Appendix A

Replacement Pages of Updated Environmental Assessment

Prepared by

Ramboll Hong Kong Limited

SECTION 16 APPLICATION FOR PROPOSED FLAT, SHOP AND SERVICES, AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN “RESIDENTIAL (GROUP E)” ZONE AT NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON

ENVIRONMENTAL ASSESSMENT

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Project Reference	CRC_4TYSEI00
Document No.	R9624_v1.3

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- General refuse generated by the workforce;
- Chemical and oily wastes due to maintenance of equipment; and
- Asbestos Containing Materials (ACM)

Key sources of C&D materials

It is anticipated that the majority of C&D materials will be generated from the following key construction activities:

- Demolition existing industrial buildings;
- Site Clearance.
- Site formation;
- Excavation of ground for basement of the Proposed Development; and
- Building construction.

C&D Materials

5.4.2 C&D materials comprise mainly of unwanted materials, including surplus materials arising from excavations that are generated from the works (e.g. site clearance, demolition works of substructure, site formation works, excavation work for basement). Inert soft C&D materials comprise of soil, sand, clay, slurry, etc., while hard C&D materials comprise of crushed concrete, asphalt, rock, etc. The amount of non-inert C&D materials generated during site clearance would be minor (as there is little vegetation at the Application Site). C&D materials may comprise different types of materials, including:

- Inert C&D materials (also known as public fill, including soil, rock debris, rubble earth, concrete, etc.) do not decompose and are suitable to reuse as filling materials for land reclamation and site formation. Inert C&D materials could be reused on-site as filling materials. For those inert C&D materials that cannot be reused should be delivered to CEDD designated public fill reception facilities.
- Non-inert C&D materials (also known as C&D waste, including bamboo, timber, paper, metal, glass, plastic, packaging wastes, etc.). Non-inert C&D materials should be reused or recycled as far as possible. For those non-inert C&D materials that cannot be reused or recycled, they should be disposed of at designated landfill sites as last resort.

5.4.3 The general waste management strategy is to avoid waste generation in the first place. Should it be unavoidable, reduction and segregation at-source should be exercised as far as practicable, and recycling and reuse should be adopted at the same time to salvage all the recyclable and reusable materials as much as possible.

5.4.4 According to ETWB TC(W) 19/2005 on "Environmental Management on Construction Sites", waste management plan (WMP) becomes part of Environmental Management Plan (EMP) to be submitted to Architect/ Engineer for approval before construction works. The Project team will require the Contractor(s) to submit WMPs for approval. The WMPs will include appropriate mitigation measures to avoid, reduce, reuse and recycle C&D materials. It will ensure that the day-to-day operations on site comply with the approved WMPs. It will control the delivery of inert C&D materials and non-inert C&D materials to public fill reception facilities and landfills, respectively, through a trip-ticket system. It will require the Contractor(s) to separate public fill from C&D materials for delivery at appropriate facilities. It will record the delivery, reuse and recycling of C&D materials for monitoring purposes.

5.4.5 The site area of the Application Site is approximately 2,419m^2 with 1 existing industrial building. It is assumed that the buildings is 7-story with 3m floor height. Assuming the

inert and non-inert C&D materials produced during the demolition is 90% and 10%, 36,900m^3 and 4,100m^3 of inert and non-inert C&D materials will be produced in this stage. Assuming 1m depth would be excavated for site formation, it is estimated that 2,179 m^3 of inert C&D materials and 240 m^3 of non-inert C&D materials would be generated respectively. For the area of the basement in the Proposed Development is 1,800m^2 with 9m depth (which is a conventional headroom for basement level). Considerations will be made to minimise the excavation extent as practicable as possible while ensuring the parking provision can meet the HKPSG standard. It is estimated that 16,200m^3 of inert C&D materials are generated from excavation, assuming 100% inert C&D materials. During the building construction, with appropriately 16,691m^2 GFA and assuming 90% are inert C&D materials and 10% non-inert C&D materials, 1,530m^3 and 170m^3 of inert and non-inert C&D materials will be produced. Therefore, it is estimated that about 56,809m^3 of inert C&D material and 4,510m^3 of non-inert C&D material will be generated during the course of construction (including demolition, site formation, basement excavation and building construction).

5.4.6 The Contractor(s) should be responsible for ensuring that all on-site wastes will be collected by approved waste collectors and appropriate measures should be undertaken to minimise adverse impacts to the surrounding environment, such as dust generation. The Contractor(s) must also ensure that all necessary waste disposal permits have been obtained before actions.

5.4.7 Prior to disposal of non-inert C&D materials, it is recommended that wood, steel, glass and other metals will be collected separately for re-use and/or recycling and inert C&D materials utilized as fill materials to minimize the quantity of waste to be delivered to the Public Fill Reception Facilities and landfill. The details are shown in Table 5.1.

5.4.8 All the soil generated from the underground work should be refill on site to form the site to the required level. Other C&D materials should be used on-site as far as practicable.

5.4.9 Project Administration Handbook for Civil Engineering Works, Section 4.1.3 Management of Construction and Demolition Material Including Rock published by CEDD to enhance the management of C&D materials and to minimise their generation at source. The enhancement measures include drawing up a Construction and Demolition Material Management Plan (C&DMMP) at an early design stage to minimise C&D materials generation and encourage proper management of such materials.

5.4.10 Under DEVB TCW No. 6/2010 Trip Ticket System for Disposal of Construction and Demolition Materials, for all contracts that are expected to generate inert C&D materials requiring disposal from site, the project office should write to the Public Fill Committee (PFC) through Secretary of the PFC to request a designated disposal ground for incorporation into the tender documents. For contracts where the estimated amount of non-inert C&D materials to be generated from the contract is less than 50,000 m^3, the project office is not required to apply to DEP for designated landfill facilities, but it should still specify in the tender documents of the appropriate landfill facilities for disposal.

Chemical Waste

5.4.11 Construction plant and equipment will require regular maintenance and servicing, which would generate waste such as solvents, lubrication oil and fuel, etc. Chemical wastes arising during the construction phase may pose serious environmental, health and safety hazards if not stored and disposed of in an appropriate manner.

5.4.12 It is difficult to quantify the amount of chemical wastes as it will solely depend on the contractor's on-site maintenance practice and the quantities of plant and vehicles

refuse into the nearby storm drain should not be permitted as introduction of these wastes is likely to have detrimental effects on water quality in the area. Effective collection of site wastes would be required to prevent waste materials being blown around by wind, flushed or leached into the surrounding environment, and odour nuisance. The work site may also attract pests and vermin if the waste storage area is not well maintained and cleaned regularly.

5.4.19 Recyclable materials (i.e., food scraps and container, paper, plastic bottles and aluminium cans) will be separated for recycling, in order to reduce the amount of general refuse to be disposed of at landfill. Adequate number of enclosed waste containers will be provided to avoid over-spillage of waste. The non-recyclable refuse will be placed in bags and stored in enclosed containers and disposed of on a daily basis to designated landfill.

5.4.20 With the implementation of recommended waste management practices at the site, adverse environmental impacts would not arise from the storage, handling and transportation of general refuse.

Land-based Sediment

5.4.21 It is noted that the Application Site is situated on reclaimed land. However, at this planning stage, there is no detailed information on the land-based sediment (i.e., GI record) within the Site. The GI record of project "East Kowloon Sewerage Improvements and Pollution Control, Stage I" (shown Appendix 5.1), which is located to the Northeast (~20.86m) from the site boundary. The report presented that there are no marine deposits observed above -2.18mPD (i.e. below ground 6.3m) and no record below -2.18mPD. Meanwhile, as shown in the MLP (Appendix 1.1), the concrete structure of the proposed basement carpark may reach -4.60mPD (i.e. below ground 9m). In view of this, the land-based sediment maybe expected within the Project Site and maybe encountered during the piling and excavation works associated with the construction of the basement.

5.4.22 Once the relevant information such as GI records are available the presence of land-based sediment shall be further reviewed and studied in the subsequent stage. In case land-based sediment are anticipated, the Consultant shall adequately address its associated the potential environmental impacts, including but not limited to, quantity estimation, handling arrangement, disposal options, and mitigation measures to be taken. It is recommended that the Land-based sediment would be reused onsite as much as possible; otherwise, the handling and disposal of these excavated materials in accordance with "Guidance Note. No. 1/2024" under the Dumping at Sea Ordinance, Cap. 466" and "Dumping at Sea Ordinance (Cap.466)".

5.4.23 A Sediment Sampling and Testing Plan (SSTP) shall be prepared with reference to PNAP No. 252 (ADV-21) and submitted to EPD for approval. This Plan details the ranges of parameters to be analysed; the number, type and methods of sampling; sample preservation; and chemical and biological laboratory test methods to be used.

5.4.24 The allocation of sediment disposal space at sea will not be considered until the need for removal of the sediment has first been satisfactorily demonstrated. The rationale for sediment removal must therefore be provided to the Secretary of MFC for agreement, as early as possible, preferably at subsequent stage, if one is conducted. Volumes of Category L sediment below 50,000 m^3 are exempted from this requirement.

5.4.25 Table 5.1 below presents the estimation of C&D materials generated during construction phase.

Table 5.1 Summary Table of Estimated C&D Materials during Construction Phase

Construction activities	Factor / Assumption adopted	Estimated Quantities of C&D Materials Generated
Demolition of Existing Building	• Site Area:2,149 m^2 • Existing Building Height: 21m (7-Story with 3m floor height) • Ratio for Inert and Non-Inert C&D Materials: 9:1	• Inert C&D Materials generated: 36,900 $m^{3(b)}$ • Non-inert C&D Materials generated: 4,100$m^{3(c)}$
Site formation	• Site Area:2,149 m^2 • Anticipated Site Formation Depth: 1m	• Inert C&D Materials generated: 2,179 $m^{3(b)}$ • Non-inert C&D Materials generated: 240$m^{3(c)}$
Excavation of Basements	• Excavation Area:1,800 m^2 • Excavation Depth: 9m • Ratio for Inert and Non-Inert C&D Materials: 9:1 • Anticipated Land-based Sediment Depth: 2.7m (i.e. 9m -6.3m)	• Inert C&D Materials generated: 16,200 $m^{3(b)(f)}$ • Maximum Volume Land based Sediment: 4,860m^3 (The actual volume is subject to the detail design stage)
Buildings Construction	• GFA: 16,691m^2 (Refer Appendix 1.1) • Ratio for Inert and Non-Inert C&D Materials: 9:1	• Inert C&D Materials generated: 1,530 $m^{3(b)}$ • Non-inert C&D Materials generated: 170$m^{3(c)}$

Note:

(a) The above estimated quantities are subject to detailed design.

(b) Assuming the density of inert C&D materials is 1.8 tones/m^3. With ~102,256 tones inert C&D material, the number of dump truck is anticipated to be less than 26 trucks/day (assuming each truck can carry 15 tones and there is around 270 working day per year) (reference Approved Planning Application Y/H5/8)

(c) Assuming the density of non-inert C&D materials is 1.0 tones/m^3. With ~4,510 tones non-inert C&D material, the number of dump truck is anticipated to be less than 2 trucks/day (assuming each truck can carry 15 tones and there is around 270 working day per year) (reference Approved Planning Application Y/H5/8)

(d) The destination of inert C&D materials is subject to the designation by the Public Fill Committee according to DEVB TC(W) No.6/2010

(e) The disposal of non- inert C&D materials is subject to agreement with relevant section of the EPD

(f) The assumption of the Inert C&D Materials generated from excavation may have double-counting with the land-based sediment, The actual volume is subject to the detail design stage.

5.4.26 Table 5.2 presents the estimation of waste generated during construction phase.

Table 5.2 Estimated Quantities of Waste during Construction Phase

Waste Material	Estimated Waste Generation	Proposed Disposal Method and Destination
Inert C&D Material	~56,809 m^3	~0.5% (i.e. 284 m^3) would be reused and the remaining (i.e. 99.5% or ~56,525 m^3) would be delivered offsite to public fill reception facilities
Non-Inert C&D Material	~4,510 m^3	Disposal to landfill
General Refuse	Generation rate: 0.65 kg/ worker/ day Workers: ~ 50 ppl ~33 kg/day	Recyclables to recyclers; Non-recyclables to landfill
Chemical Waste	Anticipated to be limited (not more than 100L of chemical waste) ACM: TBP	To be collected by licensed chemical waste collectors and deliver to Chemical Waste Treatment Centre For ACM, the only proven method for disposing of asbestos in Hong Kong is by secure burial in a landfill site
Land-based Sediment	4,860 m^3 (The actual volume is subject to the detail design stage)	To be reused onsite as much as possible Handling and disposal of sediment to the sediment disposal space at sea, detailed refer to Section 5.4.23 and Section 5.4.24

5.5 Mitigation Measures During Construction Phase

5.5.1 The mitigation measures for construction phase are recommended based on the waste management hierarchy principles. Recommendations of good site practices, waste reduction measures as well as the waste transportation, storage and collection are described in following sub-sections.

Good Site Practices

5.5.2 Appropriate waste handling, transportation and disposal methods for all waste arisings generated during the construction phase should be implemented to ensure that construction waste do not enter the nearby sensitive receivers.

5.5.3 It is expected that adverse impacts from waste management would not arise, provided that good site practices are strictly followed. Recommendations for good site practices during construction include:

- Nomination of approved personnel, such as a site manager, to be responsible for good site practices, and making arrangements for collection of all wastes generated at the site and effective disposal to appropriate facilities;
- Training of site personnel in proper waste management and chemical waste handling procedures;
- Provision of sufficient waste disposal points and regular collection for disposal;
- Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;