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HATS DIVISION**

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BY HAND

Your ref

Our ref 24888/(DC/2009/17)/M45/120/0004

Date 8 December 2010

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Environmental Protection Department
Environmental Assessment Division
Regional Assessment Group
27/F Southern Centre
130 Hennessy Road
Wanchai
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For the attention of Mr Charles Pang

Dear Sirs

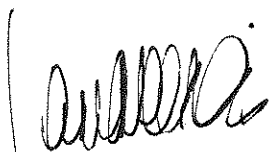
**Contract No. DC/2009/17
Harbour Area Treatment Scheme Stage 2A
Upgrading Works at Stonecutters Island Sewage Treatment Works -
Sludge Dewatering Facilities
Waste Management Plan (Rev. 0)**

In accordance with Section 9.152 of the EIA Report for Harbour Area Treatment Scheme (HATS) Stage 2A, please find enclosed three copies of the Waste Management Plan (Rev. 0) for the captioned Contract for your information and retention.

Please note that this Waste Management Plan (Rev. 0) has been verified by IEC and a copy of the IEC's verification letter is enclosed for your reference.

Should you have any queries, please feel free to contact our Resident Engineer, Ms Natalie Kwok at 6794-8844.

Yours faithfully



Ted Y F Tang
PRE / Engineer's Representative

Encl.

cc	Mr W L Chan	- E5/HATS, DSD	- w/e
	Mr S Y Chan	- The Engineer, Ove Arup & Partners Hong Kong Ltd (Arup)	- w/o
	Dr Anne F Kerr	- IEC (Mott MacDonald)	- w/e
	Mr Chris Leung	- CSAJV	- w/e
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3 December 2010
By Fax (2833 9162) and Post

Attn: Mr. Danny Tang

Dear Sir,

**Agreement No. CE 8/2009(EP)
Harbour Area Treatment Scheme (HATS) Stage 2A
Independent Environmental Checker for Construction Phase – Investigation**

**Contract no. DC/2009/17
Upgrading Works at Stonecutters Island Sewage Treatment Works – Sludge
Dewatering Facilities
Waste Management Plan (Rev. 0)**

I refer to the waste management plan (rev. 0) received on 3 December 2010 via email. Pursuant to S.9.152 of the EIA Report for HATS Stage 2A, I hereby verify the captioned plan.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne F Kerr
Independent Environmental Checker

c.c. Ove Arup & Partners HK Ltd.
China State – ATAL JV

Mr. Ted Y F Tang
Mr. Chris Leung

Fax: (2371 0760)
By email

中國建築安樂聯營



China State – ATAL Joint Venture

Contract No. DC/2009/17

Harbour Area Treatment Scheme Stage 2A
Upgrading Works at Stonecutters Island Sewage
Treatment Works – Sludge Dewatering Facilities

Revision No. 0

WASTE MANAGEMENT PLAN

	Position	Name	Signature	Date
Prepared By:	Environmental Officer	H. S. Lui	R.P. 	3 rd December 10
Approved By:	Site Agent	Chris LEUNG		3 rd December 10

CONTENTS

1. INTRODUCTION	5
1.1 BACKGROUND	5
1.2 PURPOSES OF THE WMP	6
1.3 WASTE MANAGEMENT REQUIREMENTS AND GUIDELINES	7
1.4 LICENCES REQUIREMENTS	8
2. ORGANISATION AND STRUCTURE	9
2.1 ORGANIZATION AND RESPONSIBILITY	9
3. IDENTIFICATION AND CLASSIFICATION OF WASTE GENERATED FROM THE CONSTRUCTION ACTIVITIES	11
3.1 WASTE ARISING FROM THE CONSTRUCTION ACTIVITIES	11
3.1.1 Excavated Material	11
3.1.2 Marine Deposit	11
3.1.3 Construction & Demolition Materials	12
3.1.4 General Refuse	12
3.1.5 Chemical Waste	12
3.2 DESIGNATED WASTE DISPOSAL FACILITIES AND DISOPOSAL CRITERIA	12
4. PROPOSAL FOR WASTE MANAGEMENT	14
4.1 WASTE MANAGEMENT HIERARCHY	14
4.2 DESGIN AND PLANNING OF CONSTRUCTION WORKS	14
4.3 WASTE MINIMIZATION MEASURES AND GOOD SITE PRACTICE	15
4.4 HANDLING OF C&D MATERIALS	16
4.4.1 Waste Sorting	16
4.4.2 Chemical Waste	18
4.5 PROMOTION AND TRAINING ON WASTE MANAGEMENT	19
4.5.1 Environmental Training	19
4.5.2 Environmental Promotion	20
5. TRIP TICKET SYSTEM AND RECORDING	21
5.1 TRIP TICKET SYSTEM (TTS)	21
5.2 WASTE RECORDING SYSTEM	22

6.	EVENT CONTINGENCY PLAN FOR NON-COMPLIANCE	23
6.1	HANDLING PROCEDURE FOR NON- COMPLIANCE AND COMPLAINT	23
6.2	ENVIRONMENTAL EMERGENCY PROCEDURES FOR CHEMICAL SPILLAGE	24
7.	AUDITING PROPOSAL	25

Appendices

Appendix A	Project Organization Chart for Waste Management
Appendix B	Tentative C&D Materials Disposal Programme (Monthly Schedule)
Appendix C	General Layout Plans for On Site Waste Management
Appendix D	Waste Classification and Their Recommended Usage / Outlet
Appendix E	Monthly Summary of Waste Flow Table & Record of Timber Usage
Appendix F	Sample of CHIT, Disposal Delivery Form & Daily Summary Record

Tables

Table 3.1	Estimated Volume of C&D Material Generated during the Project Works (DC/2009/17)
Table 3.2	Designation of Public Fill Reception Facility and Landfill
Table 4.1	Waste Management Hierarchy

1.0 INTRODUCTION

In accordance with Section 9.152 of the EIA report (register no. AEIAR-121/2008), a Waste Management Plan (WMP) shall be prepared for submission to Environmental Protection Department (EPD).

1.1 Background

This report will outline the Contractor WMP proposed by the Contractor for DSD Contract (Contract No. DC/2009/17) Harbour Area Treatment Scheme Stage 2A (HATS 2A), Upgrading Works at Stonecutters Island Sewage Treatment Works – Sludge Dewatering Facilities. China State – ATAL Joint Venture (CSAJV) will ensure that all his employees will implement the accepted version of this WMP as an integral part of their daily activities on site.

This project consists of the construction of Sludge Dewatering Building, Northern and Southern Sludge Cake Silos, Northern and Southern Sludge Conveyor Bridges, two Sludge Storage Tanks, Deodourization Units No. 5 and 6, Workshop Building, Water Storage Tanks and demolition of the existing sludge cake silos and sludge dewatering building inside the Stonecutters Island Sewage Treatment Plant area. This project was commenced in August 2010 and the works would take place in a 69-month period.

There are five sections of Work with different scopes of this Contract include the following items:

■ **Section 1A of the Works**

At the commencement of work, temporary vehicle washing facilities will be constructed within the area of the existing sludge cake silo. After completion of the temporary facilities, the existing vehicle washing facilities can be demolished to facilitate the piling works at the Sludge Dewatering Building.

■ **Section 2 of the Works**

The design of the piling works will be submitted to the Engineer for approval as soon as possible after commencement of the works. At the same time, initial works such as pre-drilling for the pre-bored H-piles will also be proceeded.

The pile at Northern Sludge Cake Silo and Sludge Dewatering Building can be commenced once the founding level of the piles has been confirmed. The piles along the side of the proposed tunnel to be constructed under Contract DC/2009/05 will be installed first so that the piles will be completed before the tunnel construction. Some of these piles at Sludge Dewatering Building can only be proceeded after the demolition of the existing vehicle washing facilities.

■ **Section 3 of the Works**

This section is to complete construction of the Northern Sludge Cake Silo, the Northern Conveyor Bridge, the Sludge Dewatering Building, the Sludge Storage Tanks and the associated pipe works and commission the system. Piling work at the Northern Sludge Cake Silo and Sludge Dewatering Building will be continued after achievement of Section 2 of the Works. The structural works and E&M installation proceed after piling. The steelwork of the Northern Sludge Cake Silo and the Conveyor Bridge will be fabricated in Mainland. The prefabricated units will be delivered to site by marine

transport. Heavy duty crane will be employed to lift up the units and install the units in position.

Construction of the Sludge Storage Tanks 6&7 will be commenced upon possession of the site at the commencement of the works. The pipe works and ducting will be installed and connected to the Northern Sludge Cake Silo and Sludge Dewatering Building.

After testing and commissioning, the existing sludge dewatering building and sludge cake silo will be decommissioned.

■ **Section 4 of the Works**

After decommissioning, the plant and equipment inside the existing sludge dewatering building and sludge cake silo will be removed, and the structures demolished.

■ **Section 5 of the works**

Diversion of the existing drainage and ducting will be carried out for construction of the new Water Tanks as soon as completion of Section 3 of the Works. When the new Water Tanks are ready, the existing ones will be demolished so that the some of the piles at the new Workshop Building can be installed.

Construction of the Southern Sludge Cake Silo, the Southern Conveyor Bridge and the Workshop Building commences after existing structures have been demolished. Daido piles will be re-driven and tested before installation of the prebored H-piles at the Workshop Building.

All the remaining external works will be carried out concurrently with the structural works. After E&M installation, the completed system will be tested and put into operation.

1.2 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&D wastes 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.

1.3 Waste Management Requirements and Guidelines

During the contract period, CSAJV 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. 354);*
- *Public Health and Municipal Services Ordinance - Public Cleansing and Prevention of Nuisances Regulation (Cap. 132);*
- *Land (Miscellaneous Provisions) Ordinance;*
- *Dumping at Sea Ordinance (Cap. 466); and*
- *Dangerous Goods Ordinance (Cap.295)*

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

CSAJV 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. 15/2003 - Waste Management on Construction Sites;*
- b. *Environment, Transport and Works Bureau Technical Circular (Works) No. 19/2005 Environmental Management on Construction Sites*
- c. *Environment, Transport and Works Bureau Technical Circular No. 33/2002 - Management of Construction and Demolition Material Including Rock;*
- d. *Works Bureau Technical Circular No. 21/2002 - Trip-ticket System for Disposal of Construction and Demolition Material;*
- e. *Works Bureau Technical Circular No. 12/2002 - Specifications Facilitating the Use of Recycled Aggregates;*
- f. *Works Bureau Technical Circular No. 06/2002A - Enhanced Specification for Site Cleanliness and Tidiness;*
- g. *Works Bureau Technical Circular No. 06/2002 - Enhanced Specification for Site Cleanliness and Tidiness;*
- h. *Works Bureau Technical Circular No. 19/2001 - Metallic Site Hoardings and Signboards;*
- i. *Works Bureau Technical Circular No. 12/2000 - Fill Management;*
- j. *Works Bureau Technical Circular No. 04/1998A - Use of Public Fill in Reclamation and Earth Filling Projects;*
- k. *Works Bureau Technical Circular No. 04/1998 - Use of Public Fill in Reclamation and Earth Filling Projects;*
- l. *Works Bureau Technical Circular No. 16/1996 - Wet Soil in Public Dumps;*
- m. *Works Bureau Technical Circular No. 02/1993B - Public Filling Facilities;*

- n. Works Bureau Technical Circular No. 02/1993 - Public Dumps;*
- o. Works Bureau Technical Circular No. 32/1992 - The Use of Tropical Hardwood on Construction Sites;*
- p. A Guide to the Registration of Chemical Waste Producers;*
- q. A Guide to the Chemical Waste Control Scheme;*
- r. Code of Practice on the Packaging, Labeling and Storage of Chemical Wastes;*
- s. Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste – (Cap 354, Section 35) and,*
- t. Environmental Guidelines for Planning in Hong Kong (1990), Hong Kong Planning and Standards Guidelines, Hong Kong Government.*

CSAJV 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. CSAJV will also apply all necessary permits and licenses under these ordinances / regulations

1.4 License Requirements

Where appropriate, CSAJV 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 Site Manager will have the overall responsibility to ensure that the requirements of the WMP are properly implemented. He will act as the Waste Manager for the Contract. The Site Agent 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 responsibilities of key site staff for the WMP are listed as follows: (see Appendix A of Project Organization Chart).

Site Manager, SM (Waste Manager)

The Project Manager 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 (Deputy Waste Manager and Team Leader)

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 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 and Assistant Safety Officer (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 (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 (Team Member)

- Assist General Foreman to prepare location plans for storage of building materials to avoid or minimise 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 (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

- 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, demolition works, 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 workers.

A summary of the estimated quantities of C&D material to be generated from the construction and demolition work under the Project is shown in Table 1 below and the tentative C&D material disposal programme is attached in Appendix B.

Table 3.1 Estimated Volume of C&D Material Generated during the Project Works (DC/2009/17)

Works Items	Inert C&D Material			Total A+B+C (m ³)
	Soft Materials A (m ³)	Grade III or better Rock (hard inert material) B (m ³)	Concrete C (m ³)	
Sludge Holding Tanks	3,100	-	-	3,100
Sludge Dewatering Building	5,350	-	-	5,350
Sludge Cake Silos	910	-	-	910
General Ground Works and Utilities	1,700	-	-	1,700
Existing Sludge Dewatering Building (Demolition)	-	-	2,092	2,092
Total Inert C&D Material Generation	11,060	-	2,092	13,152

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 disposed of site.

3.1.2 Marine Deposit

No marine deposit is identified / planned to be disposed of under this Contract. The estimated marine deposit from HATS 2A upgrading works at SCISTW would be excavated under other contract.

3.1.3 Construction & Demolition (C&D) Materials

C&D materials include inert public fill materials such as bricks, rubble, concrete and non-inert C&D waste such as wood, steel, vegetation and office and work force waste etc. The majority of C&D material will arise during site clearance, demolition and excavation works.

3.1.4 General Refuse

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

3.1.5 Chemical Waste

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

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

3.2 Designated Waste Disposal Facilities and Disposal Criteria

The designation of public fill reception facility and landfill, 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 2.

Table 3.2 Designation of Public Fill Reception Facility and Landfill

C&D Material	Designated Waste Disposal Facility	Designated Location	Possible Disposal Routes to Designated Location	Criteria to be adopted
Inert C&D Material	Public Fill Reception Facilities	Tuen Mun Area 38 Fill Bank	Stonecutters Island, West Kowloon Expressway, Tsing Kwai Highway, Cheung Tsing Tunnel, Ting Kau Bridge, Tai Lam Tunnel, Route 3, Yuen Long Highway, Tuen Mun Road, Lung Mun Road	Entirely of inert construction waste (Schedule 5)
C&D Waste	Landfills	North East New Territories (NENT) Landfill	Stonecutters Island, Ching Cheung Road, 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)

CSAJV will also comply with the following requirement when delivery of construction waste to public fills reception facilities and landfills:

- (1) Any over-sized inert C&D materials will be broken down to less than 250mm in size so as to facilitate its re-use by other reclamation or earth-filling project.
- (2) CSAJV will implement proper measures to ensure that the dump trucks delivering C&D materials are not overloaded.
- (3) C&D material to be disposed to the public fill shall be free from pond mud according to the conditions of the dumping license.
- (4) Mixed C&D material should be sorted at source to reduce the inert content to less than 30% by weight as far as practicable before they are delivered to landfills.
- (5) The C&D waste 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

CSAJV 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 3 below.

Table 4.1 Waste Management Hierarchy

↓	Avoidance and minimization	Avoid and minimize waste through changing or improving practices and designs.	↑ Highest priority Lowest 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.	
	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, CSAJV 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, on site 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.

A general layout plans for the chemical waste storage area and the proposed storage/ sorting area for C&D material are attached in Appendix D.

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. *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;*
- b. *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;*
- c. *A preference for reusable non-timber formwork such as steel formwork or plastic facing;*
- d. *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;*
- e. *Segregation and storage of constituents of C&D materials 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;*
- f. *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;*
- g. *Provision of a designated waste working team to collect the refuse on site regularly;*
- h. *Removal of all other un-reusable C&D materials off site as soon as practicable in order to optimize the use of the on-site storage space;*
- i. *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&D materials 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;*
- j. *During the storage and transportation of waste, a tarpaulin covering or enclosed containers will be used to minimize fugitive dust emission;*
- k. *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);*
- l. *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; and*
- m. *The amount of waste reused, recycled or disposed will be recorded regularly.*

4.4 Handling of C&D Materials

Storage, collection and transportation of the C&D material will be carefully planned and implemented to minimize any adverse impact upon the environment. The generated C&D material will be sorted on site and C&D waste for recycling as appropriate in accordance with ETWB TCW No. 15/2003, or subsequent disposal at approved strategic landfills and Public Filling Areas (PFAs). Wherever practicable, SA/DSA 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&D materials will be stored in separate covered storage areas to avoid possible cross contamination and loss due to windblown and fugitive dust. If the C&D materials 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/DSA will ensure that C&D materials are removed from their origin and processed at designated points in a timely manner.

Recyclable materials such as steel mesh, reinforcement bars, window frames, railing, banisters, and wooden planks will be separated from other C&D materials. 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 Engineer's Representative.

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 SM 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&D materials 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.

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, CSAJV 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.

(1) Inert C&D Materials

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

Excess Excavated Material

In order to minimize the amount of excess excavated material to be delivered to public fill facilities, 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 will be transported to other sites for reuse as approved by the Engineer's Representative; and*
- c. *Only the amount of excavated material remaining after reuse as described under Items a. and b. will be transported to the public fill facilities.*

Inert C&D materials which are to be disposed to public filling outlets will be broken down to a size less than 250mm as according to Dumping License conditions prior to disposal. Wet soil with free water or a liquid content of over 70% and other materials such as marine mud, pond mud, household refuse, plastic, metal, industrial and chemical waste matter etc. will not be loaded into the dump truck. This will be controlled by the GF/SE during the earthwork operations and further verified at the exit checkpoint before the trip ticket is issued for each truck.

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.

All the remaining inert C&D materials will be transported to the public filling facilities approved by Engineer. The trip ticket system will ensure there is no illegal dumping of the above-mentioned materials.

(2) Non-Inert C&D materials

Timber Waste

As far as possible, CSAJV 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 5m³, CSAJV will submit a method statement to the Engineer's Representative 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

CSAJV 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&D Waste

Un-recyclable, non-inert C&D materials, i.e. C&D wastes, 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&D waste will be temporarily stored and containers or skips with openable doors 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&D waste 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.

Storage of 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:

- 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 450 L 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 will be disposed to SENT landfill while 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&D material and waste. A sample of the Monthly Waste Flow Table and Record of Timber Usage is given at Appendix E.

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 induction Training cover environmental and waste management in addition to safety will be conducted for all staff and workers employed for the Works or in connection with the Contract. The training content should cover 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&D wastes, CSAJV will implement and comply with the requirements of the Trip-Ticket System (TTS) stipulated in Works Bureau Technical Circular No. 31/2004. 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&D materials 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) The Site Supervisory Staff will prepare and hand the DDF to the CSAJV on the day of disposal.
- (2) For each truckload of C&D materials leaving the Site, the CSAJV's truck driver must bear a duly completed, signed and stamped DDF.
- (3) For each vehicular trip, CSAJV will present to the operator of the Designed Public Filling Facility / Landfill (operator) the stamped Form prior to disposal of the C&D materials. Upon completion of the disposal, CSAJV will ask the operator for a stamp on the Form together with a computer print-out receipt to acknowledge the disposal. CSAJV will collect and verify the returned Form and computer receipt. A copy of the Form and computer receipt will be maintained by CSAJV for record.
- (4) CSAJV will also present valid "CHIT" in addition to the DDF under the TTS when disposing of construction waste at the waste disposal facilities, as the requirement under the Construction Waste Disposal Charging Scheme.
- (5) CSAJV will maintain a daily record of disposal of C&D materials from the Site including details of the C&D materials, the truck number, departure time, etc., using the Daily Record Summary (DRS).
- (6) CSAJV will submit the duly completed Part 1 of the DRS form promptly to the Site Supervisory Staff by 1:00 pm of the working day following the date of disposal.
- (7) For disposal at government disposal facilities, CSAJV will check the information recorded in the DRS against available information including his own records and data from CEDD's website [<http://www.cedd.gov.hk/eng/services/tripticket/index.html>] and then complete Part 2 of the DRS form for submission to Site Supervisory Staff within 3 working days after the date of disposal.
- (8) ER may request and obtain information from the operator of the Designed Public Filling Facility / Landfill to verify the receipt of the C&D materials and the accuracy of the information on the receipt.

Informing the Truck Drivers

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

- (a) Each truck carrying C&D materials 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&D materials 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).

A sample of the "CHIT", stamped Disposal Delivery Form (DDF) and Daily Summary Table (DRS) is given at **Appendix F**.

5.2 Waste Recording System

CSAJV will record the quantities of C&D materials generated each month, using the monthly summary "Waste Flow Table" (WFT) CSAJV shall complete the monthly summary WFT.

The following records will be kept by CSAJV for inspection and reporting as necessary by the Environmental Team or the Engineer's Representative:

- 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

5.3 Control of Overloading of Dump Trucks

Photo record will be taken for all dump truck before uploading of C&D material and leaving the Site. CSAJV would coordinate with the contractor of DSD Contract no. DC/2009/05 for using their weighbridge as overloading control. All loaded dump trucks will be weighted at the weighbridge prior to issuing trip ticket and leaving the site. The system of overloading control system will be reviewed periodically.

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 DSD, the EO/ES will raise a Corrective & Preventive Action Report (CPAR) to SA/CMs.;
2. The CMs 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 DSD 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 DSD;
5. If the implementation of the corrective actions is satisfactory, the non-compliance record (CPAR) will be closed and the DSD advised accordingly;
6. The CMs/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/CMs/EO will record CPARs accordingly in the CPAR logsheet.
8. Environmental Team and Engineer representative 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/CMs for carrying out complaint investigation procedures;
2. The SA/CMs will log complaint and date of receipt onto the complaint database and inform the SM, the DSD immediately within 2 working day;
3. Within 2 working day after receipt of the notification of complaint, the EO/ES will identify the source of the problem and provide the DSD 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/CMs to propose corrective actions/mitigation measures to DSD. The SA/CMs 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 DSD 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 Engineer representative should be notified immediately in case of the event of complaint.

6.2 Environmental Emergency Procedures for Chemical Spillage

For any environmental emergency involving the spillage or leakage of chemicals, CSAJV will implement the following response procedures.

- *Instruct untrained personnel to keep at a safe distance well away from the spillage area;*
- *If the spillage is in an enclosed area (e.g. inside the chemical storage area), open the doors and windows to enhance ventilation;*
- *If the spillage involves highly toxic, volatile or hazardous materials, initiate emergency evacuation (refer to the Construction Safety Plan) and call the emergency service;*
- *Only persons equipped with suitable protective clothing and equipment will be allowed to enter and clean up the chemical spillage area;*
- *Spillage of liquid at storage area - Where the spillage is contained in the enclosed storage area, the liquid will be transferred into suitable chemical waste containers by suitable handheld equipment, such as hand operated pumps, scoops and shovel. If the spillage quantity is small, it will be covered and mixed with suitable absorbing materials such as tissue paper, dry soft sand or vermiculite. The resultant slurry will be treated as chemical waste and transferred to suitable containers for disposal;*
- *Spillage at other areas - For spillage in other areas, immediate action is required to contain the spillage. Suitable liquid absorbing materials such as tissue paper, dry soft sand or vermiculite will be used to cover the spill. The resultant slurry will be treated as chemical waste and transferred into containers for proper disposal; and*
- *In incidents where the spillage may result in significant contamination of an area or risk of pollution, the EPD will be informed immediately.*

The communication channel / reporting procedure for emergency event and chemical spillage on site

- *An effective communication system through telephone will establish and maintain to allow instant contact between site supervisory staff, environmental officer, environmental supervisors, first-aiders and all subcontractors*
- *An emergency telephone list which includes the off duty telephone numbers of the key staff and relevant government departments will be displayed on site notice board.*
- *The environmental officer is acted as the public relation officer to handle public complaint such as noise, dust, waste water etc. and liaise with the government department such as Environmental Protection Department and Food & Environmental Hygiene Department.*
- *The external communication system shall be reviewed for adequacy at least annually and whenever major or high-potential accidents or incidents occur which identify external communications as a basic cause.*

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:-

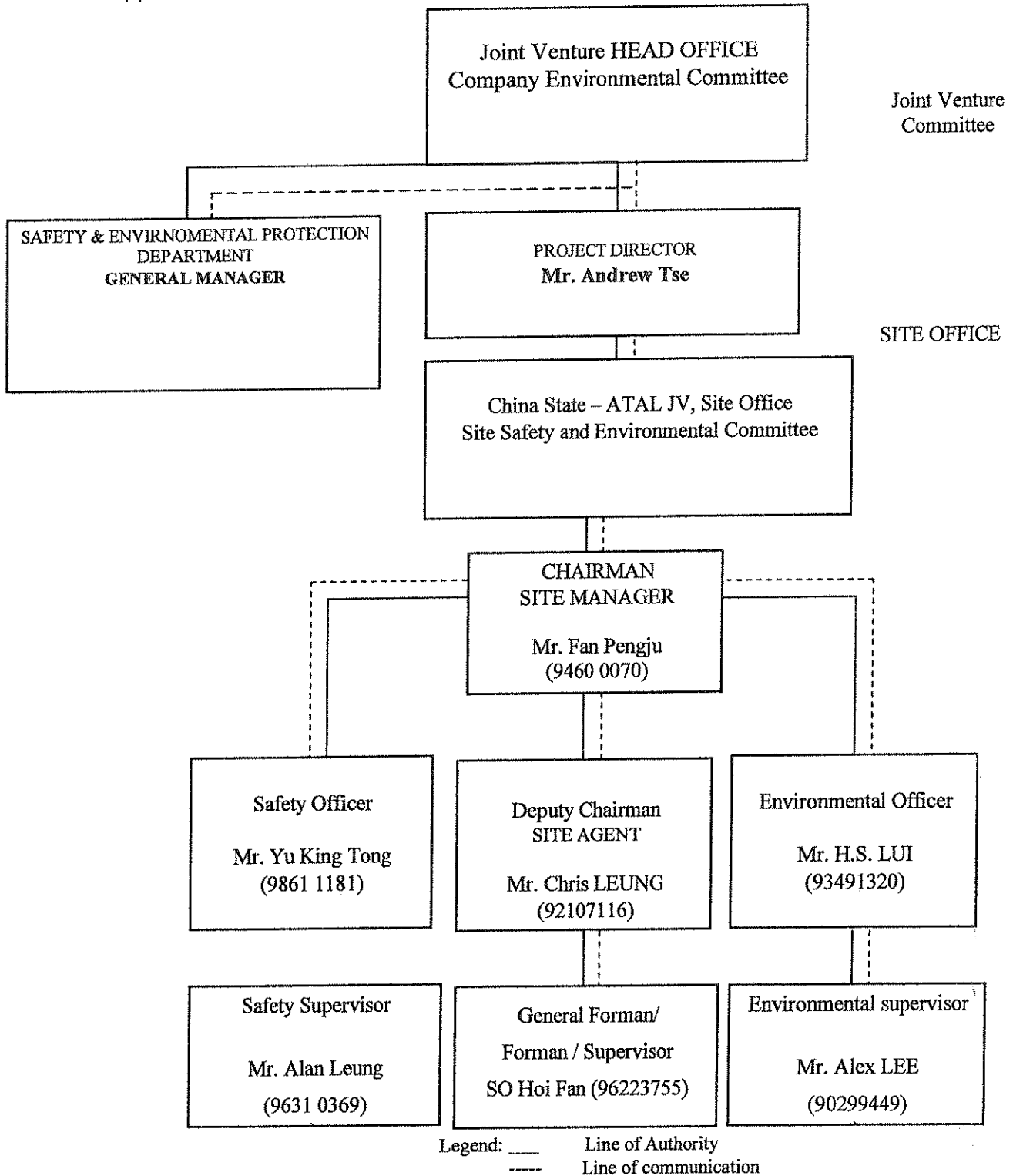
- Internal audits will be performed in line with the WMP by an environmental auditor with well experienced personnel
- Audits will be planned to by Environmental Officer determine when and where to audits which are scheduled on the basis of the status and importance of the activity
- Audit comprises 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 as Section 7.0 of 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 Organization Chart for Waste Management

Appendix A Environmental Organization Chart of Key Personnel



Appendix B

Tentative C&D Material Generation Programme (Monthly Schedule)

DC/2009/17 Harbour Area Treatment Scheme Stage 2A - Upgrading Works at Stonecutters Island Sewage Treatment Works
Sludge Dewatering Facilities
C&DMMP (as at end October 2010)

Latest Programme for Generation & Import of Materials in each Reporting Period	Programmed Quantity for Generation of Surplus C&D Materials					Programmed Quantity for Imported of Fill		
	Inert C&D Materials (Soft Public Fill)	Good Quality Rock (with breakdown)	Broken Concrete	Marine Deposit	C&D Waste	Inert C&D Materials (Soft Public Fill)	Rock	Sand Fill
Unit	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)
2010/07 (Actual)								
2010/08 (Actual)	0	0	0	0	0			
2010/09 (Actual)	0	0	0	0	0			
2010/10 (Actual)	0	0	0	0	0			
2010/11 (Forecast)	33	0	0	0	12			
2010/12 (Forecast)	337	0	0	0	12			
Sub-total	370	0	0	0	24	0	0	0
2011/01 (Forecast)	611	0	0	0	12			
2011/02 (Forecast)	611	0	0	0	12			
2011/03 (Forecast)	611	0	0	0	12			
2011/04 (Forecast)	611	0	0	0	10			
2011/05 (Forecast)	611	0	0	0	10			
2011/06 (Forecast)	611	0	0	0	10			
Sub-total	3666	0	0	0	66	0	0	0
2011/07 (Forecast)	370	0	0	0	10			
2011/08 (Forecast)	370	0	0	0	7			
2011/09 (Forecast)	370	0	0	0	7			
2011/10 (Forecast)	370	0	0	0	7			
2011/11 (Forecast)	182	0	0	0	7			
2011/12 (Forecast)	182	0	0	0	7			
Sub-total	1844	0	0	0	45	0	0	0
Year 2010 to 2011, Total	5880	0	0	0	135	0	0	0
2012/01 (Forecast)	182	0	0	0	7			
2012/02 (Forecast)	182	0	0	0	7			
2012/03 (Forecast)	182	0	0	0	7			
2012/04 (Forecast)	182	0	0	0	7			
2012/05 (Forecast)	182	0	0	0	7			
2012/06 (Forecast)	0	0	0	0	7			
Sub-total	910	0	0	0	42	0	0	0
2012/07 (Forecast)	8	0	0	0	7			
2012/08 (Forecast)	8	0	0	0	7			
2012/09 (Forecast)	8	0	0	0	7			
2012/10 (Forecast)	8	0	0	0	6			
2012/11 (Forecast)	8	0	0	0	6			
2012/12 (Forecast)	8	0	0	0	6			
Sub-total	48	0	0	0	39	0	0	0
2013/01 (Forecast)	8	0	0	0	6			
2013/02 (Forecast)	8	0	0	0	6			
2013/03 (Forecast)	8	0	0	0	6			
2013/04 (Forecast)	8	0	0	0	10			
2013/05 (Forecast)	8	0	0	0	10			
2013/06 (Forecast)	8	0	0	0	10			
Sub-total	48	0	0	0	48	0	0	0
2013/07 (Forecast)	8	0	0	0	16			
2013/08 (Forecast)	8	0	0	0	16			
2013/09 (Forecast)	8	0	0	0	16			
2013/10 (Forecast)	8	0	230	0	16			
2013/11 (Forecast)	8	0	230	0	16			
2013/12 (Forecast)	8	0	230	0	16			
Sub-total	48	0	690	0	96	0	0	0
Year 2012 to 2013, Total	1054	0	690	0	225	0	0	0
2014/01 (Forecast)	8	0	230	0	16			
2014/02 (Forecast)	8	0	230	0	16			
2014/03 (Forecast)	8	0	230	0	16			
2014/04 (Forecast)	8	0	170	0	14			
2014/05 (Forecast)	79	0	170	0	14			
2014/06 (Forecast)	79	0	170	0	14			

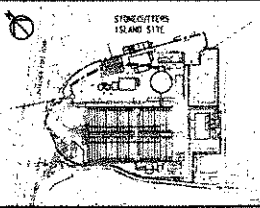
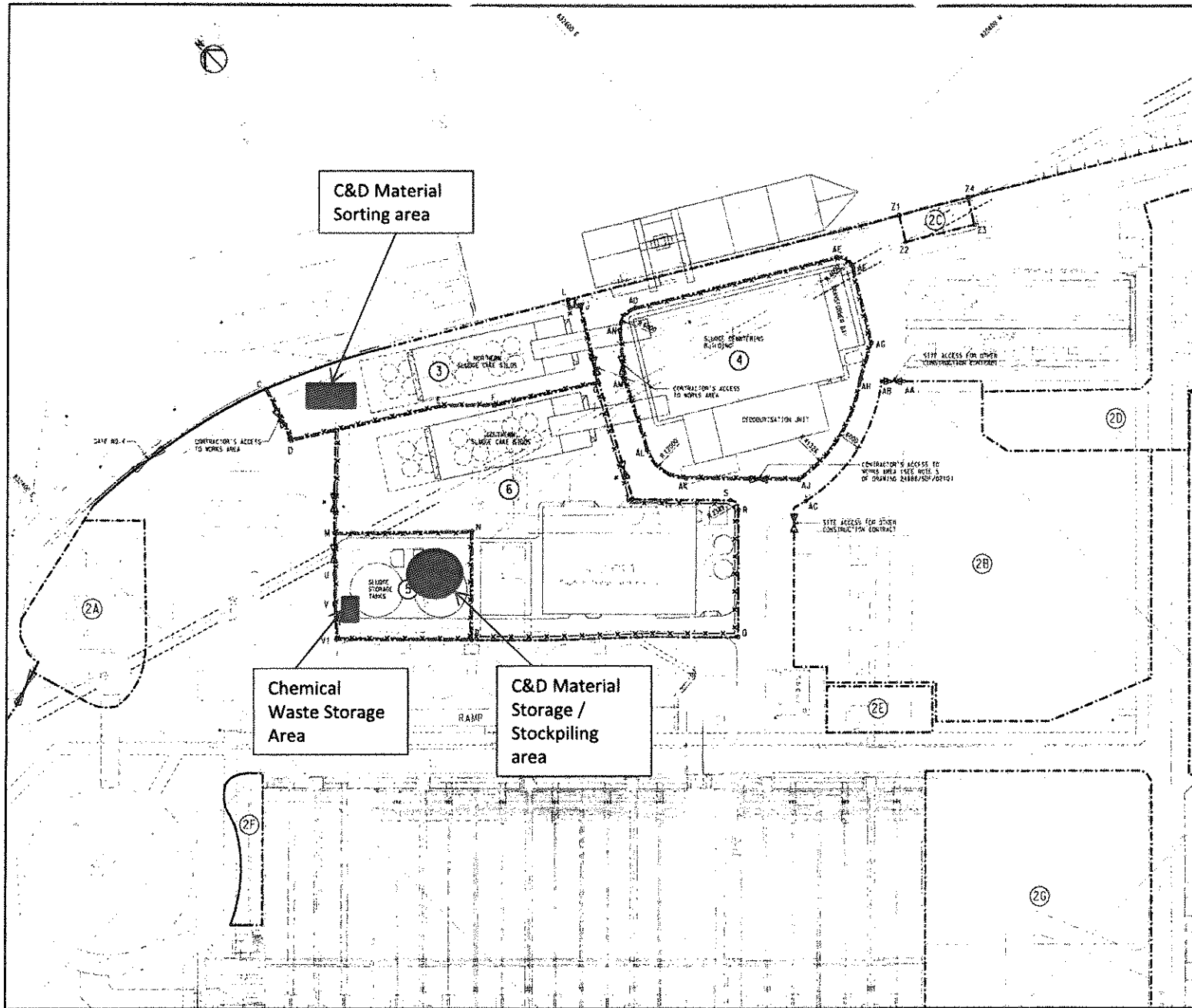
DC/2009/17 Harbour Area Treatment Scheme Stage 2A - Upgrading Works at Stonecutters Island Sewage Treatment Works
Sludge Dewatering Facilities
C&DMMP (as at end October 2010)

Latest Programme for Generation & Import of Materials in each Reporting Period	Programmed Quantity for Generation of Surplus C&D Materials					Programmed Quantity for Imported of Fill		
	Inert C&D Materials (Soft Public Fill)	Good Quality Rock (with breakdown)	Broken Concrete	Marine Deposit	C&D Waste	Inert C&D Materials (Soft Public Fill)	Rock	Sand Fill
Density (t/m ³)	2.00	2.50	2.50	2.00	1.00	1.80	2.00	1.90
	(t)	(t)	(t)	(t)	(t)	(t)	(t)	(t)
2010/07 (Actual)								
2010/08 (Actual)								
2010/09 (Actual)								
2010/10 (Forecast)								
2010/11 (Forecast)	66	0	0	0	12			
2010/12 (Forecast)	674	0	0	0	12			
Sub-total	740	0	0	0	24	0	0	0
2011/01 (Forecast)	1222	0	0	0	12			
2011/02 (Forecast)	1222	0	0	0	12			
2011/03 (Forecast)	1222	0	0	0	12			
2011/04 (Forecast)	1222	0	0	0	10			
2011/05 (Forecast)	1222	0	0	0	10			
2011/06 (Forecast)	1222	0	0	0	10			
Sub-total	7332	0	0	0	66	0	0	0
2011/07 (Forecast)	740	0	0	0	10			
2011/08 (Forecast)	740	0	0	0	7			
2011/09 (Forecast)	740	0	0	0	7			
2011/10 (Forecast)	740	0	0	0	7			
2011/11 (Forecast)	364	0	0	0	7			
2011/12 (Forecast)	364	0	0	0	7			
Sub-total	3688	0	0	0	45	0	0	0
Page Total	11760	0	0	0	135	0	0	0
2012/01 (Forecast)	364	0	0	0	7			
2012/02 (Forecast)	364	0	0	0	7			
2012/03 (Forecast)	364	0	0	0	7			
2012/04 (Forecast)	364	0	0	0	7			
2012/05 (Forecast)	364	0	0	0	7			
2012/06 (Forecast)	0	0	0	0	7			
Sub-total	1820	0	0	0	42	0	0	0
2012/07 (Forecast)	16	0	0	0	7			
2012/08 (Forecast)	16	0	0	0	7			
2012/09 (Forecast)	16	0	0	0	7			
2012/10 (Forecast)	16	0	0	0	6			
2012/11 (Forecast)	16	0	0	0	6			
2012/12 (Forecast)	16	0	0	0	6			
Sub-total	96	0	0	0	39	0	0	0
2013/01 (Forecast)	16	0	0	0	6			
2013/02 (Forecast)	16	0	0	0	6			
2013/03 (Forecast)	16	0	0	0	6			
2013/04 (Forecast)	16	0	0	0	10			
2013/05 (Forecast)	16	0	0	0	10			
2013/06 (Forecast)	16	0	0	0	10			
Sub-total	96	0	0	0	48	0	0	0
2013/07 (Forecast)	16	0	0	0	16			
2013/08 (Forecast)	16	0	0	0	16			
2013/09 (Forecast)	16	0	0	0	16			
2013/10 (Forecast)	16	0	575	0	16			
2013/11 (Forecast)	16	0	575	0	16			
2013/12 (Forecast)	16	0	575	0	16			
Sub-total	96	0	1725	0	96	0	0	0
Page Total	2108	0	1725	0	225	0	0	0
2014/01 (Forecast)	16	0	575	0	16			
2014/02 (Forecast)	16	0	575	0	16			
2014/03 (Forecast)	16	0	575	0	16			
2014/04 (Forecast)	16	0	425	0	14			
2014/05 (Forecast)	158	0	425	0	14			

Latest Programme for Generation & Import of Materials in each Reporting Period	Programmed Quantity for Generation of Surplus C&D Materials					Programmed Quantity for Imported of Fill		
	Inert C&D Materials (Soft Public Fill)	Good Quality Rock (with breakdown)	Broken Concrete	Marine Deposit	C&D Waste	Inert C&D Materials (Soft Public Fill)	Rock	Sand Fill
Density (t/m ³)	2.00	2.50	2.50	2.00	1.00	1.80	2.00	1.90
2014/06 (Forecast)	158	0	425	0	14			
Sub-total	380	0	3000	0	90	0	0	0
2014/07 (Forecast)	98	0	170	0	10			
2014/08 (Forecast)	140	0	168	0	10			
2014/09 (Forecast)	846	0	168	0	10			
2014/10 (Forecast)	846	0	0	0	10			
2014/11 (Forecast)	846	0	0	0	8			
2014/12 (Forecast)	846	0	0	0	8			
Sub-total	3622	0	505	0	56	0	0	0
2015/01 (Forecast)	964	0	0	0	8			
2015/02 (Forecast)	1032	0	0	0	0			
2015/03 (Forecast)	1464	0	0	0	0			
2015/04 (Forecast)	296	0	0	0	0			
2015/05 (Forecast)	296	0	0	0	0			
2015/06 (Forecast)	66	0	0	0	0			
Sub-total	4118	0	0	0	8	0	0	0
2015/07 (Forecast)	66	0	0	0	0			
2015/08 (Forecast)	66	0	0	0	0			
2015/09 (Forecast)	0	0	0	0	0			
2015/10 (Forecast)	0	0	0	0	0			
2015/11 (Forecast)	0	0	0	0	0			
2015/12 (Forecast)	0	0	0	0	0			
Sub-total	132	0	0	0	0	0	0	0
Page Total	8252	0	3505	0	154	0	0	0
2016/01 (Forecast)	0	0	0	0	0			
2016/02 (Forecast)	0	0	0	0	0			
2016/03 (Forecast)	0	0	0	0	0			
2016/04 (Forecast)	0	0	0	0	0			
2016/05 (Forecast)	0	0	0	0	0			
2016/06 (Forecast)	0	0	0	0	0			
Sub-total	0	0	0	0	0	0	0	0
2016/07 (Forecast)	0	0	0	0	0			
2016/08 (Forecast)	0	0	0	0	0			
2016/09 (Forecast)	0	0	0	0	0			
2016/10 (Forecast)	0	0	0	0	0			
2016/11 (Forecast)	0	0	0	0	0			
2016/12 (Forecast)	0	0	0	0	0			
Sub-total	0	0	0	0	0	0	0	0
Page Total	0	0	0	0	0	0	0	0
Overall Total (t)	22120	0	5230	0	514	0	0	0
Overall Total (m ³)	11060	0	2092	0	514	0	0	0

Appendix C

General Layout Plan for On Site Waste Management



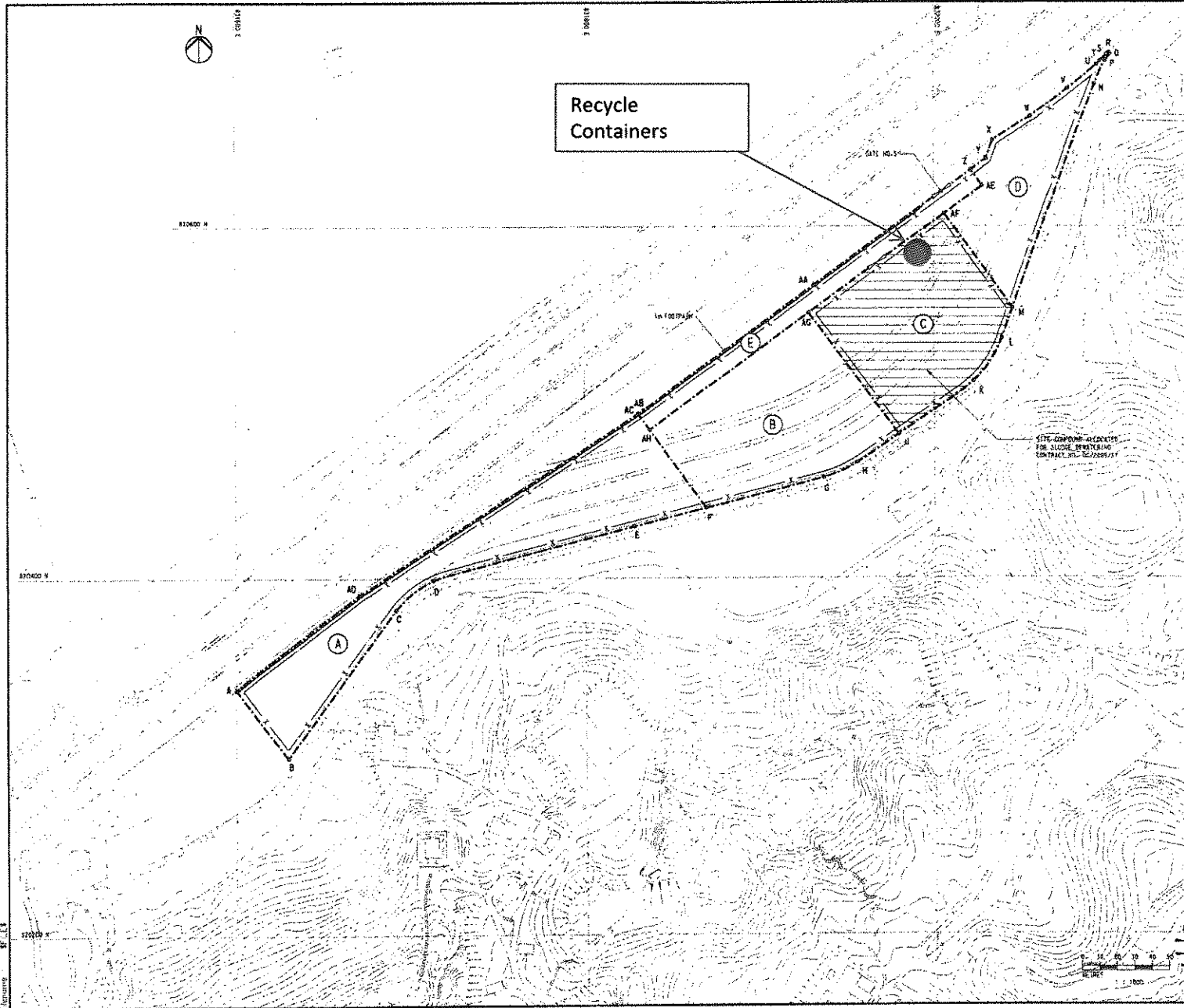
NOTES FOR PORTIONS:

LEGEND :

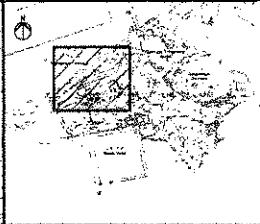
- - - - - PORTION / WORKS AREA
- X-X- PROPOSED FENCING LINE

Contract No. DC/2009/17
 Harbour Area Treatment Scheme
 Stage 2A Upgrading Works at
 Stonecutters Island
 Sewage Treatment Works -
 Sludge Dewatering Facilities

General Layout Plan
 for Waste
 Management
 Page 1 of 2
 (Rev.0)



Recycle Containers



KEY PLAN

LEGEND 1

- PORTLAND CEMENT AREA
- PORTION OF SITE
- CHAIN LINK FENCE TYPE 1 WITH GATE
- GATE

Project No. Contract No. DC/2009/17
 Harbour Area Treatment Scheme
 Stage 2A Upgrading Works at
 Stonecutters Island
 Sewage Treatment Works -
 Sludge Dewatering Facilities

General Layout Plan
 for Waste
 Management
 Page 2 of 2
 (Rev.0)

Printed by
 DATE
 13/11/17

Appendix D

Waste Classification and their Recommended Usage / Outlet

Waste Stream	Waste Type	Recommended Usage/Outlet
Inert Materials to Public Fill	<ul style="list-style-type: none"> • Aggregate, debris, soil and concrete • Excavated and Fill Materials 	<ul style="list-style-type: none"> • On-site reuse whenever possible • Re-process as construction materials • Reclamation and site formation at Public Filling Areas
Non-inert Materials (less than 30% by weight of inert material) to Landfill	<ul style="list-style-type: none"> • Bamboo, timber, plants, packaging waste and other organic waste • Metal (including steel mesh, reinforcement bars, window frames, railings, banisters, etc.) • Glass • Plastic, Rubber • Expanded polystyrene 	<ul style="list-style-type: none"> • Selectively segregate for reuse or recycling • Timber over specific length shall be used as much as practicable • Licensed steel mills in Hong Kong or approved overseas steel mills for re-processing for metal products • Substitute for sand and aggregates as pipe-bedding material, gravel backfill for walls, crushed stone surfacing, backfill and bedding • Synthetic materials in form of plastic lumber for landscaping, horticulture and hydraulic engineering • Manufacture of rubber slate tile use in roofing and sport / playground surface mat • Manufacture of lightweight concrete for non-structural works
Special Waste	<ul style="list-style-type: none"> • Chemical Waste (defined under Schedule 1 of the Waste Disposal (Chemical Waste) Regulations) • Asbestos • Contaminated soil 	<ul style="list-style-type: none"> • Chemical Waste Treatment Centre or other facilities licensed by EPD (Environmental Protection Department) • Gazette hazardous waste disposal site • Gazette disposal site for contaminated soil
General Refuse	<ul style="list-style-type: none"> • Paper, cardboard, aluminum cans, plastic bottles 	<ul style="list-style-type: none"> • Selectively segregate for recycling • Dispose at refuse transfer stations

Appendix E

Monthly Summary of Waste Flow Table & Record of Timber Usage

MONTHLY SUMMARY WASTE FLOW TABLE

Name of Department :

Contract No.: DC/2009/17

Monthly summary waste Flow Table for 2010 (year)

Date	Actual Quantities of Inert C & D Materials Generated Monthly							Actual Quantities of non-inert C & D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 5)	Soil/Slurry (see Note 5)	Reused in the contract	Reused in other Projects on site	Disposed to Public Fill	Imported Fill	Metals	Paper cardboard packaging	Plastics (see Note 3)	Chemical wastes	Others e.g. General refuses
	(in Ton)	(in Ton)	(in Ton)	(in m ³)	(in m ³)	(in m ³)	(in '000m ³)	(in Ton)	(in '000kg)	(in '000kg)	(in 'L)	(in 'TON)
Jan-10												
Feb-10												
Mar-10												
Apr-10												
May-10												
Jun-10												
July-10												
August-10	0	0	0	0	0	0	0	0	0	0	0	0
September-10	0	0	0	0	0	0	0	0	0	0	0	0
October-10												
November-10												
December-10												
Total	0	0	0	0	0	0	0	0	0	0	0	0

Forecast of Total quantities of C&D Materials to be Genated from the Contract							Forecast of Total quantities of non-inert C&d Materials to be Genated from the Contract				
Total Quantity Generated	Hard Rock and Large Broken Concrete	Soil/Slurry	Reused in the contract	Reused in other Projects	Disposed to Barging Point	Imported Fill	Metals	Paper cardboard packaging	Plasties (see Note 3)	Chemical wastes	Others e.g. General refues
(inTon)	(inTon)	(inTon)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(inTon)	(in '000kg)	(in '000kg)	(in 'L)	(inTon)
27350	5230	22,120	-	-	13152	-	812000	1000	2000	492	514

Notes:

- (1) The performance targets are given in PS Clause 6(14)
- (2) The waste flow table shall also include C& D materials that are specified in the Contract to be imported for use at the Site
- (3) Plasties refer to plastic bottles/containers, Plastic sheets/form from packaging material.
- (4) The Contractor shall also submit the latest forecast of the total amount of C& D materials aspected to be generated from the Works together with a breakdown of the nature where the total amount of C & D materials expected to be generated from the Works is equal to or exceeding 30,000m (PS Clause 8(4) (to refers)[Delete Note (4) and the table above on the foreman where inapplicable.
- (5) The density of Broken Concrete and soil are 2.5 ton/m³ and 2.0 ton/m³ respectively

Appendix D

Waste Classification and their Recommended Usage / Outlet

Waste Stream	Waste Type	Recommended Usage/Outlet
Inert Materials to Public Fill	<ul style="list-style-type: none"> • Aggregate, debris, soil and concrete • Excavated and Fill Materials 	<ul style="list-style-type: none"> • On-site reuse whenever possible • Re-process as construction materials • Reclamation and site formation at Public Filling Areas
Non-inert Materials (less than 30% by weight of inert material) to Landfill	<ul style="list-style-type: none"> • Bamboo, timber, plants, packaging waste and other organic waste • Metal (including steel mesh, reinforcement bars, window frames, railings, banisters, etc.) • Glass • Plastic, Rubber • Expanded polystyrene 	<ul style="list-style-type: none"> • Selectively segregate for reuse or recycling • Timber over specific length shall be used as much as practicable • Licensed steel mills in Hong Kong or approved overseas steel mills for re-processing for metal products • Substitute for sand and aggregates as pipe-bedding material, gravel backfill for walls, crushed stone surfacing, backfill and bedding • Synthetic materials in form of plastic lumber for landscaping, horticulture and hydraulic engineering • Manufacture of rubber slate tile use in roofing and sport / playground surface mat • Manufacture of lightweight concrete for non-structural works
Special Waste	<ul style="list-style-type: none"> • Chemical Waste (defined under Schedule 1 of the Waste Disposal (Chemical Waste) Regulations) • Asbestos • Contaminated soil 	<ul style="list-style-type: none"> • Chemical Waste Treatment Centre or other facilities licensed by EPD (Environmental Protection Department) • Gazette hazardous waste disposal site • Gazette disposal site for contaminated soil
General Refuse	<ul style="list-style-type: none"> • Paper, cardboard, aluminum cans, plastic bottles 	<ul style="list-style-type: none"> • Selectively segregate for recycling • Dispose at refuse transfer stations

Appendix E

Monthly Summary of Waste Flow Table & Record of Timber Usage

MONTHLY SUMMARY WASTE FLOW TABLE

Name of Department :

Contract No.: DC/2009/17

Monthly summary waste Flow Table for 2010 (year)

Date	Actual Quantities of Inert C & D Materials Generated Monthly							Actual Quantities of non-inert C & D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 5)	Soil/Slurry (see Note 5)	Reused in the contract	Reused in other Projects on site	Disposed to Public Fill	Imported Fill	Metals	Paper cardboard packaging	Plastics (see Note 3)	Chemical wastes	Others e.g. General refuses
	(in Ton)	(in Ton)	(in Ton)	(in m ³)	(in m ³)	(in m ³)	(in '000m ³)	(in Ton)	(in '000kg)	(in '000kg)	(in 'L)	(in 'TON)
Jan-10												
Feb-10												
Mar-10												
Apr-10												
May-10												
Jun-10												
July-10												
August-10	0	0	0	0	0	0	0	0	0	0	0	0
September-10	0	0	0	0	0	0	0	0	0	0	0	0
October-10												
November-10												
December-10												
Total	0	0	0	0	0	0	0	0	0	0	0	0

Forecast of Total quantities of C&D Materials to be Genated from the Contract							Forecast of Total quantities of non-inert C&d Materials to be Genated from the Contract				
Total Quantity Generated	Hard Rock and Large Broken Concrete	Soil/Slurry	Reused in the contract	Reused in other Projects	Disposed to Barging Point	Imported Fill	Metals	Paper cardboard packaging	Plastics (see Note 3)	Chemical wastes	Others e.g. General refues
(inTon)	(inTon)	(inTon)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(inTon)	(in '000kg)	(in '000kg)	(in 'L)	(inTon)
27350	5230	22,120	-	-	13152	-	812000	1000	2000	492	514

Notes:

- (1) The performance targets are given in PS Clause 6(14)
- (2) The waste flow table shall also include C& D materials that are specified in the Contract to be imported for use at the Site
- (3) Plastics refer to plastic bottles/containers, Plastic sheets/form from packaging material.
- (4) The Contractor shall also submit the latest forecast of the total amount of C& D materials aspected to be generated from the Works together with a breakdown of the nature where the total amount of C & D materials expected to be generated from the Works is equal to or exceeding 30,000m (PS Clause 8(4) (to refers)[Delete Note (4) and the table above on the foreman where inapplicable.
- (5) The density of Broken Concrete and soil are 2.5 ton/m³ and 2.0 ton/m³ respectively

Summary Table for Work Processes or Activities Requiring Timber for Temporary Works

Contract No.: DC/2009/17

Contract Title: Harbour Harbour Area Treatment Scheme Stage 2A Upgrading Works at Stonecutters Island Sewage Treatment Works
- Sludge Dewatering Facilities.....

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 Engineer's Representative monthly together with the Waste Flow Table for review and monitoring in accordance with the PS Clause 25.40(5).

Appendix F

Sample of CHIT, Disposal Delivery Form & Daily Summary Record

EPD231

入帳票編號: 06437754
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:

發人: _____
Issued by:

建築廢物產生地點:
Construction Waste Generated Site:
STONECUTTERS ISLAND
SEWAGE TREATMENT PLANT

帳戶編號: 7011408
Account No.:

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

入帳票編號: 06437754
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:
CHINA STATE CONST ENG
(H.K.) LTD & ATAL ENG LTD
TRADING AS CHINA STATE
- ATAL JOINT VENTURE

帳戶編號: 7011408
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

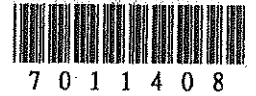
車牌號碼: _____
Vehicle Registration Mark:



有效期至: Not Applicable
Valid Until:

建築廢物產生地點:
Construction Waste Generated Site:
STONECUTTERS ISLAND SEWAGE TREATMENT
PLANT

帳戶名稱:
Name of the Account-holder:
CHINA STATE CONST ENG (H.K.) LTD & ATAL
ENG LTD TRADING AS CHINA STATE - ATAL
JOINT VENTURE



CEDD 土木工程發展部
Civil Engineering and
Development Department

環境保護署
Environmental
Protection
Department

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

H 253665

A SAMPLE OF "DAILY RECORD SUMMARY" TO RECORD DAILY DISPOSAL OF CONSTRUCTION & DEMOLITION (C&D) MATERIALS FROM THE SITE

- (1) Contract no. & title: _____
- (2) Date of disposal: _____
- (3) Designated disposal ground(s): (a) _____
 (b) _____
 (c) _____
 others _____
- (4) Approved alternative disposal grounds: _____

DDF Serial no.	Vehicle registration no.	Departure time from site	Approx. vol (e.g. Full/Three Quarter/Half/One quarter)	C&D material type (e.g. inert or non-inert)	Actual disposal ground	Arrival time at disposal ground	Remarks



Submitted by : _____ *[Name of Contractor's Designated Person]*
 Signature : _____
 Date : _____
 Received by : _____ *[Name and signature of the officer]*
 Post : _____
 Date & Time : _____

Submitted by : _____ *[Name of Contractor's Designated Person]*
 Signature : _____
 Date : _____
 Received by : _____ *[Name and signature of the officer]*
 Post : _____
 Date & Time : _____

¹ Part 1 - The Contractor shall complete Part 1 and submit it to the Engineer's Representative by 1:00 pm of the following working day of the disposal trip.
² Part 2 - The Contractor shall complete Part 2 and submit it to the Engineer's Representative within 3 working days of the disposal trip.

THE GOVERNMENT OF THE HKSAR
 Fill B / t Tuen Mun Area 38
 TRANSPORTATION RECORD
 香港特別行政區政府屯門第38區填料庫交收記錄

入帳票編號: 06437674
 Chit No.:

選擇「」一個訂明設施
 Tick One Prescribed Facility
 堆填區 篩選分類設施
 Landfills 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:

LW 1064

使用日期: 29/11/2010
 Date of Use:

簽發人: 
 Issued by:

帳戶名稱:
 Name of the Account-holder
 CHINA STATE CONST ENG
 (H.K.) LTD & ATAL ENG LTD
 TRADING AS CHINA STATE
 - ATAL JOINT VENTURE

92 11 2010

帳戶編號: 7011408
 Account No.:

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

Date: 2010-11-29
 日期
 Vehicle No.: LW1064
 車輛登記號碼
 Time in: 11:25:08
 進入時間
 Source of Material: Shamshuiipo
 物料來源地
 Contract No.: DC/2008/17
 工程合約編號
 Weight in (tonne): 21.93
 入載重量 [公噸]
 Net vehicle load (tonne): 9.38
 物料淨重量 [公噸]
 Amount (HK\$): 253.80
 總款 [港幣]
 Chit No.: 06437674
 記帳單編號

Trans. Ref. No.: 100284280
 備考號碼
 Classifying Label: Mixed rock and soil
 車輛標識類別
 Time out: 11:31:25
 離開時間
 Type of Material: Mixed rock and soil
 物料類別
 DDF Serial No.: 0002944001
 運載記錄票編號
 Weight out (tonne): 12.55
 出載重量 [公噸]
 Charged load (tonne): 9.40
 收費重量 [公噸]
 Account No.: 7011408
 帳戶編號

Remarks:
 備註

REASONS FOR REJECTING
 R1: Unsuitable Material
 R2: Invalid Dumping Licence
 R3: Invalid Dumping Licence
 R4: Unmatched DDF Information
 R5: Suspended/Invalid Chit Account
 R6: Suspended VRM Account
 R7: Others

拒進原因一覽表
 R1: 物料不符合要求
 R2: 無有效卸泥執照
 R3: 無有效卸泥執照
 R4: 運載記錄票資料不符
 R5: 記帳單已暫停/無效
 R6: VRM帳戶已暫停
 R7: 其它

"This is not a formal record of payment. All information is subject to final verification."
 此記錄並非正式收費收據。所有資料須經最後核對後方可作實。