


# Lamma Power Station Extension Piling Foundation Works for Unit L12

## Waste Management Plan (Revision 2)

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# Sunley Engineering & Construction Co., Ltd.

Lamma Power Station Extension Foundation Works for Unit L12

Waste Management Plan

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# Sunley Engineering & Construction Co., Ltd.

Lamma Power Station Extension Foundation Works for Unit L12

Waste Management Plan

## 1. Introduction

### 1.1 Background

This Waste Management Plan (WMP) is for the Lamma Power Station Extension Piling Foundation Works for Unit L12 which provides details of the measures to manage and control all environmental issues that may arise during the construction period.

## 2. Purpose of the Plan

The major works in piling foundation of L12 include bored piles and socketed h-piles. Such works are planned to commence in April 2019 and take around 12 months to complete. A Site Layout Plan for the above works is enclosed in **Appendix 1**.

**2.1** Under condition 2.7 of EP No. EP-071/2000/C, it requires the Permit Holder to deposit a Waste Management Plan to the Director of Environmental Protection at least two weeks prior to the commencement of the construction works.

**2.2** This Plan aims to describe the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste generated from the construction activities. The Plan also estimates the waste generation of the whole construction period of the piling contract. The Plan provides the descriptions of information, guidance and instruction to personal in charge with environmental responsibilities as per the requirements of EM&A Manual (Construction Phase).

**2.3** The Plan has also included the designation of areas for segregation and temporary storage of reusable and recyclable materials.

## 3.0 Category of Waste Materials

**3.1** The piling foundation works will/may generate the following materials:

- Excavated materials
- Construction waste
- Chemical waste
- General refuse
- Wastewater

## 4.0 Legislation and Guidelines

### 4.1 Statutory Requirements

The following legislations either cover, or have some bearings upon, the handling, treatment and disposal of wastes of the piling foundation works in Hong Kong:

- Waste Disposal Ordinance (Cap 354)
- Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C)
- Land (Miscellaneous Provisions) Ordinance (Cap 28)
- Public Health and Municipal Services Ordinance (Cap 132)



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- Environmental Impact Assessment Ordinance (Cap 499)
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap 354N)
- Water Pollution Control Ordinance;
- Water Pollution Control (General) Regulations.

## 4.2 Additional Guidelines

Other guideline documents which detail how the construction works should comply with the regulations are as follows:

- Government's Waste Reduction Framework Plan
- Environmental Impact Assessment of a 1800MW Gas-Fired Power Station at Lamma Extension
- Environmental Permit No. EP-071/2000/C
- Environmental Monitoring & Auditing Manual for Lamma Extension (Construction Phase), Reference C2037/1 38539 (2001)
- Waste Disposal Plan for Hong Kong (December 1989), Planning, Environment and Lands Branch Government Secretariat
- Environmental Guidelines for Planning in Hong Kong (1990), Hong Kong Planning and Standards Guidelines, Hong Kong Government
- New Disposal Arrangements for Construction Waste (1992), Environmental Protection Department & Civil Engineering Department
- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (1992), Environmental Protection Department
- Works Branch Technical Circular No. 12/2000, Fill Management, Works Branch, Hong Kong Government
- Works Branch Technical Circular No. 2/93, Public Dumps, Works Branch, Hong Kong Government
- Works Branch Technical Circular No. 2/93B, Public Filling Facilities, Works Branch, Hong Kong Government
- Works Branch Technical Circular No. 16/96, Wet Soil in Public Dumps, Works Branch, Hong Kong Government
- Works Bureau Technical Circular No. 4/98 and 4/98A, Use of Public Fill in Reclamation and Earth Filling Projects, Works Bureau, Hong Kong SAR Government
- Development Bureau Technical Circular (Works) No. 6/10, Trip-ticket System for Disposal of Construction and Demolition Material; Development Bureau, HKSAR Government
- Works Bureau Technical Circular No. 29/2000, Waste Management Plan; Works Bureau, HKSAR Government
- Environment, Transport and Works Bureau Technical Circular (Works) No. 19/05, Environmental Management on Construction Sites

The anticipated statutory permits/licences required for the piling works are the Public Dumping Licence for excavated and construction waste materials and the registration of producer of chemical waste under the Waste Disposal (Chemical Waste) (General) Regulation and Water Pollution Control Ordinance License. These permits/licences will be obtained prior to the handling of the waste materials. In addition, pursuant to the Waste Disposal (Charges for Disposal of Construction Waste) Regulation, the Contractor will apply a billing account to EPD within 21 days after being awarded of the contract. The

application has been submitted to EPD on 11 March 2019 (application no. RE04238)

## 5.0 Management Organization and Responsibility

In line with the arrangement committed in the EM&A Manual for construction phase of Lamma Extension project, the management of waste will be proceeded jointly by the Contractor, the Engineer, the Environmental Team (ET) and the Independent Environmental Checker (IEC). An Environmental Management Committee (EMC) has been set up in HK Electric to oversee the EM&A programme including the waste management issues of the Lamma Extension project. The organization and management structure with respect to waste management works is illustrated in **Figure 1** and outlined in the following sections.

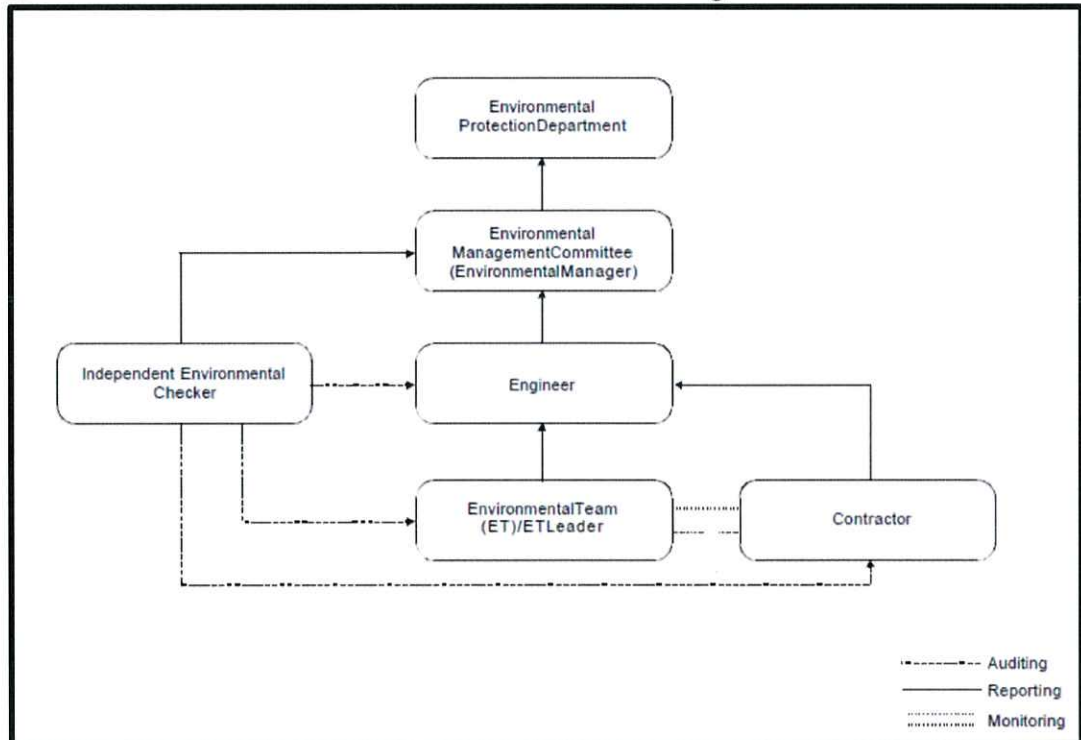


Figure 1: Management Organization for Waste Management Works for L12 Piling Foundation Works

The organization structure of the Contractor on waste management for piling foundation works is shown in **Figure 2**.

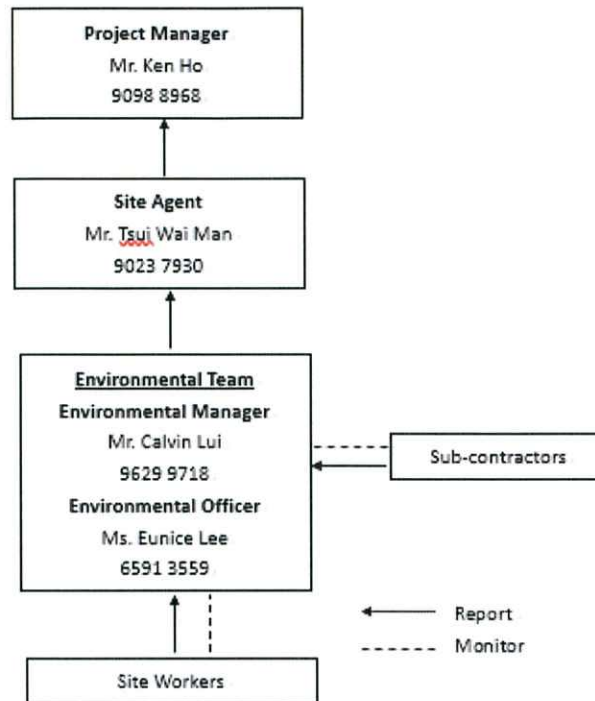


Figure 2: Organization structure of the Contractor on waste management for piling foundation works

## 5.1 Engineer or Engineer's Representative

The Engineer or Engineer's representative is responsible for the implementation of the Waste Management Plan. The Contractor will follow the procedures, sequences and methodology of construction work for waste management as stipulated in the relevant document including method statement for construction work, EP, EM&A Manual, EIA Report and the Plan.

The Engineer shall appoint appropriate members of the project team and resident site staff to manage and supervise the work of the Contractor, the ET Leader and its various specialist teams and other professional delegates. The Engineer will monitor the Contractor's compliance with the contract specifications and work statement including the effective implementation of the Plan. The Engineer will instruct the Contractor to follow the agreed protocols or the relevant document in event of non-compliance or complaints.

## 5.2 Environmental Team (ET)

An ET has been set up to implement the environmental monitoring work as required by the EM&A Manual to assure the construction work being carried out in a way of full compliance with statutory requirements and the Plan. The ET will monitor the EM&A performance of the Contractor and collect the data for compilation of the monthly EM&A reports. The ET will undertake regular site inspection to certify the environmental acceptability of the construction work and the effectiveness of the mitigation and control procedures set out in the Plan and the EM&A Manual.

## 5.3 Independent Environmental Checker (IEC)



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An IEC has been appointed by HK Electric. The IEC is responsible for independently audit the implementation of the Plan and ensuring the works are undertaken in compliance with the Plan and the conditions in the EP.

## ***5.4 Contractor's Project Manager (PM)***

The Project Manager is the management representative of the Contractor. He takes the overall responsibilities for the waste management issues of the project, include oversee the WMP implementation and provide resources and facilities for the implementation of the WMP.

## ***5.5 Contractor's Environmental Manager (EM)***

The Environmental Manager shall be responsible for reviewing the Waste Management Plan regularly, provide advices on measures to be taken in the interest of environmental protection, and implement such measures. The EM will advise the Contractor on the implementation of an environmental management system.

## ***5.6 Contractor's Environmental Engineer (EE)***

The Environmental Engineer shall manage the environmental issues of the project with responsibilities to liaise on all matters relating to environmental monitoring and auditing. The EE will participate in the regular environmental inspection with the ET for identifying potential hazards to the environment and to report findings with recommendations for corrective actions. The EE will supervise and monitor the environmental performance on the Site to ensure that any polluting or potentially polluting situation is promptly rectified. The Environmental Engineer will assist to compile the monthly environmental report and other environmental documents for submission to HK Electric. The EE will arrange and provide the environmental training including the site specific induction training and toolbox talks for the staff and workers on the Site, and to organize environmental promotional activities.

## ***5.7 Contractor's Site Agent/ General Foreman***

The Site Agent and General Foreman shall assist the PM in overseeing the environmental works on site with responsibilities to supervise the execution of waste management work by the workers on site; and ensure that all workers and subcontractors implement the mitigation measures as stipulated in the Plan.

## ***5.8 Subcontractors and Site workers***

The subcontractors and site workers will assist Contractor's EE in his/her management of on-site waste issues. The subcontractors and site workers shall follow the environmental policy that issued by the Contractor. The subcontractors may nominate representatives to attend the joint site inspections and ensure that follow-up actions have been taken promptly against defects identified.

## **6.0 Hierarchy of Waste Management Practices**

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The hierarchy of various waste options is shown below:

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

This plan would attempt to elevate waste management practices to the higher priority options as far as practicable.

## 7.0 Environmentally Responsible Purchasing

In the context of waste reduction, environmentally responsible purchasing involves the introduction of practices that discourage unnecessary purchases and encourage the purchase of products with improved recyclability, reduced packaging, greater durability, and where economically rational, with high recycled content. Examples are recycled paper, steel and other raw materials.

Waste minimization is best achieved through careful planning, design and supervision. Good management practices can reduce and prevent the large amount of waste generated. Raw materials can be managed from the first instance before they are ordered and delivered to site. Good estimation and planning can minimize the amount of raw materials wasted. The generation of waste shall be controlled at sources.

## 8.0 Types and Sources of Waste and Control Measures

Construction activities for the piling foundation works may result in the generation of various wastes, which can be divided into the following distinct categories based on their composition:

- Excavated materials
- Construction waste
- Chemical waste
- General refuse
- Wastewater

The reuse, recycling, treatment and disposal can be effected by proper segregation

practices exercised on site. Individual measures for these wastes are described in the following sections.

## ***8.1 Excavated Materials***

### ***8.1.1 Types and Sources***

Excavated materials will be generated from the bored pile construction work which comprises of sand, alluvial clay and highly weathered rock. The estimated total quantity of excavated materials is in the order of 30,000m<sup>3</sup>.

### ***8.1.2 Control Measures for Excavated Materials***

Excavated materials such as sand and weathered rock suitable for filling work will be segregated and utilized for future filling work within the Lamma Power Station Extension platform. Other unsuitable excavated materials such as alluvial clay will be disposed of to public filling areas. The tentative temporary storage area for stockpiling and sorting of the suitable excavated materials is shown in **Appendix 1**.

The Contractor shall maintain disposal record for the excavated materials which shall be available for inspection by the Engineer at any time. The disposal records shall contain the basic information of the waste such as date, time, quantity, location of disposal, name of the vessel, authorized signature, CHIT records etc. The detailed information of disposed excavated materials will be included in the monthly EM&A Report.

## **8.2 Construction Waste**

### ***8.2.1 Types and Sources***

Construction wastes comprise of unwanted materials generated during construction, including rejected materials which have been over ordered or are surplus to requirements. The major construction activity in the piling foundation works is the bored pile construction and construction waste on used formwork is insignificant. The major construction wastes will arise from the following activities:

- Scrap metals from off-cuts, rebar, steel pipes and packaging
- Plastic and paper from pre-formed products and packaging.
- Unusable/surplus concrete/grout; and
- Damaged/contaminated construction materials.

It is estimated that 100m<sup>3</sup> of concrete debris, 35 tonnes of steel bars and etc. will be generated throughout the construction period.

### ***8.2.2 Control Measures***

- (a) Careful design, planning and good site management shall be maintained to minimize waste of materials such as ready mixed concrete, steel bars and cement grouts.
- (b) Construction waste materials shall be, as much as possible and practicable,



separated into reusable items and materials to be disposed of or recycled. It shall be conducted at the immediate working area to avoid loss or leakage during handling.

- (c) The construction waste materials arising from or in connection with the construction works shall be sorted on-site and be separated into different categories for disposal at landfills, public filling areas, or reuse and recycling as appropriate. Useful materials such as steel/metal shall be segregated for reuse. For example off-cuts of reinforcement shall be sorted into usable lengths and short off cuts stacked for scrap metal. Where it is no longer reusable, steel and metal items will be sent as scrap for recycling. The tentative temporary storage area for stockpiling and sorting of the construction waste materials is highlighted in **Appendix 1**.
- (d) The remaining non-reusable construction waste materials shall be sorted on-site into the inert portion (e.g. rock, brick, bituminous material, concrete and soil, etc.) and non-inert portion (e.g. timber, vegetation and paper, etc.) containing no more than 20% by volume of inert content. The inert portion shall be disposal of at the public filling areas whilst the non-inert portion shall be tipped at the landfills by licensed waste haulier.
- (e) For each and every transportation trip of construction waste materials off-site to the public filling areas and landfills, a Construction Waste Material CHIT shall be produced and completed in duplicate. The Contractor shall maintain disposal records for the construction waste and shall be kept available for inspection by the Engineer at any time. The disposal records shall contain the basic information of the waste such as date, time, quantity, location of disposal site, name of the vessel, authorized signature, CHIT records etc. The detailed information of disposed construction waste will be included in the monthly EM&A Report.
- (f) In addition, pursuant to the Waste Disposal (Charges for Disposal of Construction Waste) Regulation, the Contractor will apply a billing account to EPD within 21 days after being awarded of the contract. The application has been submitted to EPD on 11 March 2019 (application no. RE04238).

## 8.3 Chemical Waste

### 8.3.1 Types and Sources

The chemical wastes generated from the construction sites will primarily arise from the maintenance of plant and equipment. These may typically include oils, lubricants, paints and solvents. It is estimated that about 2,000 litres of spent oil will be generated throughout the period of piling foundation works. The tentative storage area for chemical wastes is highlighted in **Appendix 1**.

### 8.3.2 Control Measures

- (a) For chemical waste produced from a process, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, a 'Chemical Waste Producer' registration shall be made with the EPD.
- (b) Preventive measures shall be implemented for leakage and spillage of fuel and lubricating oil to avoid contamination of the construction site. Oily water accumulated in drip trays shall be regularly removed to prevent oily water from overflowing into the surface water drainage system and ground water tables. Oil



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and fuel bunkers and diesel drums shall be banded by drip trays to accommodate oils from accidental spillages. Waste collected from drip trays shall be collected and disposed of by licensed chemical waste collector.

- (c) All plants and equipment shall carry out regular maintenance.
- (d) Good housekeeping practices adopted to deal with chemical wastes include:

Generating less chemical wastes through:

- Delivering appropriate quantity of chemicals to the construction site.
- Avoiding unnecessary wastage of chemicals by using the chemicals more sensibly and in accordance with the manufacturer's instructions.
- Finishing one bottle/container of chemicals before opening the next one for use.
- Collecting the remaining chemicals in suitable containers.
- Removing the unused chemicals out of the construction site after completion of the project.

Preventing illegal discharge of chemicals or chemical wastes through staff training and education.

Minimizing the volume of unused chemicals to be disposed of through:

- Using the chemicals before the expiry date.
- Ordering appropriate quantity of chemicals and avoiding unnecessary storage of excess chemicals.

- (e) Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Waste. The details are described as follows.

Containers used for the storage of chemical waste shall:

- be suitable for the substance they are holding, resistant to maintained in a good condition, and securely closed;
- have a capacity of less than 450 litres unless the specification has been approved by EPD; and
- display a label in English and Chinese in accordance with instruction prescribed in Schedule 2 of the Regulations.

- (f) The storage area for chemical wastes shall:

- be clearly labelled and used solely for the storage of chemical waste;
- be enclosed on at least three sides;
- have an impermeable floor and bunding, 110% capacity of the largest container or 20% of the storage capacity, whichever is the greatest;
- have adequate ventilation;
- be covered to prevent rainfall entering (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.

- (g) Chemical waste shall be disposed of:

- via a licensed chemical waste collector; and

- in a waste treatment or disposal facility licensed under the Waste Disposal Ordinance which is to receive chemical wastes such as the Chemical Waste Treatment Centre
- (h) Prior approval from EPD shall be sought by the Contractor prior to disposal of chemical waste to landfill. Trip tickets issued for every chemical waste collection and made by the licensed waste collector shall be kept by the contractor and made available for the inspection by the Engineer at any time.
- (i) Site personnel involved in chemical waste handling shall be instructed and be familiar with the waste handling procedures and guidelines.
- (j) In case of emergency situations, the contractor shall notify the relevant government departments and the Engineer for follow up action.
- (k) The Contractor shall maintain disposal record for the chemical waste which shall be available for inspection by the Engineer at any time. The disposal records shall contain the basic information of the waste such as date, time, quantity, location of disposal, name of the vessel, authorized signature, etc. The detailed information of disposed chemical waste will be included in the monthly EM&A Report.

## 8.4 General Refuse

### 8.4.1 Types and Sources

General refuse will be generated mainly by food service activities for site workers and from office work and construction work. General refuse may include food wastes and packaging, waste paper etc. It is estimated that 3m<sup>3</sup>/week of general refuse will be generated throughout the piling foundation construction period. The tentative temporary storage area for general refuse is highlighted in **Appendix 1**.

### 8.4.2 Control Measures

Office wastes will be reduced through recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme would be considered if one is available.

- (a) To encourage environmental awareness and try to reduce waste by reducing the number of photo copies to a minimum and by copying on both sides of paper for internal documents and external documents where appropriate. Electronic media shall be used for communication as far as practicable to reduce the use of papers. Recycling bins for papers shall be provided in site office to facilitate the recycling of papers.
- (b) Recycling bins for aluminium cans shall also be provided near the site office area to facilitate the recycling of aluminium cans.
- (c) General refuse including food wastes, such as lunch box, and domestic wastes generated on-site shall be stored in refuse bins separate from construction and chemical wastes.
- (d) A reputable waste collector shall be employed to remove general refuse from the site, separate from construction and chemical wastes, on a daily or every second day basis to minimize odour, pest and litter impacts. No burning of



refuse on site will be permitted.

- (e) Dumping at the sea will be strictly prohibited and the close monitoring and supervision of Contractor's compliance will be carried out by the Engineer and the ET at a frequent basis on site.
- (f) The Contractor shall maintain disposal record for the general refuse which shall be available for inspection by the Engineer at any time. The disposal records shall contain the basic information of the waste such as date, time, quantity, location of disposal, name of the vessel, authorized signature, etc. The detailed information of disposed general refuse will be included in the monthly EM&A Report.

## 8.5 Wastewater

### 8.5.1 Types and Sources

The major activities to generate wastewater or muddy water include: pre-drilling works, bored piling works and wheel washing activities. In addition, muddy water or muddy surface runoff shall be generated from earthworks, exposed site areas and stockpiled materials. It is estimated that about 110 m<sup>3</sup>/day of wastewater will be generated throughout the period of piling foundation works.

### 8.5.2 Control Measures

A wastewater treatment system shall be installed near the wheel washing bay to treat the wastewater / muddy water. The wastewater from the works areas is collected in the preliminary sedimentation pit where the heavy matters (e.g. sand, grit and mud) are removed through physical treatment. The wastewater is pumped into the reaction tank where the suspended solids are flocculated through chemical treatment by two chemicals (Clarifloc-1 and Clarifloc-2). As necessary, the pH value of the wastewater shall be adjusted with sulphuric acid to comply with the wastewater discharge licence. Upon completion of the flocculation process, the wastewater enters the sedimentation tank and settles as sludge at the tank bottom. The sludge is discharged into the sludge pit for further thickening. Sludge will be either mixed with dry soil or as slurry to be disposed at public fill bank. Disposal record of the sludge will be documented.

Under the *Water Pollution Control Ordinance*, off-site discharge of wastewater shall require a wastewater discharge licence which stipulates specific criteria for water quality. The Contractor shall comply with all requirements of the discharge licence. It shall obtain a discharge licence before commencing any discharge from the site, and take water samples at the discharge points if required by the Environmental Protection Department.

- (a) Wherever practicable, the Contractor shall instruct site workers to minimise exposed soil areas in order to reduce siltation, contamination of runoff and erosion.
- (b) The Contractor shall provide sufficient temporary ditches, drainage pipes and / or culverts for collection of site runoff to the nearby drainage. Prior to the discharge, sedimentation tanks shall be provided for treatment of effluent to comply with the relevant discharge standards as stipulated in the wastewater discharge licence. The sedimentation tanks shall be of sufficient capacity, flexible and able to handle multiple inputs from various sources.
- (c) The Contractor shall arrange site workers to inspect, maintain and clean all the



sedimentation and site drainage facilities regularly or as necessary to ensure their proper and efficient operations, particularly after rainstorms.

## 9.0 Preventive and Corrective Practices

9.1 The Contractor is responsible for waste control within the construction site, removal of waste material produced by the site and the implementation of any mitigation measures to avoid or minimize potential adverse impacts associated with waste arising from the construction activities. The Contractor should follow the procedures in the Waste Management Plan, approved work statement, recommendation in the EIA Report and the EM&A Manual. One set of the relevant documents including statutory permits and licences will be kept on site at any time for reference. The Engineer will monitor the Contractor's compliance with the contract specifications and work statement including the effective implementation of the Waste Management Plan.

9.2 The Environmental Team together with Contractor's Environmental Engineer will undertake the site inspection at regular interval of about once per week and on ad hoc basis. The site inspections provide a direct means to track and ensure the enforcement of specified environmental protection and waste control measures. Contractor's EE will assist to correct the deficiency identified during the inspection, corresponding photo shall be taken to record the improvements and mitigations made. The ET inspection results and their associated recommendations on improvements to the environmental protection including waste management shall be submitted to the Engineer within 24 hours for reference and for taking immediate action. They shall also be presented, along with the remedial actions taken, in the monthly EM&A Report. The Contractor shall follow the procedures and timeframe stipulated in the environmental site inspection for implementation of mitigation proposals and the resolution of deficiencies in the Contractor's practices.

9.3 When non-conformances are identified at the site, whatever found by the Engineer or the ET, following corrective plan will be implemented:

- The Contractor, ET Leader and the Engineer will be notified.
- The Contractor is required to check the work procedures and make amendment, if applicable, submit proposal for remedial action to Engineer within 3 working days upon request for implementation.
- The Engineer will check contractor's work method and proposal for remedial action, if applicable, and supervise the implementation of remedial action.
- The ET will identify the cause of non-conformance, discuss with the Contractor/Engineer on the remedial actions and undertake additional site monitoring on the remedial action, if required.

The Contractor shall adopt the following procedure to handle the non-conformances:

- Non-conformances received shall be referred to the Environmental Engineer (EE) for conducting an investigation.
- The EE shall check the site record, inspect the site activities and analyze the information collected about the non-conformances.
- The EE shall recommend remedial measures with the Project Manager if the complaint is related to the works. If the non-conformances is not related to the works, the Contractor shall notify the ET.

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- The team shall implement the remedial measures on site.
- The Contractor shall notify the results of the non-conformances, to the ET if the remedial measures are effective. The EE shall discuss further remedial measures with the Project Manager and ET if the problem is not rectified effectively.
- The Contractor shall close the case if the deficiency satisfies, or discuss the next action with the ET if the incompliance does not satisfy.
- The EE and General Foreman shall maintain a registration system to record the details below: reference number, date of receiving non-conformances, location of nuisance, date, nature / details of non-conformances, investigation results, remedial measures, and file closing date.

**9.4** In case of emergency situation (e.g. leakage of fuel oil or splash of waste into sea), the Contractor shall notify the relevant government department (Marine Department, Fire Services Department, Environmental Protection Department, etc.) and the Engineer for follow up action.

## **10.0 Training**

Training regarding waste management conducted by the Contractor shall be held to review relevant statutory regulations and waste management practice to all levels of staff as well as subcontractors except workers. Relevant contract requirements shall also be discussed in the training.

Tool-box talks shall be given to all workers and subcontractor's representatives at regular intervals as a mean to promote environmental awareness and provide updated information regarding waste management practices as well as handling of chemical spillage. All foremen and supervising personnel of the Contractor/Sub-contractor shall be trained regarding the presentation of the toolbox talks.

Contractor shall provide regular training on waste management practices to the workers and sub-contractor in connection to the construction schedule to comply with the contractual requirement.

## **11.0 Reporting**

All licenses, permits and records obtained shall be updated and submitted to the Engineer every month. Contractor shall report to the ET if any update of license and permits is made, a copy shall also be submitted to ET for record and the original copy shall keep in Contractor's site office.

The EE/ PM shall report the site environmental issues to the ET during the monthly Site Environmental Committee (SEC) meeting. The ET shall inform the Contractor the site environmental deficiencies and approve the Contractor's preventive and remedial measures for the environmental deficiencies during the meeting. The environmental issues, environmental deficiencies, public complaints, etc., and their preventive & remedial measures will be discussed in the meeting.

Site inspections will be conducted with the Environmental Team and the Environmental Engineer of the Contractor at agreed intervals. Any deficiencies identified during the inspection will be recorded and reported to the ET, prompt remedy action shall be taken to correct the defect. The amount of waste generated and the results of waste management



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practices being implemented on site will be provided in the monthly EM&A reports as committed in Section 7.4 of the EM&A Manual.

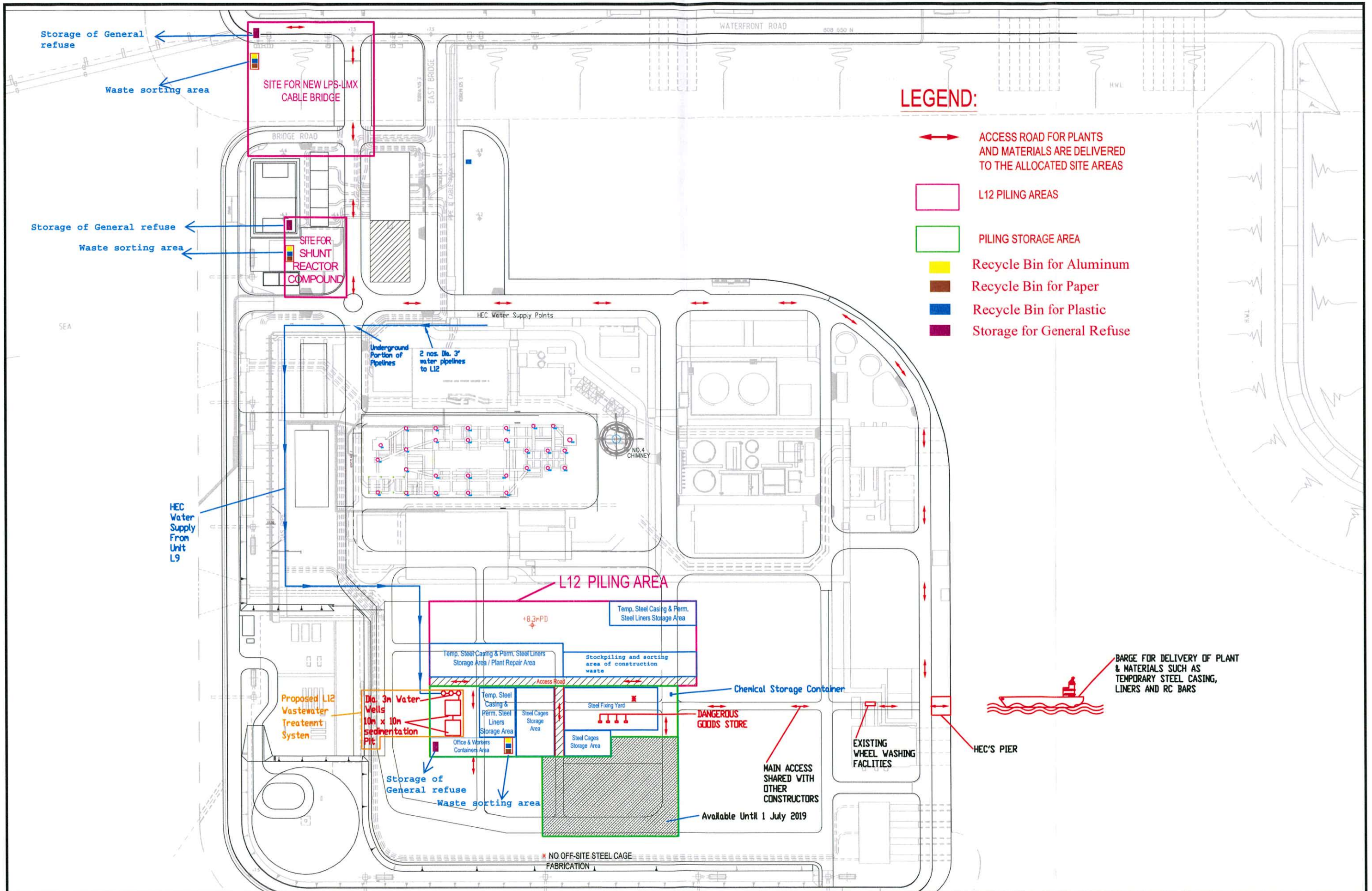
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# **Appendix 1**

# **Site Layout Plan**

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- LEGEND:**
- ACCESS ROAD FOR PLANTS AND MATERIALS ARE DELIVERED TO THE ALLOCATED SITE AREAS
  - L12 PILING AREAS
  - PILING STORAGE AREA
  - Recycle Bin for Aluminum
  - Recycle Bin for Paper
  - Recycle Bin for Plastic
  - Storage for General Refuse

BARGE FOR DELIVERY OF PLANT & MATERIALS SUCH AS TEMPORARY STEEL CASING, LINERS AND RC BARS

NO OFF-SITE STEEL CAGE FABRICATION

Available Until 1 July 2019

Issue	Date	By	Checked	Approved

**SUNLEY** ENGINEERING & CONSTRUCTION CO., LTD.  
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香港電燈有限公司  
 The Hongkong Electric Co., Ltd.  
 Projects Division

**港燈**  
 HK Electric

Project	LAMMA POWER STATION EXTENSION - UNIT12		
Drawing Title	Proposed Setup Layout Plan		

Drawn	Checked	Approved
Scale	N.T.S.	Date
Drawing No.	L12-SL-01	Rev. No.
		DEC-2018