

**Attachment 3: Replacement Pages of Environmental  
Assessment**

Floor Level	L02	L03	L04	L05	L06	L07	L08	L09	L10	L11
NAP id	+11.9m PD	+15.1m PD	+18.3m PD	+21.5m PD	+24.7m PD	+27.9m PD	+31.1m PD	+34.3m PD	+37.5m PD	+40.7m PD
<b>65</b>	47	47	47	47	47	47	47	49	51	54
<b>66</b>	47	47	47	47	47	47	47	49	51	53
<b>67</b>	47	47	46	46	46	47	47	48	50	53
<b>68</b>	46	46	46	46	46	46	47	48	51	54
<b>69</b>	46	46	46	46	46	46	47	48	50	53

Remarks:

The predicted road traffic noise levels are rounded to the nearest whole numbers.

Those exceeding the HKPSG criteria,  $L_{10(1\text{hour})}$  70 dB(A) are pointed out as bold and underlined.

3.7.6 **Table 3.7** and **Table 3.8** indicate that there are exceedances of the predicted traffic noise levels over the HKPSG traffic noise criteria,  $L_{10(1\text{hour})}$  70 dB(A), and the noise levels during the daytime are higher than the nighttime. It is observed that all the NAPs at the southern portion of the Proposed Development orienting to the IEC will be exposed to a road traffic noise level exceeding  $L_{10(1\text{hour})}$  70 dB(A), and at some floor levels will reach **83 dB(A)**. This notwithstanding, given the site characteristics and orientation, the flexibility in the layout and building design and the practical examples of the adoption of innovative noise mitigation designs in various residential developments along IEC, mitigation measures through combination of building layout and innovative noise mitigation measures are considered and confirmed to be feasible in the context of this proposed development. The Developer is committed to implement all necessary mitigation measures through combination of appropriate building design and noise mitigation measures as described in ProPECC PN 5/23 “Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact” (ProPECC PN 5/23) including single aspect building design, architectural fins, acoustic windows and balconies, etc., to address the road traffic noise impact in the detail design stage and to fully mitigate the adverse road traffic noise impact **meeting the standards and requirements stipulated under HKPSG** and present the updated Traffic Noise Impact Assessment (TNIA) in the S16A application stage and/or land title document.

## 3.8 Mitigation Measures during Construction Stage

3.8.1 Construction activities shall be carried out during daytime of normal working days. The mitigation measures recommended in ProPECC PN1/24 should be implemented where applicable. In addition, the following measures and on-site practice are recommended to minimise the potential construction noise impacts during daytime:

- Quiet PME and construction method should be adopted if possible.
- The Contractor shall devise and execute working methods to minimise the noise impacts on the surrounding sensitive uses and provide experienced personnel with suitable training to ensure that those methods are implemented.
- Regular maintenance of equipment.
- Noisy equipment and noisy activities should be located as far away from the NSRs as is practical.

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## Feasible Mitigation Measures for Noise Sensitive Uses

- 3.9.8 The priority of mitigating traffic noise shall focus on reducing the exposure to noise. It is suggested that the rooms at which external façades are facing IEC should be designed for non-habitation use. For example, it is suggested to locate kitchens, toilets, and store rooms at the southern portion of the buildings. These areas would not be classified as noise sensitive use, and can serve as insulation between the noise source and the rooms for sensitive use. Besides, the rooms for habitation purpose shall be arranged at the northern side of the Proposed Development as far as possible. The orientation toward the Victoria Harbour would utilise the shielding effect of the building geometry and footprint and by nature would result in lower level of the traffic noise level received. This design approach reduces the possibility of the residents being exposed to high levels of traffic noise impact.

### Acoustic Window and Acoustic Balcony

- 3.9.9 According to ProPECC PN 5/23, the Possible Designs of “Acoustic Window (Baffle Type)” for 8m<sup>2</sup> rooms parallel to dominant line source provide a reduction of L<sub>10(1-hour)</sub> 6 dB(A), while possible designs of “Enhanced Acoustic Balcony (Baffle Type)” in 14m<sup>2</sup> parallel to dominant line source provide a reduction of L<sub>10(1-hour)</sub> 8 dB(A). As shown in **Figure 3-4**, about 26% of the predicted traffic noise levels are between L<sub>10(1-hour)</sub> 71 to 78 dB(A). Acoustic Window and Enhanced Acoustic Balcony would be adopted where necessary to meet the HKPSG’s standards and requirements. As the correction for specific type of acoustic window and acoustic balcony mentioned in ProPECC PN 5/23 are applicable to specific room size, dimension, opening, gap width, etc., should there be any variation on the proposed acoustic window and acoustic balcony, justifications together with technical documents, e.g. corrections based on acoustic principles, laboratory testing reports, in-situ measurement reports, etc. would be submitted to the EPD for consideration.

### Single Aspect Building Design and Non-Openable Windows

- 3.9.10 It is foreseen that the traffic noise levels at the façade close to IEC (for instance, the NAP No. 3 at Tower 1 of the Proposed Development) will be subject to a traffic noise level exceeding L<sub>10(1-hour)</sub> 78 dB(A) and reaching L<sub>10(1-hour)</sub> 83 dB(A). Providing adequate reduction through at-receiver mitigation measures might be difficult. As the last resort, no opening shall be provided if the facades are facing the IEC and at-receiver mitigation measures are not sufficient. Single aspect building design and non-openable windows would be adopted where necessary to meet the HKPSG’s standards and requirements.

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3.9.11 In summary, several feasible mitigation measures are discussed for consideration based on the predicted traffic noise levels. It is demonstrated that the traffic noise impact on the Proposed Development is surmountable and can be effectively mitigated through a series of multi-level measures. The Developer is committed to implement feasible mitigation measures in the detailed design stage of the Proposed Development to fully mitigate the adverse road traffic noise impact. The noise mitigation designs / measures would be exhausted and incorporated where necessary to meet the HKPSG's standards and requirements. An updated road traffic noise impact assessment will be conducted based on the finalised architectural design of the Proposed Development in the detailed design stage, and the schedule for the implementation of the noise mitigation measures will be determined accordingly.

## 3.10 Conclusions: Noise

3.10.1 The proposed development would generate construction noise impact. With the implementation of the recommended standardised mitigation measures, construction noise impacts from the Proposed Development would not be adverse.

3.10.2 During the operation stage, the Proposed Development may induce fixed plant noise impact due to the installation of outdoor E&M equipment and might cause annoyance due to noise generated in events. The outdoor E&M equipment shall be designed in accordance with the criteria stipulated in HKPSG and NCO. Noise insulation and control measures shall be implemented as far as applicable. The event organiser shall follow the Noise Control Guidelines for Music, Singing and Instrument Performing Activities and implement appropriate management practice to prevent annoyance caused due to events. It is anticipated that the Proposed Development would not cause adverse noise impact to the surrounding environment during its operation stage.

3.10.3 The preliminary assessment in this Environmental Assessment report has indicated that the fixed plant noise impacts and traffic noise impact on the Proposed Development would be surmountable, and has demonstrated the feasibility of mitigating the associated adverse impact. The fixed noise impact from the nearby existing noise sources shall be evaluated by conducting noise measurements. Road traffic noise impact from the road network to the Proposed Development shall be re-assessed based on the finalized architectural design. An updated noise impact assessment will be conducted in the TPO Section 16 planning application for residential developments which would be affected by noise impact. It is anticipated that the fixed noise impact and traffic noise impact on the Proposed Development will be evaluated thoroughly at the detailed design stage, and mitigation measures will be determined to ensure the compliance with HKPSG and NCO.

3.10.4 In conclusion, the noise impact arising from the construction and operation of the Proposed Development is assessed based on the best available information at this stage, and no adverse or insurmountable noise impact is anticipated with the implementation of feasible noise mitigation measures in the detailed design stage.

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5.5.11 Should marine sediment be encountered during excavation, the sediment should be treated and reused on site or at concurrent projects as much as possible. In case marine dumping is required, rationale for the removal of sediment, sediment sampling and testing plan, preliminary sediment quality report / sediment quality report shall be submitted in accordance with the Administrative Guidance – Management Framework for Disposal of Dredged/Excavated Sediment published by the EPD.

#### Chemical Waste

5.5.12 Chemical waste arising during the construction phase would induce environmental, health and safety hazards if not stored and disposed of in an appropriate manner as stipulated in the Waste Disposal (Chemical Waste) (General) Regulations. The potential hazards include:

- Toxic effects to workers;
- Adverse impacts on water quality from spills; and
- Fire hazards.

5.5.13 The maintenance and servicing of construction plant and equipment may generate some chemical wastes such as used solvents, contaminated rags and waste lubricating oil. It is difficult to quantify the amount of chemical waste that will arise from the construction activities since it will be dependent on the contractor's on-site maintenance requirements and the amount of plant utilised. However, it is anticipated that the quantity of chemical waste, such as waste lubricating oil and solvents produced from plant maintenance, will be small and estimated to be a few litres per month. The amount of chemical waste to be generated will be quantified in the Waste Management Plan (WMP) to be prepared by the Contractor for the site.

5.5.14 Materials classified as chemical wastes will require special handling and storage arrangements before removal for offsite disposal at the approved Chemical Waste Treatment Centre (CWTC) or recycling by licensed facilities. Mitigation and control requirements for chemical wastes are detailed in **Section 5.6**. Provided that the handling, storage and disposal of chemical wastes are in accordance with these requirements, adverse environmental impacts are not expected.

#### General Refuse

5.5.15 The maximum number of workforce to be employed for the Project is expected at 100 workers. Based on a generation rate of 0.65 kg per worker per day, the general refuse arises from local workforce during construction phase is estimated at 65 kg/day.

5.5.16 Such refuse will be properly managed so that intentional or accidental release to the surrounding environment will be avoided. Disposal of refuse at sites other than approved waste transfer or disposal facilities will be prohibited. Effective collection of site wastes will be required to prevent waste materials being blown around by wind, flushed or leached into the marine environment, or creating an odour nuisance or pest / vermin problem. Waste storage areas will be well maintained and cleaned regularly.

5.5.17 Separate bins shall be provided to ensure general refuse is segregated from recyclable materials such as wastepaper, plastic and aluminium cans. It is recommended that general refuse should be collected daily for disposal. Provided that the mitigation measures as detailed in **Section 5.6** are adopted, and the implementation of good waste management practices at the site, adverse environmental impacts are not expected to arise from the storage, handling and transportation of workforce wastes.

**Table 5.2: Estimated Quantities of Wastes to be Generated during Construction Phase**

Activities	Waste Type			
	Inert C&D Materials (m <sup>3</sup> ) <sup>[1]</sup>	Non-inert C&D Materials (m <sup>3</sup> ) <sup>[2]</sup>	Chemical Waste	General Refuse
Site Clearance	1,706 <sup>[3]</sup>	0	N/A	N/A
Basement Excavation	93,852 <sup>[4]</sup>	0		
Construction of Superstructure	3,497.85 <sup>[5]</sup>	388.65 <sup>[5]</sup>		
Maintenance and Operation of Mobile Equipment	0	0	A few litres per month	
Local Workforce	0	0	0	100 workers at 65 kg/day
<b>Total</b>	99,055.85	388.65	A few litres per month	100 workers at 65 kg/day
Management Options	On-site reuse: As much as possible PFRFs: 99,055.85	Recycle: 77.73 (Assuming recycling rate at 20%) Landfill: 310.92	Reduce and reuse before offsite disposal	Segregate general refuse from recyclables
Recommended outlets	Transport to PFRFs at Tseung Kwan O Area 137	Reduce and recycle as much as possible before disposal to landfill at West New Territories Landfill	Collected by a licensed collector to be disposed at the CWTC	Recycle as much as possible before disposal to landfill at West New Territories Landfill

**Notes:**

- [1] Inert C&D materials include all grade rocks, topsoil and excavated soil, broken concrete, asphalt, bitumen and granular materials, etc.
- [2] Non-inert C&D materials include, but not limited to, bamboo, timber, paper, plastic and general refuse etc. that cannot be transported to PFRFs.
- [3] Assuming slab thickness of 0.2m, site area of 8,532m<sup>2</sup>, and concrete density of 2,400kg/m<sup>3</sup>.
- [4] Assuming depth of basement is 11 m, site area of 8,532m<sup>2</sup>, and soil density of 1,600kg/m<sup>3</sup>.
- [5] The amount is estimated based on a gross floor area (GFA) of 38,865m<sup>2</sup> of the proposed development. With reference to the "Reduction of Construction Waste Final Report" (PolyU, 1993), a C&D materials generation rate of 0.1m<sup>3</sup> per 1m<sup>2</sup> GFA is adopted. A ratio of 1:9 for non-inert: inert C&D materials is adopted with reference to the "Monitoring of Solid Waste in Hong Kong, 2024" issued by the EPD.

## Operation Phase

### General Refuse

5.5.18 Majority of wastes generated during operation phase would be general refuse arising from the commercial activities and housing residents of the Proposed Development. No significant waste implication is anticipated as the quantity of general refuse is expected to be reasonable with implementation of appropriate control measures, no adverse waste implications are anticipated during operation phase.

5.5.19 The estimated general refuse arising from the commercial activities and housing residents is summarised in **Table 5.3**, based on the estimated number of occupants, showing about 0.73tpd of wastes to be generated during the full operational phase. This estimate assumed no waste reduction measure to reduce the demand for valuable landfill space. Based on information from the EPD, the major components of municipal solid wastes in Hong Kong included food waste, glass, metals, paper, plastics and putrescible. Most of these materials are recyclable which could significantly reduce the amount for final disposal.

**Table 5.3: Estimated Quantities of Wastes to be Generated during Operation Phase**

Planned Number of Occupants	EPD's Waste Generation Rate	Estimated Waste Arising	Example of Waste	Management Options and recommended outlets
600 from the commercial activities	0.53kg/person/day <sup>[2]</sup>	0.32tpd <sup>[3]</sup>	<ul style="list-style-type: none"> <li>General Refuse</li> <li>Recyclable Waste</li> </ul>	Recycle as much as possible before disposal to landfill at West New Territories Landfill
429 (+10% allowance = 472) <sup>[1]</sup>	0.86kg/person/day <sup>[2]</sup>	0.41tpd		
<b>Total</b>	1.40kg/person/day	0.73tpd		

**Notes:**

- [1] The flat number adopted for technical assessment shall be 165 + 10% allowance for infrastructure capacity. Average domestic household size at 2.6 from 12/2024 – 2/2025 according to the Census and Statistics Department.
- [2] Commercial and industrial waste at 0.53kg/person/day and domestic waste of 0.86 kg/person/day according to Plate 2.7 Per capita disposal rates of MSW, domestic waste and commercial & industrial waste from 2015 to 2024, Monitoring of Solid Waste in Hong Kong, Waste Statistics for 2024.  
<[https://www.wastereduction.gov.hk/sites/default/files/resources\\_centre/waste\\_statistics/msw2024\\_eng.pdf](https://www.wastereduction.gov.hk/sites/default/files/resources_centre/waste_statistics/msw2024_eng.pdf)>
- [3] tpd denotes tonnes per day.

5.5.20 General refuse should be collected on a daily basis and delivered to the refuse collection point accordingly. A reputable waste collector should be employed to remove general refuse regularly to avoid odour nuisance or pest/vermin problems. Sufficient recycling containers are recommended to be provided at suitable and noticeable locations in the area to encourage recycling of waste such as food waste, aluminium cans, plastic bottles and wastepaper. The management offices of the new development should minimise the amount of waste to be disposed of at landfill and maximise the recovery of materials from the waste stream. With the implementation of recommended mitigation measures described below, no adverse environmental impact is anticipated.

**Waste Collection and Disposal**

5.5.21 An effective and efficient waste handling system is essential in order to minimise potential environmental impacts for the waste storage, collection and transport, as such impacts may include odour if waste is not collected frequently; water quality if waste enters storm water drains; aesthetics and vermin problems if the waste storage area is not well maintained and cleaned regularly. The waste handling system may also facilitate materials recovery and recycling.

5.5.22 A refuse collection room could be installed in each building at the ground floor for localised refuse collection and the waste would be transported to a Central Refuse Collection Chamber (CRCC) using electrical vehicles subject to future consideration during detailed design stage. The waste could be sorted to recover materials (such as paper and cardboards, plastics, metals and batteries, etc.) as far as possible, prior to be compacted into containers at the CRCC.

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## 8. CONCLUSIONS: OVERALL

8.1.1 This Environmental Assessment (EA) has indicated that the Proposed Development will not generate any unacceptable environmental impacts during construction and operation phases, provided that all the recommended mitigation measures and good site practice are strictly implemented. The Applicant of the Proposed Development is committed to provide, implement and maintain all the mitigation measures as recommended in this EA Report.

8.1.2 Specific conclusions for air quality, noise, water quality, waste management, land contamination and sewage impact are as follows:

### Air Quality

8.1.3 With the implementation of the air quality control measures and good site practice, unacceptable impacts during the construction phases are not anticipated. No further mitigation measures are needed.

8.1.4 Overall, therefore, no adverse air quality impact is anticipated during the construction phases of the Proposed Development.

8.1.5 A quantitative air quality impact assessment has been carried out separately to confirm that no adverse air quality impact on the Proposed Development will occur during operation phase (see Appendix 6 of Planning Statement).

### Noise

8.1.6 During the construction phase, with the implementation of the recommended mitigation measures, the construction noise impacts on the NSRs shall be minimized.

8.1.7 During the operational phase of the Proposed Development, the E&M equipment of the Proposed Development will be designed to ensure compliance with the NCO and HKPSG, and the noise from the events will be controlled through appropriate management practices. As such, no adverse fixed noise impact will be anticipated from the Proposed Development and the noise from the exhibition use will not cause nuisance.

8.1.8 The traffic noise impact on the Proposed Development has been preliminary assessed. Appropriate building design and feasible mitigation measures described in *ProPECC PN 5/23* will be implemented during the detailed design stage to fully mitigate the adverse road traffic noise impact **meeting the standards and requirements stipulated under HKPSG**.

8.1.9 Overall, therefore, the noise impact shall be minimised during the construction or operation phases of the Proposed Development.

### Water Quality

8.1.10 During construction, water quality impacts will be properly controlled with the implementation of good site practice. Portable toilets, when necessary, will be provided for constructions workers on-site. Provided these measures are implemented, adverse water quality impact is not anticipated during the construction phase. The Contractor shall apply for a Discharge Licence under the WPCO and the effluent discharged from the construction site shall comply with the terms and conditions of the Discharge Licence.