

# 1 Introduction

## 1.1 Project Background

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Currently, about 5 million tonnes of waste are disposed each year at the three strategic landfills in Hong Kong, including the West New Territories (WENT) Landfill, the South East New Territories (SENT) Landfill and the North East New Territories (NENT) Landfill.

In order to maintain the continuity of landfill capacity for disposal of wastes, the Director of Environmental Protection commissioned a study CE45/99 on “Extension of Existing Landfills and Identification of Potential New Waste Disposal Sites” in 2000. The study (CE45/99) was completed in early 2003 and proposed a Strategic Plan for the development of landfill extension and new sites for the disposal of solid wastes in the next 50 years.

In early 2007, Ove Arup & Partners Hong Kong Limited (Arup) has been appointed by the Waste Facilities Group of the Environmental Protection Department (EPD) of the Hong Kong Special Administrative Region Government to carry out the feasibility study for the West New Territories Landfill Extensions.

The WENT Landfill Extension form an integral part in the Strategic Plan in maintaining the continuity of landfill capacity in the West New Territories. The project is to develop the WENT Landfill Extension (about 200 hectares with capacity of 81Mm<sup>3</sup>) lying between the existing WENT Landfill and the Black Point Power Station at Nim Wan.

The eastern part of the site is located in Tsang Kok Valley which is a hilly terrain site sparsely vegetated with grass and limited patched of shrubs. The easterly ridge forms a boundary with the existing landfill. The northern part is the CLP Tsang Tsui Ash Lagoons and the former BBC Relay Station. The southern area is bounded by the natural topography, with ridgelines rising southwards from the coastline to meet the major east-west trending ridgeline at about +290mPD. The southern part of the site will also encroach onto the Tsing Shan Firing Range.

The location plan of the WENT Landfill Extension site is shown on **Figure 1.1**.

## 1.2 Purpose and Scope of the EIA Study

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The purpose of this EIA Study is to provide information on the nature and extent of environmental impacts arising from the construction, operation, restoration and aftercare stages of the WENT Landfill Extension and to contribute to decisions on the overall acceptability of the Project, after the implementation of environmental mitigation measures.

This Project is a designated project under Schedule 2, G.1, of the Environmental Impact Assessment Ordinance (EIAO): “A landfill for waste as defined in the Waste Disposal Ordinance (Cap. 354)”. An application (No. ESB-117/2004) for an Environmental Impact Assessment Study Brief (EIA SB) under section 5(1)(a) of the EIAO was submitted by the Applicant (ie the Waste Facilities Group of EPD) on 28 Apr 2004 with a project profile (No. PP-214/2004).

Pursuant to section 5(7)(a) of the EIAO, the Director of Environmental Protection issued an EIA SB (ref: EIA Study Brief No: ESB-117/2004 dated 10 Jun 2004) to the Project Proponent to carry out an EIA Study.

### **1.3 The Approach**

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The EIA study has been prepared in accordance with the guidelines provided in Annex 11 of the TM-EIAO for the report contents and Annexes 12 to 19 for the impact assessments of various environmental issues. The general approaches and methodologies adopted for this EIA study are described below.

#### **1.3.1 Description of the Environment**

The characteristics of the existing environment were reviewed for identification and prediction of environmental impacts. Where necessary, baseline surveys were conducted to determine the existing environmental conditions on the Project site and in any environs likely to be affected by the Project. The baseline conditions of the key issues as identified in the EIA Study Brief including air quality, noise, water quality, landscape & visual, cultural heritage and ecology are described in the assessment.

#### **1.3.2 Impact Prediction**

The EIA Study was undertaken in accordance with the guidelines on assessment methodologies given in Annexes 12 to 19 of the TM-EIAO. Where appropriate, quantitative predicting tools were employed for assessing the environmental impacts in respect of construction dust, operation air quality, construction noise, operation noise and water quality. The predictions were conducted based on well-recognized methods such as Arup plant noise impact analysis for construction activities, CRTN for evaluating operation road traffic noise impact, Ausplume for evaluating fugitive and odorous source impacts etc.

Similar methodologies had previously been adopted in other EIA studies. They have been generally accepted for use in predicting environmental impacts and for comparison of assessment results with the TM-EIAO requirements. In carrying out the prediction, realistic worst-case assumptions have been made in order to provide a conservative assessment of environmental impacts.

#### **1.3.3 Impact Evaluation**

The predicted changes and effects as a result of the Project were evaluated with respect to the criteria described in Annexes 4 to 10 of the TM-EIAO and were in quantitative terms as far as practicable.

#### **1.3.4 Impact Mitigation**

Mitigation measures have been identified and evaluated to avoid, minimize or remedy the impacts. Priority was given to avoidance of impacts as a primary means of mitigation. The effectiveness of mitigation measures was assessed and the residual environmental impacts identified. Evaluation of impact was made with respect to the criteria described in Annexes 4 to 10 of the TM-EIAO, in quantitative terms as far as practicable.

### **1.4 Structure of the EIA Report**

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The structure of this EIA Report is outlined below for ease of reference:

<u>Chapter</u>	<u>Title</u>	<u>Aims</u>
1	Introduction	To provide project background, purpose and scope of the EIA Study and to define the EIA study area.
2	Description of the Project	To describe the project requirements, consideration of alternative and major activities in the Project.
3	Air Quality Impact	To assess the potential air quality impact of the Project and suggest mitigation measures.

4	Noise Impact	To assess the potential noise impact of the Project and suggest mitigation measures.
5	Water Quality Impact	To assess the potential water quality impact of the Project and suggest mitigation measures.
6	Waste Management Implications	To assess the potential waste management implications of the Project and suggest mitigation measures.
7	Landfill Gas Hazards	To assess the potential hazards arising from landfill gas migration and suggest precautionary measures.
8	Landscape and Visual Impact	To assess the potential landscape and visual impacts of the Project and suggest mitigation measures.
9	Impact on Cultural Heritage	To assess the potential impacts of the Project on cultural heritage and suggest mitigation measures.
10	Ecological Impact	To assess the potential ecological impacts of the Project and suggest mitigation measures.
11	Potential Environmental Impact associated with Pulverized Fuel Ash	To assess the potential environmental impact associated with Pulverized Fuel Ash of the Project and suggest mitigation measures.
12	Environmental Monitoring and Audit Requirements	To define the scope of the EM&A requirements for the Project.
13	3-Dimensional EIA	To describe the 3-dimensional EIA for this Study.
14	Conclusion	To conclude the assessment results of the EIA Study.