize construction materials damage on site
- Ensure WMP is implemented and maintained
- Instruct relevant parties to solve management problems
- Instruct and monitor sub-contractors and workers to implement according to WMP
- Carry out monthly review for the implementation of WMP

Foremen, FN (Team Member)

- Assist General Foreman to prepare location plans for storage of building materials to avoid or minimize relevant materials damage on site
- Arrange sorting facilities for waste materials re-use and recycling
- Arrange waste materials storage areas and disposal of waste materials according to trip-ticket System
- Ensure that daily site cleanliness and tidiness are implemented
- Instruct and monitor sub-contractors and workers to implement according to WMP
- Carry out weekly review for site cleanliness and tidiness

Subcontractor Representatives, SR (Team Member)

- Ensure that construction waste are properly sorted out and disposed
- Ensure that construction waste are properly reused and recycled
- Coordinate with foremen to rectify and take follow-up actions for identified waste management issues
- Provide adequate resources for the implementation of WMP
- Direct and supervise workers to implement according to WMP

Workers, WR

- Follow the instructions given by General Foreman, Foremen or Subcontractor Representatives to carry out waste management issue on site
- Reduce construction waste generation on site if possible
- Ensure that construction waste are properly sorted, re-used, recycled or returned on site
- Maintain good housekeeping of the workplaces after daily work activities

3.0 IDENTIFICATION AND CLASSIFICATION OF WASTE GENERATED FROM THE CONSTRUCTION ACTIVITIES

3.1 Waste Arising from the Construction Activities

Major activities that will generate waste from this Project include site clearance, excavation, formwork construction for concreting, etc.; which can be divided into distinct categories based on their composition as follows:

- Excavated materials from foundation work and underground services works;
- C&DM from demolition, structural, architectural and external works;
- Chemical waste from maintenance of plant and equipment; and
- General refuse from construction works.
- Chemical waste from construction works

A summary of the estimated quantities of C&DM to be generated from the construction and demolition work under the Project and the tentative C&DM disposal programme is attached in ***Appendix B***.

3.1.1 Excavated Material

The excavated material generated from excavation will consist of soil and rock materials which will, as far as practicable, be reused on-site for the backfilling works. Excavated material will also be generated from foundation work, underground services works and even any temporary works for excavation. Any surplus excavated material will be temporary stored in a designated area (e.g. Portion I) and would be engaged for backfilling. As for armour rock removal of the existing seawall, it will also be maximized to reuse for the construction of new seawall.

3.1.2 Construction & Demolition Materials (C&DM)

C&DMs include inert public fill materials such as bricks, rubble, concrete and non-inert C&DM such as wood, steel, vegetation, floating refuse, office and work force waste etc.

The majority of C&DM will arise during site clearance, demolition and excavation works.

3.1.3 General Refuse

The workforce will likely generate general refuse comprising food scraps, waste paper, empty containers, etc.

3.1.4 Chemical Waste

The maintenance and servicing of construction plant and equipment generates chemical waste, for instance, cleaning fluids, solvents, and lubrication oil and used batteries. The maintenance of vehicles also uses common chemicals, oil, lubricants and paints for this purpose. A licensed chemical waste collector would be employed for collection of chemical waste.

A summary table regarding waste classification and recommended usage / outlet is shown in Table 3.2. The handling / management of each waste type are detailed in Section 4.

3.2 Designated Waste Disposal Facilities and Disposal Criteria

The designation of landfill facilities, the possible disposal routes and the relevant criteria as stipulated in the Waste Disposal (Designated Waste Disposal Facility) Regulation (Cap 354L) are summarized in Table 3.2.

Table 3.2 Designation of Public Fill Reception Facility and Landfill

C&DM	Designated Waste Disposal Facility	Designated Location	Possible Disposal Routing	Criteria to be adopted
Inert C&DM	Recommended to have a designated location for temporary storage of the excavated (inert C&D) material			
C&DM (Non-inert portion [excluding contaminated materials] and not recyclable)	Landfills	North East New Territories (NENT) Landfill	North Lantau Expressway, Tsing Ma Bridge, Tsing Yi North Coastal Road, Castle Peak Road, Shing Mun Tunnel, Tai Po Road, Tolo Highway, Fanling Highway, Sha Tau Kok Road, Wo Keng Shan Road	For a load of construction waste 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 vehicles (GN6395)
Chemical Waste	Dunwell Industrial (Holdings) Ltd.	8 Wand Lee Street, Yuen Long Industrial Estate, Yuen Long, NT, Hong Kong.	North Lantau Expressway, Tsing Ma Bridge, Ting Kau Bridge, Tai Lam Tunnel, Route 3, Castle Peak Road, Wang Lee Street	Admission tickets shall be granted and adopted for disposal

BKSCTJV will also comply with the following requirement when delivery of construction waste to the landfills:

(1) Any over-sized inert C&DMs will be broken down to less than 250mm in size so as to facilities its re-use by reclamation or earth-filling.
(2) BKSCTJV will implement proper measures to ensure that the dump trucks delivering C&DMs are not overloaded. The measures include the checking of load cell before leaving of construction site.
(3) Mixed C&DM should be sorted at source to reduce the inert content to less than 30% by weight as far as practicable before they are delivery to landfills.
(4) The C&DM delivered for landfill disposal shall contain no free water and the liquid content shall not exceed 70% by weight.

4.0 PROPOSAL FOR WASTE MANAGEMENT

4.1 Waste Management Hierarchy

BKSCTJV will implement appropriate waste management practices according to the nature and category of wastes arising. Waste management options will be selected according to the widely accepted hierarchy shown by Table 4.1 below.

Table 4.1 Waste Management Hierarchy

Avoidance and minimization	Avoid and minimize waste through changing or improving practices and designs.	↑ Highest priority
Reuse of materials (with limited reprocessing)	Reuse construction waste with only limited reprocessing such as uncontaminated soil, wooden planks, metals and other materials in other construction works or process.	
Recovery and Recycling (may require reprocessing)	Undertaking on site or off site recycling.	Lowest priority ↓
Treatment	Offsite destruction and detoxification etc, of wastes into less harmful substances.	
Disposal	Release of wastes to designated areas properly so as to render them harmless.	

The hierarchy will be used to evaluate waste management options for the minimization of waste generation. By the implementation of this hierarchy, the overall construction cost will be reduced by avoiding the over-ordering of construction materials and the handling and disposing of unnecessary waste.

4.2 Design and Planning of Construction Works

Prior to commencement of works, BKSCTJV will carefully consider the construction methodology, demolition procedures and programme to assess the waste generation during works and study the available opportunity to reduce waste arising. Good work planning will, not only result in a better estimation of materials required for the works, but also contribute to the performance of the works in the first instance so as to avoid abortive activity.

Prior to the commencement of works, the location and necessary facilities for construction material storage, sorting and temporary waste collection will be planned and implemented. The opportunity for the reuse and recycling of the waste material on site and off site will be carefully studied.

4.3 Waste Minimization Measures and Good Site Practice

Good management and site practice can prevent the over generation of waste. Waste reduction is best achieved at the planning and design stage as well as by ensuring the implementation of good site practice. The good site management to be adopted will include: -

a. Nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;

b. Training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling;

c. Using the correct amount of raw materials at the correct time and the recording of materials flow to minimize over ordering. The construction materials will be stocked carefully to prevent damage or contamination. During the works, only exact quantity of materials will be collected and if necessary, any surplus will be returned to stock after consideration of its use;

d. Maximizing the utilization of materials and the avoidance of unnecessary cutting such that off-cuts will be used when short lengths or a small quantity of materials are required;

e. A preference for reusable non-timber formwork such as steel formwork or plastic facing;

f. Sorting of all excavated / demolition materials to recover the inert portion (e.g. soil and broken rock) for reuse on site whenever possible or disposal to designed outlets (e.g. public filling areas). Recover all metal, cardboard and paper on site and properly stored in dry and clean conditions temporarily for later collection by recycling contractors;

g. Segregation and storage of constituents of C&DM in appropriate containers, skips or stockpiles to enhance the opportunity for reuse and recycling of materials or their proper disposal. Sufficient protective measures provided in the storage area for sorting to avoid damage or contamination;

h. Collection of aluminum cans, paper waste and plastic bottles by site staff, and provision of separately labeled bins to segregate these wastes from other general refuse arising from the work force;

i. Provision of a designated waste working team to collect the refuse on site regularly;

j. Removal of all other un-reusable C&DM off site as soon as practicable in order to optimize the use of the on-site storage space;

k. Implementation of the trip-ticket system to ensure that the dumping / filling location is used so as to prevent fly tipping. The security guard will ensure only dump trucks with properly completed trip-tickets can leave the site. Wherever practicable, weighing equipment will be provided at the site entrance to accurately record the amount of C&DM transported off site. The trip-tickets, with valid stamp from an agreed dumping / filling location, will be collected upon return and appropriately filed in the site records;

l. During the storage and transportation of waste, a tarpaulin covering or enclosed containers will be used to minimize fugitive dust emission;

m. Unused chemicals or those with remaining functional capacity will be retained for reuse. The chemicals will be separated for special handling and appropriate treatment at the Chemical Waste Treatment Facilities (CWTF);

n. The setting up of special control measures to regulate storage, labeling, transport and the disposal of classified chemical waste such as paint residues, lubricants or other oil waste including the registration as a chemical waste producer and the disposal of such wastes by a licensed collector to CWTF;

o. Imposition of penalty system on Contractors' improper behaviours when illegal dumping and landfilling outside their respective construction sites, i.e. on nearby farmlands and riverbanks, are reported;

p. Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;

q. The amount of waste reused, recycled or disposed will be recorded regularly.

Mitigation measures according to the EIA will be implemented on site. The details are summarized in **Appendix E**. The implementation schedule of major waste management measures is shown in **Appendix F**.

4.4 Handling of C&DM

Storage, collection and transportation of the C&DM will be carefully planned and implemented to minimize any adverse impact upon the environment. The generated C&DM will be sorted on site and C&DM for recycling as appropriate in accordance with ETWB TCW No. 19/2005, or subsequent disposal at approved strategic landfills. Wherever practicable, SA will arrange the segregation of these wastes on site in order to maximize the recovery of reusable and recyclable materials. Separate areas will be designated for segregation and storage where site-specific conditions allow.

The segregated types of C&DM will be stored in separate covered storage areas to avoid possible cross contamination and loss due to windblown and fugitive dust. If the C&DM are to be temporarily stored in piles on site, they will either be covered with a tarpaulin or watered regularly to prevent the emission of fugitive dust. SA will ensure that C&DM are removed from their origin and processed at designated points in a timely manner.

The period of surcharging within any portion of site shall be deemed to commence from the time that the surcharge material has been brought to the designated height of the surcharge over the full extent of that portion. The Contractor shall critically review of the scheduling of the surcharge operations to avoid, or otherwise, minimize generation of residual C&D materials requiring disposal during and at the end of the land formation.

Recyclable materials such as steel mesh, reinforcement bars, window frames, railing, banisters, and wooden planks will be separated from other C&DM. These materials will be either reused on site or collected by an external licensed waste recycling agent. If an external recycling agent is required, details of the nominated company will be submitted to the Project Manager.

4.4.1 Waste Sorting

Sufficient space will be provided to accommodate the separation of inert and non-inert materials and a unique access checkpoint with security control. The SA will manage the waste sorting facilities and promptly remove all the sorted and processed materials arising from or in connection with the works from the site to minimize the extent of temporary stockpiling on the site. The categories of C&DM to be sorted within the waste sorting facilities include:

- Inert materials consisting of earth, building debris, rock fragments, concrete bricks, tiles, masonry and mortar etc;
- Metals;
- Paper/Cardboards; and,
- Timber.

- Waste from Landscaping Works

Following the sorting of these wastes, they will be sent separately for reuse and recycling, processing or disposed of as described in the following sections.

Other than large waste sorting facilities, BKSCTJV will provide refuse and recycling bins respectively to collect different types of refuse generated by the site office and the workforce. These will include bins to collect general refuse such as food waste and recycling bins to collect waste paper separately, plastic bottles and aluminum cans. These bins will be provided in common areas where the wastes are commonly generated such as site offices, workshops, canteen and other site accommodation areas for the workers.

(I) Inert C&DMs

Following waste sorting, the remaining inert C&DM will be managed as follows:

Excavated Material

In order to minimize the amount of excess excavated material, the priority for the management options of excess excavated material will be as followings: -

a. *Suitable excavated material will be stored for backfilling purposes;*
b. *Excessive excavated material as well as surcharge will be transported to other sites for reuse as approved by the Project Manager; whilst the ET, IEC and EPD would be informed.*

The method statement for stockpiling and transportation of excavated materials and other construction waste is shown in **Appendix G**.

Concrete Waste

The surplus concrete after each concrete pour will be used for some minor pre-cast elements where practicable. Dry concrete waste, including broken concrete from demolition works, will be sorted out from the other wastes for reuse in site temporary road construction.

(II) Non-Inert C&DMs

Timber Waste

As far as possible, BKSCTJV will avoid, reduce and minimize the use of timber in temporary works construction. Where the timber is used for this purpose or for one process / activity with an estimated quantity exceeding 5m^3, BKSCTJV will submit a method statement to the Project Manager for agreement prior to the commencement of the works.

A description, justification and the estimated quantity for every work process / activity requiring the use of timber for temporary works construction.

Metal Wastes

BKSCTJV will avoid and reduce metal waste during the design, planning and construction process. Cut metal or steel bar will be considered for re-use in temporary or minor works on site. When metal waste has arisen on site, it will be sorted and collected daily by an assigned work team and stored in a designated storage area for subsequent use or collection by recycling contractors.

General Refuse and C&DM

Un-recyclable, non-inert C&DM, i.e. C&DM, floating refuse and general refuse, which mainly consists of food waste, aluminum cans and waste paper, will be generated from construction activities, workers and the site office.

The C&DM will be temporarily stored and containers or skips will be provided for temporary waste storage to prevent odour, pest and windblown litter.

Office waste will be reduced through the recycling of paper. Sacks for waste paper and baskets for reusable papers will be provided in the Site office. General refuse including food and domestic waste will be stored in enclosed bins or compaction units separate from the construction and chemical wastes. Lunch boxes, plastic bottles, containers, plastic sheets and foam will be sorted and stored in separately labeled bins for subsequent recycling. Reputable recycle contractors will be employed to collect recyclable materials. The amount of waste to be recycled will be recorded, controlled and monitored through the maintenance of WFT.

The general refuse and the un-recyclable C&DM will be collected and disposed of on a regular basis to minimize the likelihood of odour, pests and litter. They will be transported and disposed of by a licensed waste hauler. A trip-ticket system to trace the transportation and destination of the waste will be implemented and the burning of refuse on the site will be strictly prohibited.

4.4.2 Chemical Waste

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

Chemical wastes are likely to be generated during maintenance of plant and equipment and these may include spent filter cartridges containing heavy metals, asbestos waste, spent batteries, used mechanical oil, cleaning fluid, spent solvents, lubricating oil and paints and paint containers.

All chemical wastes generated on site will be stored and labeled in accordance with the Code of Practice on the Packaging, Labeling and Storage of Chemical Waste published by EPD. All workers involved in the handling of chemical waste will be trained properly and will be provided with appropriate protective clothing.

The sorting and segregation of chemical waste will be carried out on site to ensure the waste is appropriately handled, labeled and treated prior to disposal off-site. The recoverable chemical wastes such as oil, paint and solvent, will be separated from other chemical wastes and an EPD licensed chemical waste collector will be employed to collect the chemical waste.

<u>Storage of Chemical Waste</u>

Chemical waste will be stored at designated storage areas in accordance with the Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The containers to be used for the storage of chemical waste will:

a. be suitable for the substance they are holding, resistant to corrosion and be maintained in a good condition and kept securely closed;
b. have a capacity of less than 450L unless the specifications have been approved by the EPD; and,
c. display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.

The storage area for chemical waste will:

a. be clearly labeled and used solely for the storage of chemical waste;
b. be enclosed on at least three sides;
c. have an impermeable floor and be bunded to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is greater;
d. have adequate ventilation;
e. be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary); and
f. be arranged so that incompatible materials are adequately separated.

Disposal of Chemical Waste

A licensed waste collector will be employed to deliver the chemical waste to legal treatment facilities. Waste dry battery (road flash light) and Waste Oil will be transported to Dunwell Industrial (Holdings) Limited for handling purpose. The trip-ticket system will be strictly implemented to ensure the chemical waste is transported by and to proper agents. Trip tickets issued for every chemical waste collection will be retained and filed for future reference and inspection.

Please refer to Section 5.2 for the recording system of C&DM and waste. A sample of the Monthly Waste Flow Table and Record of Timber Usage is given at **Appendix C.**

4.4.3 Hazardous Material

All hazardous materials generated from the demolition works shall be sorted and handled properly. For the grits and any other depositions collected from the existing facilities, Admission Ticket shall be applied to deliver such special waste to designated landfill site.

BKSCTJV will conduct a risk analysis and produce a method statement specifying the safe method of use and all associated precautions to be implemented.

BKSCTJV will ensure that material safety data sheets are available and hazard identification labels will be properly affixed to all storage containers.

Should workers be involved in the use, handling of, or exposure to hazardous substances, then the relevant information, training and proper personal protective equipment shall be provided accordingly.

The quantities of hazardous substances on the Site shall be kept to a minimum as far as is possible and practicable.

Strictly follow the guidelines provided by the material suppliers or the relevant Material Safety Data Sheet for use and storage of the hazardous material.

4.5 Promotion and Training on Waste Management

4.5.1 Environmental Training

The EO and ES are responsible for carrying out the environmental training on waste management. They will analyze the problem and the detailed need of waste management training for the employees, consult with their departmental managers, and seek advice from the senior management.

The environmental training plan shall be reviewed quarterly by the EO in consultation with the Site Agent to identify and review training needs of the construction activities and to introduce new training program.

Site Specific Induction Training

The site Specific Environmental Induction Training provided by the EO covering but not limited to environmental and waste management including the implementation of waste management plan, handling of special waste and trip ticket system will be conducted for all site staff and workers employed for the Works or in connection with the Contract. Refresher training for the aforesaid area will be provided by the EO in every six months.

The training content should also cover the subjects such as organization structure, duties and responsibilities, measures, targets, in-house rules and regulations.

Tool box talk

Workers will receive environmental toolbox talks conducted by the respective front line Supervisors, EO/ES. The toolbox talks will focus on different trade and activities and enhance environmental awareness amongst operatives.

4.5.2 Environmental Promotion

Environmental information

- Display and update appropriate Environmental Signs/Posters at the site entrances and relative works area.
- Environmental news, agenda and minutes of Site Safety Environmental Committee Meeting, emergency, environmental promotion activities will display on site safety bulletin board
- Daily Morning Briefing is an individual workforce gathering in the morning assembly prior to work start to be conducted by the supervisor or gangers. Daily morning briefing will deliver environmental messages, environmental hazards identified and environmental pollution precaution measures to workforce.

Environmental Award

The "Safety and Environmental Star – Worker Award" would be held to promote safety and environmental awareness of individual worker. The performance of the worker on waste management would also be reviewed. The assessment criteria will be based on observation by EO/ES, area foremen report and recommendation from their direct employer and written assessment of safety and environmental knowledge.

5.0 TRIP TICKET SYSTEM AND RECORDING

5.1 Trip Ticket System (TTS)

For the transportation of public fill and C&DM, BKSCTJV will implement and comply with the requirements of the Trip-Ticket System (TTS) stipulated in Development Bureau Technical Circular (Works) No. 6/2010. A standalone Site Management Plan for implementation of TTS will be established which should be reviewed and updated on monthly basis.

The manpower resources for TTS

(1) A senior staff member (with at least two-year experience in site management) fully responsible for implementing and overseeing the operation of the TTS; and

(2) Experienced person(s) to man each exit from the Site for the purpose of checking every truck carrying C&DM leaving the Site so as to ensure that the truck driver bears a duly completed signed and stamped Disposal Delivery Form (DDF).

General Procedure of the TTS

The procedures for implementation of the TTS are as follows:-

(1) BKSCTJV will establish site procedures to ensure that each truckload of C&DM leaving the Site will bear a duly completed CHIT / Disposal Delivery Form (DDF). BKSCTJV will also establish a mechanism to ensure timely retrieval of the CHIT / DDF and/or receipt from the disposal grounds. The person(s) who man the exit(s) shall record the CHIT/ DDF no., the vehicle registration mark and the departure time of every truck carrying C&DMs leaving the Site.

(2) The CHIT shall be used for disposal of C&DM at a prescribed facility as defined under the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N) (hereinafter referred to as "prescribed facility") and the Particular Specification, Sample of the CHIT is given in ***Appendix D***.

(3) Where the inert C&DM is delivered to other sites for reuse as approved by the Project Manager, a special designed ticket (i.e. similar to the Chit) will be deployed and the mechanism and procedure is also similar to the Chit system.

The procedures of the TTS (for prescribed facility - NENT)

a) For each truckload of C&DMs leaving the Site, all truck drivers must bear a duly completed CHIT.

b) A daily record of disposal of C&DMs shall be maintained from the Site including CHIT numbers, vehicle registration marks, drivers' particulars, approximate volume, C&DMs type, designated disposal ground, departure time from the Site, actual disposal ground and arrival time at disposal ground. The appointed designated person(s) shall complete Part I of the Daily Record Summary (DRS) in duplicate and inform the Engineer's staff before departure of the vehicle.

c) The Engineer's staff shall sign Part I of the DRS before departure of the trucks, or to suit site operations at other time to be agreed between the Project Manager and BKSCTJV.

d) The truck shall proceed to the disposal ground as stipulated in the Contract. If the C&DM accord with the acceptance criteria, disposal of the materials will be permitted and the facility operator will give the Contractor's truck driver a Transaction Record Slip and stamp the CHIT. When the disposal of waste is not permitted (rejected by facility operator due to overloading or non-compliance with relevant acceptance criteria, closure of facility etc.), the truck will go back to the construction site and the Contractor will sort out an appropriate mitigation measure.

e) The information recorded in the DRS shall be checked against available information including site records/register and data from EPD's website [http://www.epd.gov.hk/epd/misc/cdm/scheme.htm#j.].

f) Site Engineer shall complete Part 2 of the DRS form for submission to the Project Manager within 1 working day after the records are posted at the EPD web-site.

g) Where an irregularity is observed or where requested by the Project Manager under special circumstances (e.g. a CHIT has been issued but there is no disposal record at the disposal ground), BKSCTJV shall submit to the Project Manager 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 Project Manager 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 Engineer.

Informing the Truck Drivers

BKSCTJV will write to all truck drivers whom he has engaged for removal of C&DMs from the Site and draw their attention to the following particular points:

(a) Each truck carrying C&DM leaving the Site for a disposal ground must bear a duly completed and stamped DDF, irrespective of the location and nature of the disposal ground.

(b) The C&DM must be disposed of at the disposal grounds as stipulated in the DDF.

(c) What constitutes an improper disposal and that the Public Fill Committee (PFC) will consider revoking the Dumping License from the holder of the offending trucks.

(d) Truck drivers must bear a valid Dumping License which he can apply from the Civil Engineering and Development Department (CEDD).

(e) The Contractor will inform the truck drivers that all dump trucks engaged on site shall be equipped with GPS or equivalent automatic system for real time tracking and monitoring of their travel routings and parking locations to prohibit illegal dumping and landfilling of C&D materials.

A sample of the “CHIT” and Daily Summary Table (DRS) is given at **Appendix D**.

5.2 Waste Recording System

BKSCTJV will record the quantities of C&DM generated each month, using the monthly summary “Waste Flow Table” (WFT) BKSCTJV shall complete the monthly summary WFT.

The following records will be kept by BKSCTJV for inspection and reporting as necessary by the Environmental Team or the Project Manager:

- Waste disposal permits or licenses
- Record of trip tickets for C&DM disposed off-site

- Record of trip tickets for chemical waste disposed off-site
- Record of non-compliance of the WMP
- Record of corrective action taken to rectify any non-compliance
- Record of the admission tickets usage.

BKSCTJV will provide, operate and maintain a video recording system at each vehicular exit/entrance with gate(s) installed with the following essential features to record all trucks leaving the Site:

- The video cameras used in the system will be of high resolution, lowlight and colour type
- Power back up shall be provided to cater for accidental breakdown of the power supply to the system
- Videos captured by the system will be recorded continuously without break except with the agreement of the SA, or in month during which where is no disposal of C&DM off the Site for the entire month
- Videos will be captured in a format acceptable to the Engineer Representative
- The registration mark of each vehicle leaving the site will be recorded
- The loading condition of dump trucks including empty trucks will be captured
- Securely protect the videos cameras from being damaged
- Provide the software and hardware for capturing the vehicle registration mark, and the time and date for the SA's immediate taking and viewing of photograph of every truck leaving the Site and viewing the recorded videos
- Keep the videos record for at least 60 days and the photographs until such time as instructed by the Engineer Representative
- Post sufficient notices at conspicuous positions to notify the workers, drivers and staff about the purpose of the video recording system in accordance with data protection principles set out in the Personal Data (Privacy) Ordinance (Cap. 486).

5.3 GPS

According to the Environmental Permit EP-519/2016 General Conditions 2.24 (vi-vii), all dump trucks engaged on site will be equipped with Global Positioning System (GPS) or equivalent automatic system for real time tracking and monitoring (RTTM) of their travel routings and parking locations to prohibit illegal dumping and landfilling of C&D materials.

The GPS installed on dump trucks will transmit self-monitoring data direct from the truck to the control center through GPRS mobile communication network.

The RTTM system allows the Contractor and the users to carry out round-the-clock monitoring of the movement of dump trucks by accessing to the designated website. This will ensure that any irregularities can be immediately identified and rectified without delay.

The RTTM system employs hot standby configuration. Two identical servers are used to handle and store data reported from GPS. Application software, such as web user interface, is provided by a standalone web server. The web user interface enables users to view the data record and analyze the data records.

The system is connected to the internet via two separate broadband networks. Each network is protected by network firewall. The firewall prevents unauthorized access to the system and route connection requests to the appropriate servers.

Dump trucks transporting C&D materials under NL/2017/03 shall not access "Tung Chung Road" in any case. It can be monitored by the GPS system.

In the event of any irregularities or non-compliance, the server will generate e-mail to inform the relevant parties (e.g. PM, ET, IEC and the Contractor).

Environmental Officer (EO) / Environmental Supervisor (ES) will analyze the data including the travel routings, parking locations in daily base. Restricted areas (e.g. Tung Chung Road) can be set by the RTTM system and signal (by email) will send to the EO, ES or the default users immediately once any irregularities / non-compliance are triggered. The EO/ ES will also link up the GPS data with the Trip Ticket System by merging the corresponding chit number, vehicle number etc.

5.4 Illegal Dumping and Landfilling of C&D Materials

Surveillance Team will conduct regular site inspections to identify and report immediately to IEC, the Project Manager and the Director of Environmental Protection through email on suspected illegal dumping and landfilling of C&D materials outside the designated disposal location.

6.0 EVENT CONTINGENCY PLAN FOR NON-COMPLIANCE AND COMPLAINT

6.1 Handling Procedure for Non-compliance and Complaint

A Contingency Group will be set up to respond to non-compliance and complaints on waste management and other environmental issues.

In the Event of Non-Compliance:

1. If any non-compliance is observed during site inspection by AECOM or CEDD, the EO/ES will raise a Corrective & Preventive Action Report (CPAR) to SA;
2. The PM will notify and liaise with the SA of non-compliance to obtain proposals and a response to the CPAR;
3. The EO will notify SA if the non-compliance is an exceedance of the stipulated requirements. In such cases, a copy of the CPAR will be issued to the AECOM as a Notification of Non-compliance (NNC);
4. After receipt of the NNC, the SA will propose corrective actions for the non-compliance in line with the JV's CPAR and implement the proposed corrective actions once they have been agreed by AECOM;
5. If the implementation of the corrective actions is satisfactory, the non-compliance record (CPAR) will be closed accordingly;
6. The SA/EO will propose preventive actions within 3 working days if it has not been already included within the JV's response after the closure of the non-compliance records; and
7. The SA/EO will record CPARs accordingly in the CPAR log sheet.
8. Environmental Team and Project Manager should be notified immediately in case of the event of non-compliance.

In the Event of Complaint

1. Complaint related to environmental management will be collected by the EO/ES. The complaint

will be referred to the SA for carrying out complaint investigation procedures;

2. The SA will log complaint and date of receipt onto the complaint database and inform the SM and the AECOM immediately within 2 working day;
3. Within 2 working day after receipt of the notification of compliant, the EO/ES will identify the source of the problem and provide the AECOM relevant works site information, e.g. types and locations of construction works;
4. If the complaint is valid and due to project works, the EO/ES will liaise with SA to propose corrective actions/mitigation measures to AECOM. The SA will implement the mitigation measures once they have been agreed;
5. The EO/ES will report the investigation results and subsequent actions taken, to the AECOM after the implementation of mitigation measures; and
6. If no further comments or complaints are received from the complainant within 20 days after responding to the complainant, close the complaint record.
7. Environmental Team and Project Manager should be notified immediately in case of the event of complaint.

Follow-up actions to be taken by the Contractor and Dump Truck Drivers for Committing Suspected Offences relating to Illegal Dumping and Landfilling of C&D materials

1. The dump truck drivers will be asked to explain for the suspected offences relating to illegal dumping and landfilling of C&D materials. An investigation report will then be prepared by the EO and submit to AECOM within 2 working days.
2. The Contractor will discuss with AECOM for the follow up actions (e.g. warning letter, cease operation, etc.) if required.

7.0 AUDITING PROPOSAL

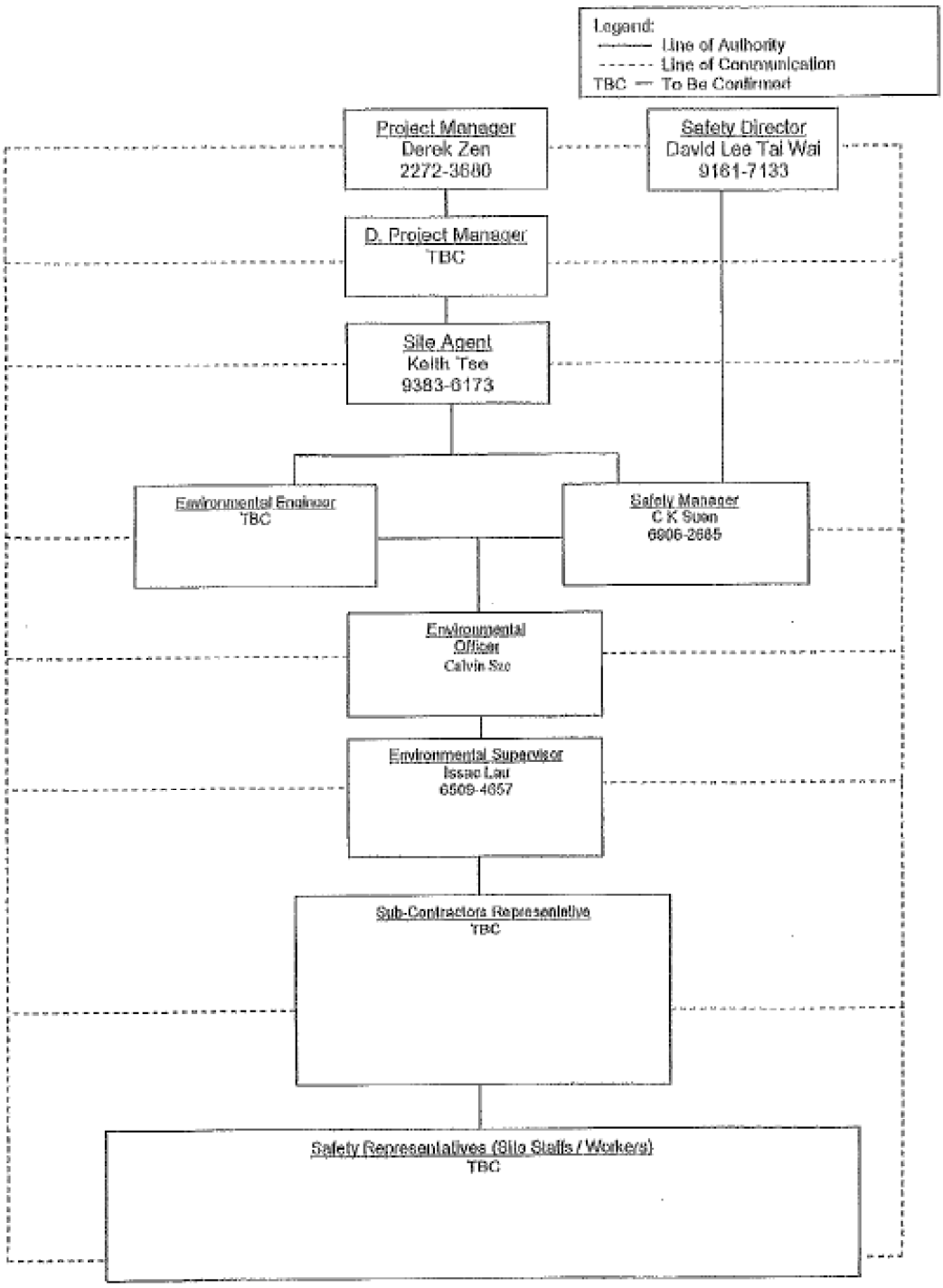
General Foreman and EO/ES will conduct weekly site inspections to ensure this WMP is properly followed. In addition to internal audit will be performed to review the effectiveness on the implementation of this WMP:-

- Internal audits will be performed in line with the WMP by an environmental auditor with well experienced personnel
- Audits will be planned to by Environmental Officer determine when and where to audits which are scheduled on the basis of the status and importance of the activity
- Audit comprises of document review, site inspection and discussion with responsible person, so as to address all key elements of the WMP and implementation of procedures and maintenance of records
- Environmental and Safety Officer will monitor the status of completion of the follow-up action programme after internal auditing
- Result of audits will be taken into account for management review for reviewing the implementation status and the effectiveness of the audit system

The waste (generated from construction activities) handling procedures documented in this stand-alone WMP will be incorporated into the Environmental Management Plan and the effectiveness of waste management and implementation of trip ticket system will be discussed and reviewed during the SSEMC and SSEC meetings on monthly basis.

APPENDIX A - PROJECT ENVIRONMENTAL MANAGEMENT ORGANIZATION CHART FOR WASTE MANAGEMENT

Site Environmental Organization Chart



Late updated : 4 Jan 2018

Next Review : Feb 2018

APPENDIX B - C&DM DISPOSAL PROGRAMME

Name of Department: CEDD

Name of Contract: Tung Chung New Town Extension – Reclamation and Advance Works Contract No. : NL/2017/03

C&D Materials Disposal Programme (Updated to March 2018)

Month	Programmed Quantities of C&D Materials Generated					Programmed Quantities of C&D Materials Generated					
	Hard Rock and Broken Concrete	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse	Special Waste
	[in '000m³]	[in '000m³]	[in '000m³]	[in '000m³]	[in '000m³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000ton]
Jan 2018(Forecast)	0	0	0	0	0	0	0	0	0	50	0
Feb 2018(Forecast)	0	0	0	0	0	0	0	0	0	50	0
Mar 2018(Forecast)	0	0	0	0	0	0	0	0	0	50	0
Apr 2018(Forecast)	0	0	0	0	0	0	0	0	0	50	0
May 2018(Forecast)	0	0	0	0	0	0	0	0	0	50	0
Jun 2018(Forecast)	0	0	0	0	0	0	0	0	0	50	0
SUB-TOTAL	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	300.00	0.00
Jul 2018(Forecast)	0	0	0	0	0	0	0	0	0	80	0
Aug 2018(Forecast)	0	0	0	0	0	0	0	0	0	80	0
Sep 2018(Forecast)	0	0	0	0	0	0	0	0	0	80	0
Oct 2018(Forecast)	0	0	0	0	0	0	0	0	0	80	0
Nov 2018(Forecast)	0	0	0	0	0	0	0	0	0	80	0
Dec 2018(Forecast)	0	0	0	0	0	0	0	0	0	80	0
YEAR TOTAL	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	780.00	0.00
Jan 2019(Forecast)	0	0	0	0	0	0	0	0	0	100	0
Feb 2019(Forecast)	0	0	0	0	0	0	0	0	0	100	0
Mar 2019(Forecast)	0	0	0	0	0	0	0	0	0	100	0
Apr 2019(Forecast)	0	0	0	0	0	0	0	0	0	100	0
May 2019(Forecast)	0	0	0	0	0	0	0	0	0	100	0
Jun 2019(Forecast)	0	0	0	0	0	0	0	0	0	100	0
SUB-TOTAL	0.00	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	600.00	0.00
Initial Estimated (in '000tons)											0
Initial Estimated (in '000m³)	0	0	0	0	0	0	0	0	0	0	
Forecast Total (in '000tons)											0
Forecast Total (in '000m³)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1380.00	0.00

Note:

The reasons of quantity change for "disposal as public fill" are as follows.

1. Unforeseen soft spot was found during construction, extra excavation for replacement is required.
2. Change of the size for permanent structures.
3. The conversion factor of densities of rock and soil is 2.5 tonnes/m³ and 2.0 tonnes/m³ respectively.
4. The conversion factor of densities of imported rock and soil is 2.0 tonnes/m³ and 1.8 tonnes/m³ respectively.

APPENDIX C - MONTHLY SUMMARY OF WASTE FLOW TABLE AND SUMMARY TABLE FOR USE OF TIMBER IN TEMPORARY WORKS

Name of Department: CEDD

Contract No.: NL/2017/03

Contract Name: Tung Chung New Town Extension – Reclamation and Advance Works

Monthly Summary Waste Flow Table for 2018

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete (see Note 3)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in'000 kg)	(in'000 kg)	(in'000 kg)	(in'000 kg)	(in '000m³)
Jan											
Feb											
Mar											
Apr											
May											
Jun											
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total											

Notes: (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

(2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

(3) Broken concrete for recycling into aggregates.

Appendix 1.34A

SUMMARY TABLE FOR USE OF TIMBER IN TEMPORARY WORKS

(PS CLAUSE 1.115(17))

Contract No.: _____

Contract Title: _____

Item No.	Description of Works Process or Activity [see note (a) below]	Justifications for Using Timber in Temporary Construction Works	Est. Quantities of Timber Used (m^3)	Actual Quantities used (m^3)	Remarks
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
		Total Estimated Quantity of Timber Used			

Notes: (a) The *Contractor* shall list out all the work items requiring timber for use in temporary construction works. Several minor work items may be grouped into one for ease of updating.

(b) The summary table shall be submitted to the *Supervisor* monthly together with the Waste Flow Table for review and monitoring in accordance with PS clause 25.24(11).

APPENDIX D - SAMPLE OF CHIT & DAILY SUMMARY RECORD

入帳票編號:
Chit No.:

選擇「✓」一個訂明設施:
Tick (✓) One Prescribed Facility:

- ☐ 堆填區 Landfills
- ☐ 篩選分類設施 Sorting Facilities
- ☐ 公眾填料接收設施 Public Fill Reception Facilities
- ☐ 離島廢物轉運設施 Outlying Islands Transfer Facilities

車牌號碼 Vehicle Registration Mark:

使用日期:
Date of Use:

簽發人:
Issued by:

建築廢物產生地點:
Construction Waste Generated Site:

帳戶編號:
Account No.:

甲部份：由帳戶戶主保留
Part A: retained by Account-holder

入帳票編號:
Chit No.:

選擇「✓」一個訂明設施:
Tick (✓) One Prescribed Facility:

- ☐ 堆填區 Landfills
- ☐ 篩選分類設施 Sorting Facilities
- ☐ 公眾填料接收設施 Public Fill Reception Facilities
- ☐ 離島廢物轉運設施 Outlying Islands Transfer Facilities

車牌號碼 Vehicle Registration Mark:

使用日期:
Date of Use:

簽發人:
Issued by:

帳戶名稱:
Name of the Account-holder:

帳戶編號:
Account No.:

乙部份：由廢物運輸商保留
Part B: retained by Waste Hauler

香港法例第354章廢物處置條例
廢物處置(建築廢物處置收費)規例
Waste Disposal Ordinance (Chapter 354)
Waste Disposal (Charges for Disposal of Construction Waste) Regulation

載運入帳票
CHIT

車牌號碼:
Vehicle Registration Mark:

有效期至:
Valid Until:

建築廢物產生地點:
Construction Waste Generated Site:

帳戶名稱:
Name of the Account-holder:

丙部份：由政府保留
Part C: retained by Government

E 199279

"Daily Record Summary" to record daily disposal of construction & demolition (C&D) materials from the *Site
"每日運載記錄撮要" 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[1] 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[2] 甲部 ←→ Part 2[3] 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 : _____

[1] 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

[2] 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

[3] 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撮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

Contract No. NL/2017/03

Tung Chung New Town Extension – Reclamation and Advance Works

CHIT Register

Facility 設施	Date of transaction 交易日期	Vehicle No. 車輛號碼	Account No. 帳戶號碼	Chit / DDFNo. 入帳票號碼	Time-In 進入時間	Time-out 離開時間	Waste depth (meter) 廢物深度 (米)	Weight-In (tonne) 入磅重量 (公噸)	Weight-out (tonne) 出磅重量 (公噸)	Net weight (tonne) 淨重量 (公噸)

APPENDIX E - MITIGATION MEASURES

Mitigation Measures

1 Construction Phase

1.1 The mitigation measures for construction phase are recommended based on the waste management hierarchy principles. Recommendations of good site practices, waste reduction measures as well as the waste transportation, storage and collection are described below.

Good Site Practices

1.2 Adverse waste management implications are not expected, provided that good site practices are strictly implemented. The following good site practices are recommended throughout the construction activities:

- nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;
- training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling;
- provision of sufficient waste disposal points and regular collection for disposal;
- imposition of penalty system on Contractors' improper behaviours when illegal dumping and landfilling outside their respective construction sites, i.e. on nearby farmlands and riverbanks, are reported;
- appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;
- regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and
- the contractor should prepare a Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) in accordance with the ETWB TC(W) No. 19/2005 for construction phase. The EMP should be submitted to the Engineer for approval. Mitigation measures proposed in the EIA Report and the EM&A Manual should be adopted.

Waste Reduction Measures

1.3 Amount of waste generation can be significant reduced through good management and control. Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction:

- segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;
- proper storage and site practices to minimize the potential for damage and contamination of construction materials;
- plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste;
- sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.);

- provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.

1.4 In addition to the above measures, specific mitigation measures are recommended for the specific waste types so as to minimize environmental impacts during handling, transportation and disposal of waste.

Storage, Collection and Transportation of Waste

1.5 Storage of waste on site may induce adverse environmental implications if not properly managed. The following recommendation should be implemented to minimize the impacts:

- waste such as soil should be handled and stored well to ensure secure containment; and
- depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions.

1.6 The collection and transportation of waste from works area to respective disposal sites may also induce adverse environmental impacts if not properly managed. The following recommendation should be implemented to minimize the impacts:

- remove waste in timely manner;
- employ the trucks with cover or enclosed containers for waste transportation;
- obtain relevant waste disposal permits from the appropriate authorities; and
- disposal of waste should be done at licensed waste disposal facilities.

1.7 In addition to the above measures, other specific mitigation measures on handling the excavated and C&D materials, chemical waste and materials generated from construction phase are recommended in the following subsections.

C&D Materials

1.8 Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at Public Fill Reception Facilities areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials:

- maintain temporary stockpiles and reuse excavated fill material for backfilling;
- carry out on-site sorting;
- make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and
- implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified, so as to avoid the illegal dumping and landfilling of C&D materials on farmlands/ riverbanks at TCW.

1.9 Details of the recommended on-site sorting and reuse of C&D materials is given below:

On-site Sorting of C&D Materials

1.10 All C&D materials arising from the construction would be sorted on-site to recover the inert C&D materials and reusable and recyclable materials prior to disposal off-site. Non-inert portion of C&D materials should also be reused whenever possible and be disposed of at landfills as a last resort.

1.11 The Contractor would be responsible for devising a system to work for on-site sorting of C&D materials and promptly remove all sorted and processed material arising from the construction activities to minimize temporary stocking on-site. It is recommended that the system should include the identification of the source of generation, estimated quantity, arrangement for on-site sorting and/ or collection, temporary storage areas, and frequency of collection by recycling Contractors or frequency of removal off-site.

Reuse of C&D Materials

1.12 Based on the construction programme, all inert C&D materials would be best reused on-site during the whole construction phase to minimize offsite disposal of inert C&D materials. Should there be any surpluses AHM necessary for off-site disposal, it is recommended to be disposed at public fill reception facilities.

Use of Standard Formwork and Planning of Construction Materials Purchasing

1.13 Standard formwork should also be used as far as practicable in order to minimize the arising of C&D waste. The use of more durable formwork (e.g. metal hoarding) or plastic facing should be encouraged in order to enhance the possibility of recycling. The purchasing of construction materials should be carefully planned in order to avoid over ordering and wastage.

Provision of Wheel Wash Facilities

1.14 Wheel wash facilities have to be provided at the site entrance before the trucks leaving the works area. Dust disturbance due to the trucks transportation to the public road network could be minimized by such arrangement.

Excavated Contaminated Soil and Marine Sediments

1.15 It is considered unlikely that contaminated land issues, if any subject to site investigation, would be a concern during either the construction or the operational of the proposed development as remediation on contaminated area would be carried out prior to construction. However, as a precaution, it is recommended that standard good site practices should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater.

1.16 Reference has been made to the sediment testing results. Possible mitigation measures to handle the contaminated/ uncontaminated sediment are summarized as follows.

- All construction plant and equipment shall be designed and maintained to minimize the risk of silt, sediments, contaminants or other pollutants being released into the water column or deposited in the locations other than designated location.
- All vessels shall be sized such that adequate draft is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.
- Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave

action.

1.17 The Contractors shall monitor all vessels transporting the excavated sediment to ensure that no dumping outside the approved location takes place. The Contractor shall keep and produce logs and other records to demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the Engineers.

- The Contractors shall comply with the conditions in the dumping permit issued under the Dumping at Sea Ordinance.
- All bottom dumping vessels (hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of material.
- The excavated sediment shall be placed into the disposal pit by bottom dumping.
- Contaminated marine mud shall be transported by split barge of not less than 750m3 capacity and capable of rapid opening and discharge at the disposal site.
- Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Sediment adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site.
- For Type 3 special disposal treatment, sealing of contaminant with geosynthetic containment before dropping into designated mud pit would be a possible arrangement. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, 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 at the disposal site, thereby fulfilling the requirements for fully confined mud disposal. The technology is readily available for the manufacture of the geosynthetic containers to the project-specific requirements. Similar disposal methods have been used for projects in Europe, the USA and Japan and the issues of fill retention by the geosynthetic fabrics, possible rupture of the containers and sediment loss due to impact of the container on the seabed have been addressed.
- Moreover, the geosynthetic containment has also been proposed for Type 3 disposal in the EIA Study under Wan Chai Development Phase II and Central-Wan Chai Bypass (WDII) (EIA 141/2007). Several field trials had been undertaken under WDII – Design and Construction to demonstrate the feasibility on the use of the geosynthetic containment. Report on the field trials concluded that disposal by sealing sediments in geosynthetic containers and dropping these containers into the contaminated mud pits at East Sha Chau has been shown to be a successful and viable disposal method. The use of geosynthetic containment for special disposal was considered to be an effective system with negligible loss of contaminants to the marine environment during disposal.

Chemical Waste

1.18 For those processes which generated chemical waste, it may be possible to find alternatives to eliminate the use of chemicals, to reduce the generation quantities or to select a chemical type of less impact on environment, health and safety as far as possible.

1.19 If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the CWTC, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.

General Refuse

1.20 General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a daily basis. It is expected that such arrangements would minimize potential environmental impacts.

Floating Refuse

1.21 As mentioned in **Section 7.3.2**, approximately 11.5m3 of floating refuse might be accumulated along the seawall and would be collected by future Contractor of the Project. Nevertheless, with proper seawall design and regular checking and cleaning of floating refuse, no adverse impacts are anticipated.

APPENDIX F - IMPLEMENTATION SCHEDULE OF MAJOR WASTE MANAGEMENT MEASURES

Implementation Schedule of Major Waste Mitigation Measures

EIA Ref,	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage
S7.4.1	<u>Good Site Practices</u> The following good site practices are recommended throughout the construction activities: • nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; • provision of sufficient waste disposal points and regular collection for disposal; • imposition of penalty system on Contractors' improper behaviours when illegal dumping and landfilling outside their respective construction sites, i.e. on nearby farmlands and riverbanks, are reported; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • the contractor should prepare a Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) in accordance with the ETWB TC(W) No. 19/2005 for construction phase. The EMP should be submitted to the Engineer for approval. Mitigation measures proposed in the EIA Report and the EM&A Manual should be adopted.	Minimize waste generation during construction	Contractor	All construction sites	Construction stage

EIA Ref,	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage
S7.4.1	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; • proper storage and site practices to minimize the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); • provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.	Reduce waste generation	Contractor	All construction sites	Construction stage
S7.4.1	<u>Storage of Waste</u> The following recommendation should be implemented to minimize the impacts: • waste such as soil should be handled and stored well to ensure secure containment; and • Depends on actual site activities, certain locations within the site area would be used for storage of waste to enhance reuse. However, there would not be any designated location for storage of waste, and the storage locations would need to be adjusted to suite actual site conditions;	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage

EIA Ref,	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage
S7.4.1	Collection and Transportation of Waste The following recommendation should be implemented to minimize the impacts: • remove waste in timely manner; • employ the trucks with cover or enclosed containers for waste transportation; • obtain relevant waste disposal permits from the appropriate authorities; and • disposal of waste should be done at licensed waste disposal facilities.	Minimize waste impacts from storage	Contractor	All construction sites	Construction stage
S7.4.1	Excavated and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public fill reception facilities or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified, so as to avoid the illegal dumping and landfilling of C&D materials on farmlands/ riverbanks at TCW; The recommended C&D materials handling should include:	Minimize waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction stage

EIA Ref,	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage
	■ On-site sorting of C&D materials ■ Reuse of C&D materials ■ Use of Standard Formwork and Planning of Construction Materials purchasing				
S7.4.1	Provision of Wheel Wash Facilities Wheel wash facilities have to be provided at the site entrance before the trucks leaving the works area. Dust disturbance due to the trucks transportation to the public road network could be minimized by such arrangement.	Minimize waste impacts from trucks transportation	Contractor	All construction sites	Construction stage
S7.4.1	Excavated Contaminated Soil As a precaution, it is recommended that standard good site practice should be implemented during the construction phase to minimize any potential exposure to contaminated soils or groundwater.	Remediate contaminated soil	Contractor	All construction Sites where applicable	Construction stage
S7.4.1	Excavated Marine Sediments Reference has been made to the sediment testing results. Possible mitigation measures to handle the contaminated/ uncontaminated sediment are summarized as follows. ■ All construction plant and equipment shall be designed and maintained to minimise the risk of silt, sediments, contaminants or other pollutants being released into the water column or deposited in the locations other than designated location. ■ All vessels shall be sized such that adequate draft is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.	Handle excavated sediment	Contractor	All construction Sites where applicable	Construction stage

EIA Ref,	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage
	■ Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.				
S7.4.1	Dumping of excavated sediment ■ Keep and produce logs and other records to demonstrate compliance and ensure journeys are consistent with designated locations ■ Comply with the conditions in the dumping permit. ■ All bottom dumping vessels (hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of material. ■ The excavated sediment shall be placed into the disposal pit by bottom dumping. ■ Contaminated marine mud shall be transported by split barge of not less than 750m3 capacity and capable of rapid opening and discharge at the disposal site. ■ Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Sediment adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site. ■ For Type 3 special disposal treatment, sealing of contaminant with geosynthetic containment before dropping into designated mud pit. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, 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 at the disposal site, thereby fulfilling the requirements for fully confined mud disposal.	Handle excavated sediment	Contractor	All construction Sites where applicable	Construction stage

EIA Ref,	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage
S7.4.1	Chemical Waste If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage
S7.4.1	General Refuse ■ General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. ■ Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. ■ A reputable waste collector should be employed to remove general refuse on a daily basis.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage
S7.4.1	Floating Refuse accumulated along the seawall The floating refuse along seawall should be collected to avoid accumulation. In addition, proper seawall design should be employed, and regular checking and cleaning of floating refuse should be implemented.	Control floating refuse and ensure proper disposal	Contractor	Construction sites along seawall	Construction stage

APPENDIX G - METHOD STATEMENT FOR STOCKPILING AND TRANSPORTATION OF EXCAVATED MATERIALS AND OTHER CONSTRUCTION WASTES

CEDD CONTRACT NO. NL/2017/03
TUNG CHUNG NEW EXTENTION – RECLAMATION AND ADVANCE WORKS

Method Statement for Stockpiling and Transportation of Excavated of Excavated Materials and Other Construction Waste

Contract No. NL/2017/03

Tung Chung New Town Extension – Reclamation and Advance Works

Revision: A

Date: 7 May 2018

1. Scope of Work

- Stockpiling
- Transportation of Excavated Materials
- Transportation of Other Construction Waste

2. Construction Sequence of Works

2.1 Stockpiling:

- The excavated material generated from excavation will consist of soil and rock materials which will, as far as practicable, be reused on-site for the backfilling works.
- Excavated material will also be generated from foundation work, underground services works and even any temporary works for excavation. Any surplus excavated material will be temporary stored in a designated area and would be engaged for backfilling.
- The spoil will be stored in 2 m high maximum and the slope surface will be kept in 1:2.
- When amber rainstorm signal or higher is hoisted, protective measures would be provided on slope surface against rainwater such as covered with tarpaulin or plastic sheet, erecting the temporary shelters, ddditional of pumps to drive out rainwater, etc..

2.2 Transportation of Excavated Materials

- Excessive excavated material as well as surcharge will be transported to other sites for reuse as approved by the Project Manager; whilst the ET, IEC and EPD would be informed.
- The excavated material will be sprayed with water when it is dry. The aim is to control dust in work area.
- Dump truck loaded with excavated materials would be covered by tarpaulin sheeting or mechanical cover in order to prevent dust emission.
- For the transportation of excavated materials, BKSCTJV will implement and comply with the requirements of the Trip-Ticket System (TTS) stipulated in Development Bureau Technical Circular (Works) No. 6/2010. A standalone Site Management Plan for implementation of TTS will be established which should be reviewed and updated on monthly basis.
-

2.3 Transportation of Other Construction Waste

- General refuse and C&DM
  - Un-recyclable, non-inert C&DM, i.e. C&DM, floating refuse and general refuse, which mainly consists of food waste, aluminum cans and waste paper, will be generated from construction activities, workers and the site office.

  - The C&DM will be temporarily stored and containers or skips will be provided for temporary waste storage to prevent odour, pest and windblown litter.

  - Office waste will be reduced through the recycling of paper. Sacks for waste paper and baskets for reusable papers will be provided in the Site office. General refuse including food and domestic waste will be stored in enclosed bins or compaction units separate from the construction and chemical wastes. Lunch boxes, plastic bottles, containers, plastic sheets and foam will be sorted and stored in separately labeled bins for subsequent recycling. Reputable recycle contractors will be employed to collect recyclable materials. The amount of waste to be recycled will be recorded, controlled and monitored through the maintenance of WFT.

  - The general refuse and the un-recyclable C&DM will be collected and disposed of on a regular basis to minimize the likelihood of odour, pests and litter. They will be transported and disposed of by a licensed waste hauler. A trip-ticket system to trace the transportation and destination of the waste will be implemented and the burning of refuse on the site will be strictly prohibited.

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

  - Chemical wastes are likely to be generated during maintenance of plant and equipment and these may include spent filter cartridges containing heavy metals, asbestos waste, spent batteries, used mechanical oil, cleaning fluid, spent solvents, lubricating oil and

paints and paint containers.

- All chemical wastes generated on site will be stored and labeled in accordance with the Code of Practice on the Packaging, Labeling and Storage of Chemical Waste published by EPD. All workers involved in the handling of chemical waste will be trained properly and will be provided with appropriate protective clothing.

- The sorting and segregation of chemical waste will be carried out on site to ensure the waste is appropriately handled, labeled and treated prior to disposal off-site. The recoverable chemical wastes such as oil, paint and solvent, will be separated from other chemical wastes and an EPD licensed chemical waste collector will be employed to collect the chemical waste.

- Chemical waste will be stored at designated storage areas in accordance with the Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The containers to be used for the storage of chemical waste will:
  - be suitable for the substance they are holding, resistant to corrosion and be maintained in a good condition and kept securely closed;
  - have a capacity of less than 450L unless the specifications have been approved by the EPD; and,
  - display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.

- The storage area for chemical waste will:
  - be clearly labeled and used solely for the storage of chemical waste;
  - be enclosed on at least three sides;
  - have an impermeable floor and be bunded to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is greater;
  - have adequate ventilation;

- be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary); and
- be arranged so that incompatible materials are adequately separated.

➢ A licensed waste collector will be employed to deliver the chemical waste to legal treatment facilities. Waste dry battery (road flash light) and Waste Oil will be transported to Dunwell Industrial (Holdings) Limited for handling purpose. The trip-ticket system will be strictly implemented to ensure the chemical waste is transported by and to proper agents. Trip tickets issued for every chemical waste collection will be retained and filed for future reference and inspection.