

Appendix 5

Environmental Assessment

Section 12A Proposed Amendment to the Notes of the Approved Quarry Bay OZP relating to the " Other Specified Uses" zone annotated "Cultural and/or Commercial Leisure and Tourism Related Uses"

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1. INTRODUCTION

1.1 Background

- 1.1.1 The landholding of Marine Riches III (the Applicant) is a prime waterfront site located at IL 8590 R.P. and IL 8723 R.P. in Quarry Bay (the Original Site). The Original Site is currently zoned “Other Specified Use (Cultural and/or Commercial, Leisure and Tourism Related Uses)” (OU (1)) and “Open Space” (O) on the Quarry Bay Outline Zoning Plan (OZP) No. S/H21/28.
- 1.1.2 The Original Site was previously zoned “Industrial”, and the approved S16 planning application No. A/H21/150 and the subsequent approved S16A Minor Amendment No. A/H21/150-1 approved on 24 August 2022 for a proposed mixed development comprises of 10 storey office block and 4 hotel blocks, (2 blocks of 11 storey, 1 block of 12 storey and 1 block of 13 storeys) including 1 storey (G/F) commercial podium, 1 basement level of commercial use and 1 basement level of internal transport facilities with a total Gross Floor Area (GFA) of 37,155m², a height of 41mPD for office and 34 to 41 mPD for hotel, and a site coverage of 92%, for Cultural and /or Commercial, Leisure and Tourism Related Uses
- 1.1.3 The approved Building Amendment Plans for the industrial building remain valid, despite the subsequent change in zoning, and construction of the industrial building commenced with work on the foundation in 2017.
- 1.1.4 However, the Development Bureau, the District Council Members and the General Public have visions for the waterfront site that do not include industrial use. Therefore, the Applicant has revisited the use of the Original Site for an hotel building to create exciting and interesting aspects in maximising the urban design principles and public planning gains. The new Development Proposal is a prestigious development for visitors and the public with a range of commercial, tourism and entertainment use that will create unique and lively designation at the Waterfront Promenade.
- 1.1.5 The Applicant is aware of the Government’s intention to develop a continuous Public Waterfront Promenade along the Quarry Bay Waterfront. In this regard, This OU zone has always been intended for use for cultural, leisure and tourism taking advantage of the waterfront setting the Applicant is thus willing to partly surrender the Original Site in exchange for the government land zoned OU(1) to form a new Development Site (or “Proposed Development”) with an area of 8,532m². The Development Site is proposed to be developed into residential, commercial and cultural facilities (the Proposed Development), rather than the hotel and office building. The Proposed Development will provide a total GFA of about 39,480m² with maximum building heights of 44mPD on Hoi Yu Street (the Site), From Hotel, Commercial and Retail to Cultural and Leisure and Residences, about 67% of Residential area (Est 26,545m²) and about 33% of Cultural / Entertainment (including Eating Place and Shops and Services, and Covered Public Open Space)(Est 12,935 m²).

- 1.1.6 The Application Site will comprise the aforementioned Development Site currently zoned OU (1) on the Approved Quarry Bay OZP No. S/H21/28. The main purpose of this application is to identify an alternative way for achieving the Planning Intention for the “OU (1)” zone. The Planning Intention of the “OU (1)” zone is retained as in the Notes to the zone and the “cultural and/or commercial, leisure and tourism” related uses will be the main focus. The only change proposed is to request the inclusion of “flat” in Column 2 of the Notes to the “OU (1)”, thus requiring to submit a planning application under Section 12A of the Town Planning Ordinance (TPO) to grant a permission from the Town Planning Board (TPB) by the Applicant. Furthermore, the maximum building height of OU(1) zone is restricted to 35mPD and so a permission from the TPB is also required for the amendment to the building height restriction.
- 1.1.7 SMEC Asia Limited (SMEC) has been appointed to prepare this Environmental Assessment (EA) Report summarising the assessment of environmental impacts arising from the Proposed Development to support the planning application.

1.2 Site Description

- 1.2.1 The location of the Proposed Development and its environs are shown on Figure 1-1, in which the uses surrounding the Proposed Development include:
- To the north: the seafront and Victoria Harbour
 - To the east: MTR Corporation Quarry Bay Substation and East Harbour Tunnel (EHT) Quarry Bay Ventilation Building
 - To the south: Hoi Yu Street, Island East Corridor, Quarry Bay Park Phase II, and Food and Environmental Hygiene Department (FEHD) Transport Section Quarry Bay Depot
 - To the west: Water Supplies Department (WSD) Quarry Bay Saltwater Pumping Station

1.3 Project Description

- 1.3.1 The Proposed Development will comprise the following:
- One single podium with three-storey basement of car parking facilities.
 - Three 10-storey residential towers, and one 5-storey cultural / entertainment towers on the podium.
 - The approximate GFA for Residential, and Cultural / Entertainment Uses would be about 26,545m², and 12,935 m² respectively.
- 1.3.2 The indicative layout and sectional plans of the Proposed Development are provided in the Planning Statement.

1.4 Objectives of this Report

- 1.4.1 The objectives of this EA Report are to:

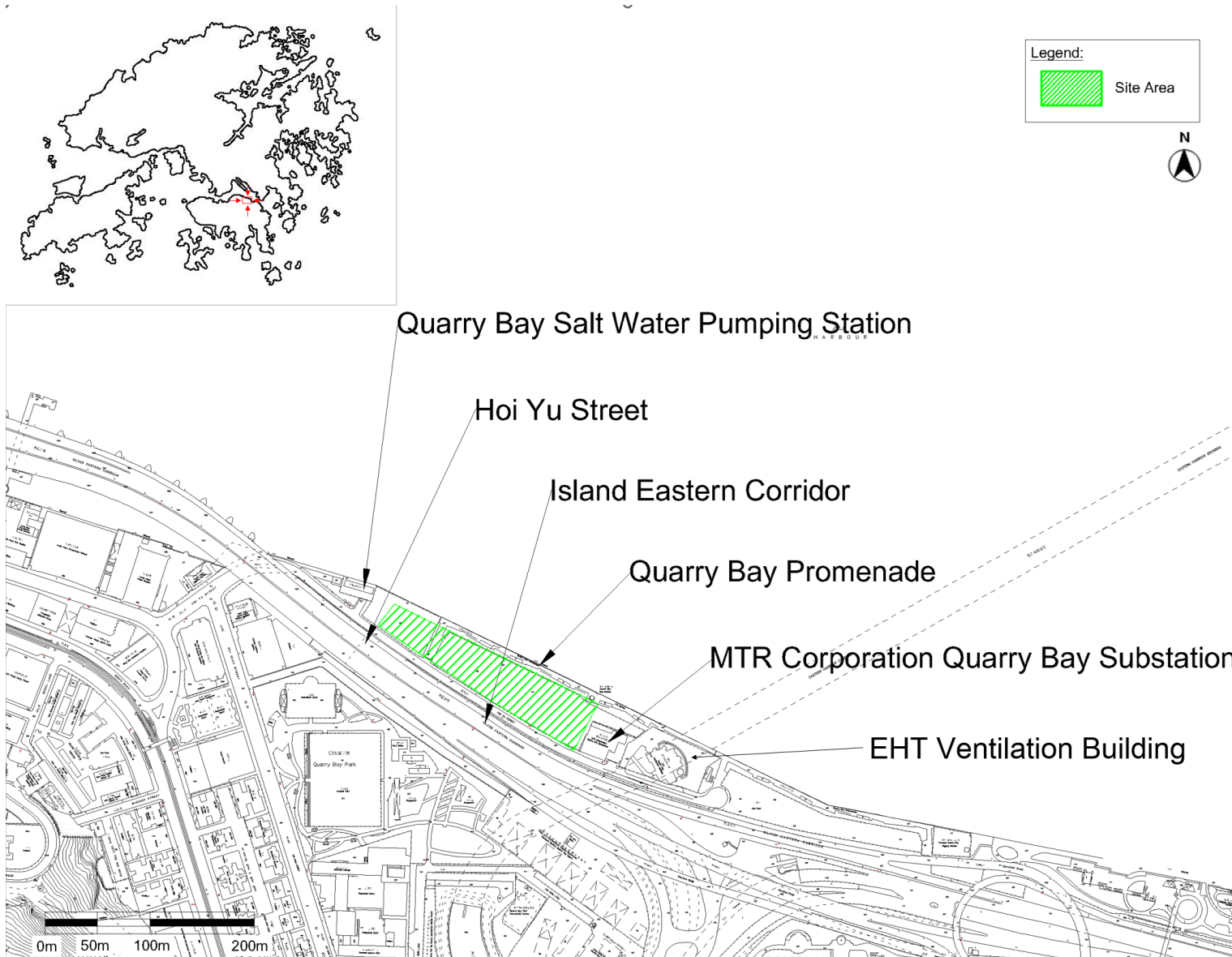
- Identify and qualitatively assess potential environmental impacts that may rise from the construction and operation of the Project, in terms of air quality, noise, water quality, waste management and land contamination.
- Recommend appropriate measures to mitigate any identified impacts.

1.5 Report Structure

This report is structured as follow:

- 1.5.1 Section 1 is this section, and it gives an introduction of the project background and project description.
- 1.5.2 Section 2 describes the air quality impact to identify and assess the potential air quality impact of the project and propose the necessary mitigation measures to be implemented during both construction and operational phase.
- 1.5.3 Section 3 describes the noise impact to identify and assess the potential noise impact of the project and propose the necessary mitigation measures to be implemented during both construction and operational phase.
- 1.5.4 Section 4 describes the water quality impact to identify and assess the potential water quality impact of the project and propose the necessary mitigation measures to be implemented during both construction and operational phase.
- 1.5.5 Section 5 describes the waste management to identify and assess the potential waste management impact of the project and propose the necessary mitigation measures to be implemented during both construction and operational phase.
- 1.5.6 Section 6 identifies and assesses the potential land contamination impact of the project through review of past and present land use and activities, and proposes necessary mitigation measures to be implemented prior to construction phase.
- 1.5.7 Section 7 provide a brief comparison of the sewage impact between the previously Approved Scheme and the Proposed Scheme, to demonstrate that the current design does not cause adverse impacts to the existing sewage system.
- 1.5.8 Section 8 is the conclusion of this report, summarising the findings and the corresponding mitigation measures.

Figure 1-1 Site Location and Its Environs



2. Air Quality Review

- 2.1.1 This section assesses the potential air quality impacts that will be generated by the Project during the construction and its operation phase. Mitigation measures are recommended, where necessary, as part of the assessment.

2.2 Regulation, Standards, and Guidelines

- 2.2.1 The regulation and guidelines that are found relevant to the air quality impact assessment of the proposed waterfront development are summarised as below:

Air Pollution Control Ordinance (APCO) (CAP. 311)

- 2.2.2 Under APCO, the Air Quality Objectives has been established. The current AQOs took effect from 11 April 2025 and are listed below:

Table 2.1 Hong Kong Air Quality Objectives

Pollutant	Averaging time	Concentration limit [i] ($\mu\text{g}/\text{m}^3$)	Number of exceedances allowed
Sulphur dioxide	10-minute	500	3
	24-hour	40	3
Respirable suspended particulates (PM_{10}) [ii]	24-hour	75	9
	Annual	30	Not applicable
Fine suspended particulates ($\text{PM}_{2.5}$) [iii]	24-hour	37.5	18
	Annual	15	Not applicable
Nitrogen dioxide	1-hour	120	9
	Annual	40	Not applicable
Ozone	8-hour	160	9
	Peak Season	100	Not applicable
Carbon monoxide [vi]	1-hour	30,000	0
	8-hour	10,000	0
	24hours	4000	0
Lead	Annual	0.5	Not applicable

Notes:

- [i] All measurements of the concentration of gaseous air pollutants, i.e., sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide, are to be adjusted to a reference temperature of 293 Kelvin and a reference pressure of 101.325 kilopascal.
- [ii] Respirable suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 10 μm or less.
- [iii] Fine suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 2.5 μm or less.
- [iv] The 8-hour mean of CO concentration is calculated based on item 9 of schedule 5 of APCO. The maximum daily 8 hour mean concentration of CO in air is selected by examining 8 hour running averages, calculated from CO hourly data and updated each hour, that is:
- (a) the first calculation period for a day is the period from 5pm on the previous day to 1am on that day; and
 - (b) the last calculation period for a day is the period from 4p.m. to 12 midnight on that day.

Annex 4 and Annex 12 of the Technical Memorandum of Environmental Impact Assessment Ordinance (EIAO-TM)

2.2.3 Annex 4 of EIAO-TM provides criteria for evaluating air quality impact for Designated Project while Annex 12 describes the commonly adopted approaches and methodologies for assessment of air quality impact.

2.2.4 Even though the proposed waterfront development would not be classified as Designated Project, the criteria and assessment guideline stipulated in EIAO-TM would be applied

Air Pollution Control (Construction Dust) Regulation (CAP. 311R)

2.2.5 Enacted under Section 43 of the APCO, the *Air Pollution Control (Construction Dust) Regulation* defines notifiable and regulatory works to ensure effective dust abatement measures have been properly implemented to reduce dust emissions for a number of construction activities.

2.2.6 The Regulation requires that any notifiable work shall give advance notice to the Environmental Protection Department (EPD), and the contractor shall ensure that the notifiable and regulatory works are carried out in accordance with the Schedule of the Regulation. Dust control and suppression measures are also provided in the Schedule.

Air Pollution Control (Furnaces, Ovens and Chimneys) (Installation and Alternation) Regulations (CAP 311A)

2.2.7 Enacted under Section 43 of the APCO, the *Air Pollution Control (Furnaces, Ovens and Chimneys) (Installation and Alteration) Regulations* stipulate that a prior approval from EPD will be required if the total fuel consumption capacity of any fuel-burning equipment or its chimney on premises to be installed or altered exceeds (a) 25 litres (L) of conventional liquid fuel per hour; or (b) 35 kilograms (kg) of conventional solid fuel per hour; or (c) 1,150 megajoules (MJ) of any gaseous fuel per hour.

Air Pollution Control (Non- Road Mobile Machinery) (Emission) Regulation (CAP. 311Z)

2.2.8 This Regulation requires Non- Road Mobile Machinery (NRMM), except those exempted, to comply with the prescribed emission standards. All regulated machines sold or leased for use in Hong Kong must be approved or exempted with a proper label in a prescribed format issued by EPD. Only approved or exempted NRMMs with a proper label are allowed to be used in specified activities and locations including construction sites, container terminals and back up facilities, restricted areas of the airport, designated waste disposal facilities and specified processes.

Hong Kong Planning Standards and Guidelines (HKPSG)

2.2.9 The minimum buffer distances required between pollutant source and permitted uses recommended in Chapter 9 Environment of *Hong Kong Planning Standards and Guidelines* (HKPSG) and are summarised in **Table 2.2** and **Table 2.3** for ease of reference.

Table 2.2: Recommended Buffering Distance between Different of Roads and Permitted Uses

Pollution Source	Type of Road	Buffer Distance	Permitted Uses
Road and Highways	Trunk Road and Primary Distributor	>20m	Active and passive recreation uses

		3 - 20m	Passive recreational uses
		<3m	Amenity areas
	District Distributor	>10m	Active and passive recreation uses
		<10m	Passive recreational uses
	Local Distributor	>5m	Active and passive recreation uses
		<5m	Passive recreational uses
	Under Flyovers	-	Passive recreational uses

Table 2.3: Recommended Buffering Distance between Different of Roads and Permitted Uses

Pollution Source	Difference in Height between Industrial Chimney Exit and the Site	Buffer Distance	Permitted Uses
Industrial Areas	<20m	>200m	Active and passive recreation uses
		5-200m	Passive recreational uses
	20-30m	>100m	Active and passive recreation uses
		5-100m	Passive recreational uses
	30-40m	>50m	Active and passive recreation uses
		5-50m	Passive recreational uses
	>40m	>10m	Active and passive recreation uses

Remarks:

- In situations where the height of chimneys is not known, use the set of guidelines marked with an asterisk for preliminary planning purpose and refine as and when more information is available.
- The buffer distance is the horizontal, shortest distance from the boundary of the industrial lot, the position of existing chimneys or the edge of road kerb to the boundary of open space sites.
- The guidelines are generally applicable to major industrial areas but NOT individual large industrial establishments which are likely to be significant air pollution sources. Consult EPD when planning open space sites close to such establishments.
- Amenity areas are permitted in any situation.

2.3 Background Air Quality

2.3.1 Eastern Air Quality Monitoring Station (AQMS) is the nearest AQMS to the proposed waterfront development. The latest air quality monitoring results from the previous five years has been reviewed and summarised in **Table 2.4**.

Table 2.4: Air Quality Monitoring Results in Eastern AQMS

Pollutant	Averaging Period	Concentration						Air Quality Objectives (µg/m³)
		2019	2020	2021	2022	2023	5-year mean	
Sulphur Dioxide	4 th highest 10-minute	41	16	22	35	37	30 [6%]	500 (3)
	4 th highest 24-hour	7	6	5	5	4	5 [11%]	50 (3)
Respirable Suspended Particulates	10 th highest 24-hour	66	60	62	49	52	58 [58%]	100 (9)
	Annual	31	27	29	23	24	27 [54%]	50

Fine Suspended Particulates	36 th highest 24-hour	30	24	26	25	24	26 [52%]	50 (35)
	Annual	18	14	15	13	14	15 [59%]	25
Nitrogen Dioxide	19 th highest 1-hour	136	113	129	99	106	117 [58%]	200 (18)
	Annual	38	34	35	32	32	34 [86%]	40
Ozone	10 th highest 8-hour	169	140	148	185	149	158 [99%]	160 (9)

Notes:

[i] Monitoring results exceeded the AQOs are shown as **bolded**.

[ii] The 5-year mean is the average of the corresponding pollutant concentration from Year 2019 to 2023.

2.3.2 From **Table 2.4**, it can be observed that the monitored concentration of all the air pollutants can satisfy the corresponding AQOs in recent years except exceedance of 8-hour averaging ozone was recorded in Year 2019 and 2022.

2.3.3 The background air quality levels in Year 2026 and Year 2030 predicted by Pollutants in the Atmosphere and the Transport over Hong Kong 2024 Version (PATH v3.0) model released by EPD in January 2024 are adopted in this report. The background air quality levels in relevant grid (44,30) in PATH in Year 2026 (targeted Project commence year) and Year 2030 (targeted Project completion) was reviewed and summarised as below:

Table 2.5: Predicated Air Quality Result from Path v3.0

Pollutant	Averaging Time	Concentration Limit (µg/m³)	Data Summary	Year 2026		Year 2030	
				Concentration (µg/m³)	Number of Exceedance	Concentration (µg/m³)	Number of Exceedance
Respirable Suspended Particulates	24-hour	100	10 th highest	56.74	0	51.1	0
	Annual	50	-	21.44	-	19.81	-
Fine Suspended Particulates	24-hour	50	19 th highest	34.08	0	30.02	0
	24-hour	50	36 th highest	28.34	0	25.06	0
	Annual	25	-	13.47	-	12.17	-
Nitrogen Dioxide	1-hour	200	19 th highest	76.5	0	70.65	0
	Annual	40	-	17.95	-	15.85	-
Sulphur Dioxide	10-minute	500	4 th highest	25.33	0	22.68	0
	24-hour	50	4 th highest	7.64	0	6.87	0
Ozone	8-hour	160	10 th highest	172.84	19	170.13	16
Carbon Monoxide	1-hour	30000	Maximum	597.85	0	527.25	0
	8-hour	10000	Maximum	570.77	0	501.38	0

Notes:

[i] Predicted result exceeded the AQOs are shown as **bolded**.

[ii] Reference conditions: temperature at 293 Kelvin and pressure at 101.325 kilopascal.

2.3.4 From Table 2.5, it can be found that future background air pollutant concentration would be below AQOs, except Ozone. Exceedance of O₃ is claimed to be a complex regional air pollution issue in *Air Quality in Hong Kong 2022* and is less relevant to the location of site.

2.4 Identification of Air Sensitive Receivers (ASRs)

2.4.1 The assessment area for air quality impact assessment would be taken as 500 m from the site boundary. Air Sensitive Receivers (ASR) will be identified according to Annex 12 of EIAO-TM. Based on the desktop study and site visit on 2 September 2024, the first layer of ASRs closes to the site boundary in the 500 m assessment area have been identified and listed in **Table 2.6**. The location of ASRs would be represented by their nearest point to site boundary and are shown in Figure 2-1.

Table 2.6: Identified ASRs within 500m assessment area to Site Boundary

ASR id	Description	Land Use	Status	Distance to Site Boundary (m)
A1	Proposed Waterfront Development Block 1	Residential and Commercial	Under Planning Application	0
A2	Proposed Waterfront Development Block 2	Residential and Commercial	Under Planning Application	0
A3	Proposed Waterfront Development Block 3	Residential and Commercial	Under Planning Application	0
A4	Boardwalk Underneath Island Eastern Corridor	Open Space	Existing	79
A5	North Point Police Station	Government, Institution or Community	Existing	214
A6	Eastern Harbour Centre	Commercial	Existing	63
A7	Quarry Bay Park Phase 2	Open Space	Existing	74
A8	Canossa College	Government, Institution or Community	Existing	162
A9	Chinachem Exchange Square	Commercial	Existing	294
A10	Lincoln House	Commercial	Existing	306
A11	One Taikoo Place	Commercial	Existing	303
A12	Berkshire House	Commercial	Existing	315
A13	Taikoo Shing Harbour View Gardens	Residential	Existing	320
A14	Quarry Bay Park Phase 1	Open Space	Existing	265
A15	Quarry Bay Promenade	Open Space	Existing	133

2.5 Air Quality Impact During Construction Stage

2.5.1 This section identified the air quality impact arisen from the construction stage of the Proposed Development. Mitigation measures is recommended accordingly.

Construction Stage of Proposed Development

- 2.5.2 The construction stage of the Proposed Development is tentatively scheduled from 2026 to 2030. The proposed development will include an amphitheatre, a culture venue, and three residential towers. At the current planning application stage, the detailed design of the Proposed Development has not yet commenced, and the detail construction programme is not available at this planning stage.
- 2.5.3 A site visit conducted in May 2025 identified a building on Pak Fuk Road, located 480m away within the 500m assessment area, that is prepared for demolition, expected to commence within the next 10 months as per the notice displayed on site. Given that Quarry Bay is a well-developed area and our project is not directly adjacent to the demolition site, it is unlikely that the construction will lead to any significant adverse air quality impacts. The demolition project will adhere to the best environmental regulations and construction practices to mitigate air and noise impacts, allowing us to anticipate no cumulative dust impact or only very minimal effects that will not affect our project.

Air Quality Impact Assessment during Construction Stage

- 2.5.4 The potential air pollution sources related to the construction of the Proposed Development include the plant emission from the deployed construction machinery and equipment, and the fugitive dust generated from handling of dusty materials. Additionally, emissions from construction vehicles and trucks, or generators are also considered as the potential air pollution sources during the construction phase.
- 2.5.5 Plant emissions are statutorily controlled under Air Pollution Control (Non- Road Mobile Machinery) (Emission) Regulation. While the fugitive dust impact is identified as the primary source of air pollution during the construction stage of the Proposed Development, the specific number of construction trucks and equipment to be operated onsite will be determined during the detailed design stage. a detailed analysis of emission from construction activities will be conducted once specific construction methods and equipment are established.
- 2.5.6 It is anticipated that the construction activities of the Proposed Development will involve demolition works, site formation works, foundation works, superstructure works and landscape works. The existing carpark within the site area will be demolished and filled to 4.30 mPD as the ground level of the proposed waterfront development, along with the construction of multiple levels of basement. These activities, including stockpiling, excavation, and demolition would generate fugitive dust that could impact to the nearby ASRs. The specific sizes of excavation and the volume of excavated materials will be determined during the detailed design stage, and assessment will be conducted based on the information.
- 2.5.7 The Eastern Harbour Centre, Boardwalk Underneath Island Eastern Corridor IEC and Quarry Bay Park Phase 2 are three of the closest existing ASRs to the site boundary with 63m, 79 m and 74 m respectively. Considering the nature of the Boardwalk as an open space used for recreation purpose and its relatively close distance to Site boundary. They are expected to be the critical ASRs affecting the most by the fugitive dust impact from the Proposed Development.

Mitigation Measure for Air Quality Impact during Construction Stage

2.5.8 To avoid adverse dust impact on the nearby air sensitive uses, mitigation measure shall be implemented during the construction stage as follows:

- For any wall of the building to be demolished that abuts or fronts upon a street, service lane or other open area accessible to the public, impervious dust screens or sheeting shall be used to enclose the whole wall to a height of at least 1 m higher than the highest level of the structure being demolished.
- Provide hard paving on open area, regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.
- The working area of any excavation or earth moving operation shall be sprayed with water immediately before, during and immediately after the operation so as to maintain the entire surface wet.
- Unpaved surface should be minimized. Exposed earth should be covered or paved as soon as the works have been completed.
- Frequent watering for particularly dusty areas and areas close to ASRs.
- Any stockpile of dusty materials shall be either covered entirely by impervious sheeting, placed in an area sheltered on the top and the 3 sides, or sprayed with water so as to maintain the entire surface wet.
- Dusty works and stockpiling near ASRs should be avoided.
- Where possible, dusty materials shall be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.
- The working area for the uprooting of trees, shrubs, or vegetation or for the removal of boulders, poles, pillars or temporary or permanent structures shall be sprayed with water immediately before, during and immediately after the operation so as to maintain the entire surface wet.
- All demolished items (including trees, shrubs, vegetation, boulders, poles, pillars, structures, debris, rubbish and other items arising from site clearance) that may dislodge dust particles shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition.
- Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.
- Vehicle washing facilities including a high-pressure water jet shall be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point shall be paved with concrete, bituminous materials or hardcore.
- Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit.
- Spray water on the surface of façade before and during grinding work.
- Site hoarding with sufficient height should be installed at the site boundary closed to the ASRs.
- Equip vacuum cleaner on grinder for façade grinding work as far as practicable.
- Main haul road shall be sprayed with water so as to maintain the entire road surface wet. Imposition of speed controls for vehicles on site haul roads and confine haulage and delivery vehicles to designated roadways inside the site.
- The portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit shall be kept clear of dusty materials.

- Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.
- Haul road should be located away from ASRs.
- Every stock of more than 20 bags of cement or dry Pulverised Fuel Ash (“PFA”) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides.
- Plan the site layout to locate machinery and dust causing activities, including haul roads and stockpiling areas away from receptor as far as possible.
- Erect solid screens or barriers around dusty activities as far as practicable.
- Where possible, connect the construction plant and equipment to mains electricity supply and avoid use of diesel generator and diesel-powered equipment to minimize air quality impact arising from the equipment.
- Install an electrostatic precipitator at the eating area to effectively remove oily fumes and cooking odours.

2.5.9 Usually, fugitive dust impact can be effectively controlled by the mitigation measures and good site practice. It is expected that air quality impact from the Proposed Development during its construction stage would not be adverse with the implementation of the abovementioned measures.

2.6 Air Quality Impact During Operation Stage

2.6.1 The Proposed Development would include residential, cultural and entertainment feature. Direct emission of air pollutant from the Proposed Development during its operation stage is not expected. However, as the Proposed Development is considered air sensitive, and is bound by Island Eastern Corridor (IEC), it will be affected by the vehicular emission from the traffic networks. Additionally, the proposed eating establishments may generate oily fumes and cooking odours, potentially impact the nearby ASRs. To mitigate these effects, we will implement measures such as locating exhaust outlets away from ASRs or facing them toward the seaside. Additionally, a fresh air intake and exhaust system will be installed in accordance with the EPD best practice guideline: Control of Oil Fume and Cooking Odour from Restaurants and Food Businesses.

Identification of Emission Source

2.6.2 The IEC is designated as expressway by Transport Department. In reference to HKPSG Chapter 9, the required minimum buffering distance between trunk road and active open spaces is 20m and is shown at **Figure 2-2**. Referring to the Annual Traffic Census 2023, the average daily traffic flow of IEC near the Site area is over 100,000 vehicle/day. The vehicular emission from IEC can be considered as a major source of air pollutant in the vicinity of the Proposed Development. As shown at **Figure 2-2**, the horizontal distance between the proposed development and IEC would be less than the 20 m, and is smaller than the buffering distance recommended in HSPSG Chapter 9. It is expected that the Proposed Development will subject to the vehicular emission impact from the IEC.

2.6.3 In addition to IEC, the Ventilation Building and portal of Eastern Harbour Crossing (EHC) are also within the 500 m buffering distance from the Site boundary as shown at Figure 2-2, and they should be identified as air pollution source relevant to the Proposed Development as well. Site investigation was conducted during October 2024 and May 2025, although there are funeral Services within the 500m assessment area, however it was controlled

effectively. There is no air pollutant and odour emission source (active industrial chimney) within the 500m assessment area that contribute to the cumulative air quality impact. However, with the increasing popularity of electric vehicles (EVs) and their rising numbers over the years, the shift toward EVs, which produce minimal emissions, may lead to a reduction in overall vehicular emissions in the area. Although there are currently no standard guidelines to quantify this change, it is worth considering in the assessment of air quality impacts.

Evaluation of Air Quality Impact during Operation Stage

- 2.6.4 During the site visit on 4 October 2024, a notice board was found at the entrance of the EHC Ventilation Building. It describes that the ventilation building is used for air suction and air supply to EHC tunnel. And the Ventilation Building will only exhaust smoke under fire or emergency. The photo of the signboard is shown attached as **Figure 2-3**. It can be expected that this Ventilation Building will not emit pollutant and therefore would not cause adverse air quality impact to the Proposed Development during the normal operation of EHC.
- 2.6.5 The prevailing wind direction of Hong Kong is northeast. Both the IEC and the EHC portal are at the downwind position of the Proposed Development. It is not likely the Proposed Development will continuously and directly sustain the emission from EHC portal. The air quality impact from IEC and the EHC portal has been discussed in the Hong Kong Island East Harbour-front Study – Feasibility Study (Agreement No. CE61/2008 (TP)). It is recommended that a quantitative air quality impact assessment shall be conducted for air sensitive use of the proposed development at the Hoi Yu Street area. Since a small portion of the Proposed Development cannot satisfy the buffering distance requirement recommended in HKPSG, a quantitative air quality impact assessment would be necessary during the detailed design stage to review the dispersion of air pollutant within the Proposed Development and to ensure the compliance with AQO.

Mitigation Measures for Air Quality Impact during the Operation Stage

- 2.6.6 Mitigation measure for the operation stage of the Proposed Development shall be determined after conducting the quantitative air quality impact assessment. Improvement measures to facilitate in reducing the impact during construction stage are recommended in this Environmental Assessment report for consideration.

2.7 Conclusion

The air quality impact related to the construction and operation phases of the Proposed Development are discussed. It is anticipated that the Proposed Development will not induce adverse construction air quality impacts to the surrounding, providing with the implementation of the construction dust mitigation measures. The major air quality impact affecting the Proposed Development during its operation phase is identified as the vehicular emissions from Island Eastern Corridor, Ventilation Building and portal of Eastern Harbour Crossing. A quantitative air quality impact assessment is required to be carried out separately to confirm the compliance, and mitigation measures, if any, for the operation phase shall be determined afterward.

Figure 2-1: Identified ASRs within 500 m Assessment Area from Site Boundary

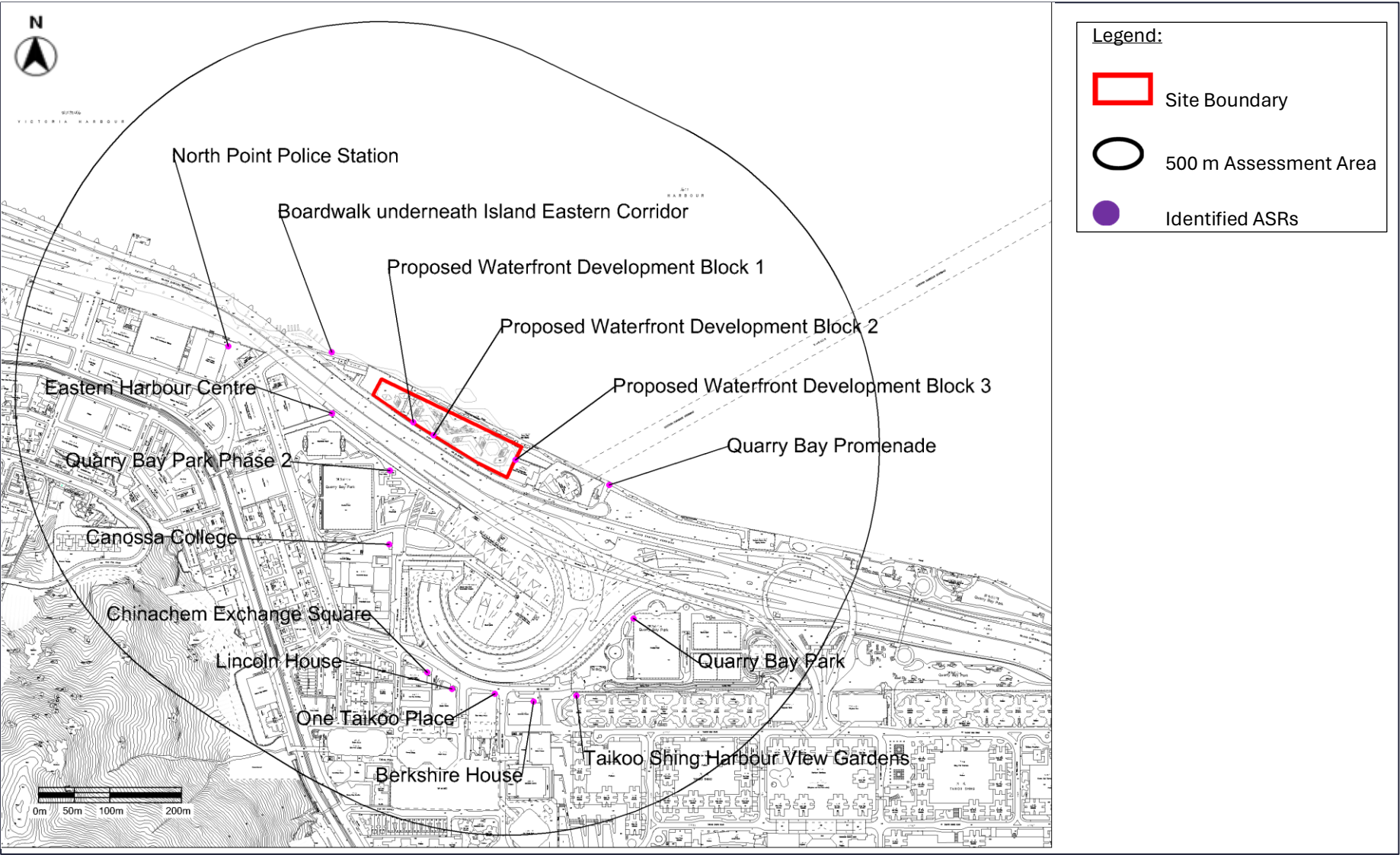
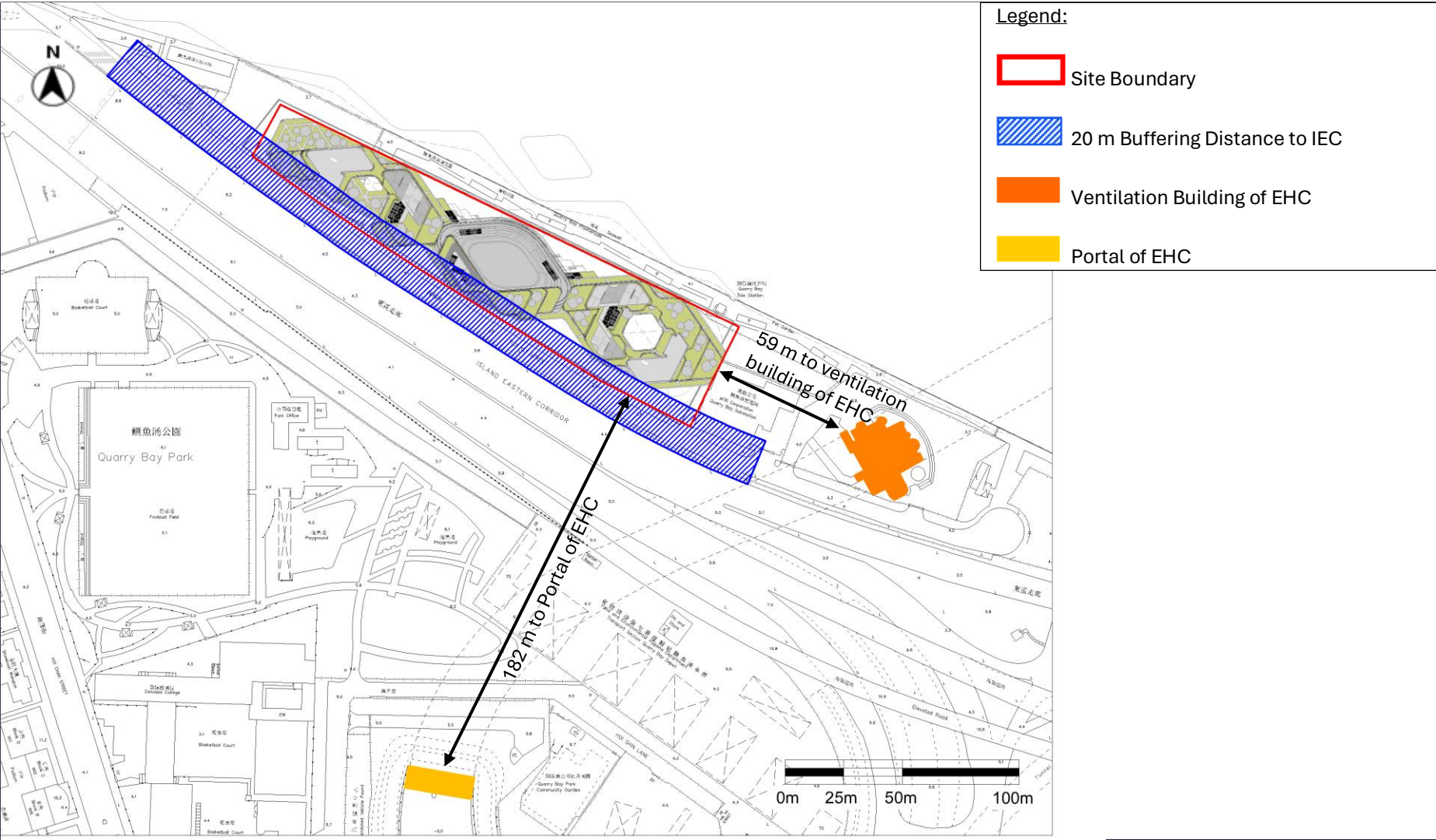


Figure 2-2: Site Distance with surrounding facilities



東區海底隧道通風大樓通風

此通風大樓設原屬東隧通風大樓的一部分，承蒙該隧道經營者新香港隧道有限公司支持海濱長廊的發展，將此段土地供市民使用，讓海濱長廊完整而連貫。

東隧通風大樓內設置通風系統，提供新鮮空氣至隧道管道，確保隧道內維持良好的空氣質素。在緊急事故或火警情況下，通風系統亦可以把隧道內的濃煙抽出，以減低在隧道內的危險。

Eastern Harbour Crossing Ventilation Building Passageway

This passageway originally formed part of the EHC Ventilation Building area. In support of the waterfront promenade project, the tunnel operator New Hong Kong Tunnel Company Limited has kindly handed over the land to Government to facilitate the continuity of the waterfront promenade for public use.

The EHC Ventilation Building is equipped with a ventilation system which supplies fresh air for the tunnel tubes to ensure a high quality of air inside the Eastern Harbour Tunnel. Under any emergency situation, the system extracts heavy smoke away from the tunnel tubes so as to reduce the danger inside the Tunnel.

東區海底隧道通風大樓通風

東區海底隧道通風大樓通風

3. NOISE

3.1 Background

- 3.1.1 The following section will assess the noise impact that will be generated by the project during the construction and operation phase. Mitigation measures are recommended, where necessary, as part of the assessment.

3.2 Environmental Legislation and Standards

Noise Control Ordinance (CAP. 400)

- 3.2.1 The main piece of legislation controlling environmental noise impact is the *Noise Control Ordinance* (NCO). The NCO enables regulations and Technical Memoranda (TM) to be enacted, which introduce detailed control criteria, measurement procedures and other technical matters. Environmental noise is governed under the following Technical Memoranda:
- Technical Memorandum on Noise from Percussive Piling (PP-TM).
 - Technical Memorandum on Noise from Construction Work other than Percussive Piling (GW-TM).
 - Technical Memorandum on Noise from Construction Work in Designated Area (DA-TM).
 - Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites (IND-TM).
- 3.2.2 According to EPD's Plan No. EPD/AN/HKI-01 for Hong Kong Island and Lamma Island, the Site is located within a Designated Area (DA), hence, DA-TM is applicable.
- 3.2.3 Construction Noise Permit (CNP) must be obtained by the contractor for any percussive piling at any time. CNP must also be obtained for the use of any Powered Mechanical Equipment (PME) within restricted hours as always defined in the NCO (for all days 7pm to 7am the next day and on general holidays or Sundays).
- 3.2.4 In addition to CNP, hand-held breakers having a mass of above 10kg and any air compressor capable of supplying compressed air at 500kPa or above for carrying out construction work must be fitted with a Noise Emission Label (NEL) issued under the *Noise Control (Hand-held Percussive Breakers) Regulation* and the *Noise Control (Air Compressors) Regulation* of NCO.

- 3.2.5 There is no statutory control for noise arising from construction activities (other than percussive piling) during normal working hours (7am to 7pm from Monday to Saturday, not including general holidays). Nevertheless, Professional Persons Environmental Consultative Committee (ProPECC) Practice Note PN 1/24 Minimizing Noise from Construction Activities (ProPECC PN1/24) recommends the noise criteria shown in **Table 3.1** as recommended guideline and criteria for construction noise control during non-restricted hours.

Table 3.1: Construction Noise Criteria for Non-restricted Hours

Noise Sensitive Use	Recommended Noise Criterion, L_{eq} (30 min), during Non-restricted Hours
All Domestic Premises, Temporary Housing accommodation, Hostels, Convalescences Homes, Home for the Aged	75 dB(A)
Places of Public Worship, Court of Law, Hospitals and Medical Clinics	70 dB(A)
Educational Institutions (including kindergartens and nurseries)	70 dB(A) (or 65 dB(A) during examination)

- 3.2.6 For fixed plant noise during operation phase, the requirements of IND-TM shall be complied with. Table 2 of IND-TM stipulates the day, evening and nighttime Acceptable Noise Levels (ANLs) for Noise Sensitive Receivers (NSRs) according to the corresponding Area Sensitive Rating (ASR), which is determined by Influencing Factors (IFs) in accordance with the IND-TM.
- 3.2.7 The classification of ASR is summarised in **Table 3.2** and the ANL corresponding each ASR is summarised in **Table 3.3**

Table 3.2: Classification of Area Sensitive Ratings

Type of Area Containing NSR	Degree to which NSR is affected by IF		
	Not Affected	Indirectly Affected	Directly Affected
(i) Rural area, including country parks or village type developments	A	B	B
(ii) Low density residential area consisting of low-rise or isolated high-rise developments	A	B	C
(iii) Urban area	B	C	C
(iv) Area other than those above	B	B	C

Table 3.3: Acceptable Noise Level corresponding to each Area Sensitive Rating

Time Period	ANL, dB(A)		
	ASR "A"	ASR "B"	ASR "C"
Day (0700 to 1900 hours)	60	65	70
Evening (1900 to 2300 hours)	60	65	70
Night (2300 to 0700 hours)	50	55	60

- 3.2.8** IEC is an expressway with traffic flow of over 100,000 vehicle/day in reference to Annual Traffic Census 2023, and it is at the vicinity of the Proposed Development. IEC should be identified as the influence factor directly affecting the Proposed Development. The ASR of the Proposed Development is C, and the ANL of the noise sensitive use within the Proposed Development would be 70 dB(A) during day time and evening time and 60 dB(A) during night time.

Hong Kong Planning Standards and Guidelines

- 3.2.9** The noise criteria for planned fixed noise source shall follow the requirements of **Table 4.1** of Chapter 9 of HKPSG:
- 5dB(A) below the appropriate ANLs shown in Table 2 of IND-TM, and
 - The prevailing background noise levels, whichever is lower.
- 3.2.10** As recommended in Table 4.1 of Chapter 9 of HKPSG, the standards of road traffic noise in terms of $L_{10(1-hr)}$ for the following uses relying on opened windows for ventilation are shown in **Table 3.4**.

Table 3.4 Summary of Road Traffic Noise Standards

Uses	Noise criteria $L_{10(1-hr)}$, dB(A)
All domestic premises including temporary housing accommodation	70
Hotels and hostels	70
Offices	70
Educational institutions including kindergartens, childcare centres and all others where unaided voice communication is required	65
Places of public worship and courts of law	65
Diagnostic rooms and wards of hospitals, clinics, convalescences and residential care homes for the elderly	55

Noise Control Guidelines for Music, Singing and Instrument Performing Activities

- 3.2.11 In accordance with the Noise Control Guidelines for Music, Singing and Instrument Performing Activities published by EPD, the noise criteria for music, singing and instrument performing activities in places other than domestic premises, public places or construction sites should not be more than 10 dB(A) above the background noise level, measured at 1m from the exterior building facade of any NSRs, during day time and evening period, i.e. 0700 – 2300 hours. Meanwhile, for nighttime, i.e. 2300-0700 hours, noise from the aforementioned activities should not be audible by any NSRs.

3.3 Noise Sensitive Use at the Vicinity of the Site

- 3.3.1 The first layer of noise sensitive receivers (NSRs) within the 300 m buffering distance to Site boundary have been identified as listed in Table 3.5 and indicated at **Figure 3.1**. They include the Conossa College and several residential buildings at Quarry Bay, as well as the Proposed Development itself, which would include domestic premises.

Table 3.5: Identified Noise Sensitive Use within 300 m Buffering Distance to Site Boundary

Noise Sensitive Receiver id	Noise Sensitive Receiver	Land Use	Approximate Distance to Site Boundary (m)
NSR 1	Proposed Development Block 1	Residential	0
NSR 2	Proposed Development Block 2	Residential	0
NSR 3	Proposed Development Block 3	Residential	0
NSR 4	Man Ning House	Residential	285
NSR 5	Man Hong House	Residential	259
NSR 6	Lai Wah Mansion	Residential	223
NSR 7	Ritz Garden Apartment	Residential	242
NSR 7	Royal Terrace	Residential	264
NSR 8	King's View Court	Residential	254
NSR 9	Canossa College	Institutional	163

3.4 Prevailing Background Noise

- 3.4.1 Prevailing background noise has been measured for the Site area in the previous planning application at the vicinity of the Proposed Development. The measured result is presented in **Table 3.6**, and the measurement location is indicated at **Figure 3.2**.

Table 3.6: Prevailing Background Noise Levels

ID	Measurement Location		Background Noise Level ^[Note 2] , $L_{eq}(5mins)$, dB(A)		
	mAG ^[3]	Location	Day	Evening	Night
BG1	2	Quarry Bay Park Phase I	54	54	48
	10		55	56	50
	15		57	57	51
BG2	2	Quarry Bay Park Phase II	56	55	50
	10		57	57	51
	20		59	59	53

3.5 Potential Noise Impacts During Construction

- 3.5.1 Various construction activities will be the key noise sources generated during the construction phase. In particular, the use of Powered Mechanical Equipment (PME) and the vehicle movement within the Application Site are the major potential noise sources.

-
- 3.5.2 Construction shall be carried out during non-restricted hours from 07:00 to 19:00 on days not being general holidays as far as practicable. In addition to implementing the mitigation measures recommended in ProPECC PN1/24, where applicable, the mitigation measures and on-site practice as listed in Section 3.8 are recommended to further minimising the potential construction noise impacts.
- 3.5.3 If construction work involving use of PME is required during the restricted hours of 19:00 to 07:00 on any day or anytime on a Sunday or a general holiday, a Construction Noise Permit (CNP) shall be applied for under the NCO. The noise criteria and assessment procedures for obtaining a CNP are specified in GW-TM.

3.6 Potential Noise Impacts During Operation

- 3.6.1 The Proposed Development will comprise of domestic premises, and is considered noise sensitive use to fixed plant noise impact from the proximity to the Site, and road traffic noise impact from the nearby road network. Meanwhile, the Proposed Development could also induce fixed plant noise impact to the vicinity as the outdoor Electrical and Mechanical (E&M) equipment for the buildings will be installed in the future. Cultural and leisure usage is planned for the Proposed Development. The event holding activities potentially might cause entertainment noise nuisance to noise sensitive use at the Proposed Development and to the surrounding. The fixed noise impact and the noise from event is discussed in the following sections. The road traffic noise impact to the Proposed Development is discussed in the later Section 3.5.

Existing Fixed Plant Noise Source at the Proximity of the Site

- 3.6.2 The Proposed Development locates at Quarry Bay. The vicinity of the Proposed Development is maturely developed areas, at which large number of high rising buildings can be observed, and most of the buildings are equipped with rooftop E&M equipment like chillers, water towers, and ventilation systems. The rooftop E&M equipment shall be classified as fixed plant noise source. However, considering that the Proposed Development is at the seafront of Victoria Harbour and is segregated by IEC, Quarry Bay Park Phase 1, and Quarry Park Phase 2 from the high-density area of Quarry Bay, the sound propagation of emitted noise from the rooftop E&M equipment to the Proposed Development would be extensively distracted, and the fixed noise impact to the Proposed Development would be negligible. In this regard, the identification of the potential fixed noise source relevant to the Site would focus on the seafront corridor between Victoria Harbour and IEC.
- 3.6.3 Three existing fixed plant noise sources can be identified at the proximity of the site, including the WSD Quarry Bay Saltwater Pumping Station, the MTR Quarry Bay Substation, and the EHC Quarry Bay Ventilation Building. The locations of the identified fixed plant noise sources are indicated at **Figure 3.1**.

3.6.4 A site visit has been conducted at the vicinity of the Site on 04 October 2024 in the afternoon at around 16:00. During the site visit, the prevailing noise background at the Site area was dominated by the traffic noise from IEC. It would be more appropriate to adopt the background noise measurement result at the Quarry Bay Park Phase 1 and Phase 2 to define the fixed plant noise criteria of the Proposed Development. As such, the fixed plant noise criteria of the Proposed Development shall be defined as 54, 54, 48 dB(A) during daytime, evening time, and nighttime respectively.

3.6.5 At the current TPO Section 12A application, only the conceptual design of the proposed development is available, and the detailed building design is yet to formulated. A preliminary fixed plant noise assessment based on the assumed sound power level of the noise sources is conducted to preview the impact to the Proposed Development. The assumption and reference of the noise sources are described in Table 3.7.

Table 3.7 Assumption of Fixed Plant Noise Source

Fixed Plant Noise Source	Approximate Distance to Site Boundary, m	Assumed Sound Power Level, dB(A)	Reference
WSD Quarry Bay Salt Water Pumping Station	25	49	In the EIA of Yau Tong Bay Development ² , the noise level from Cha Kwo Ling Saltwater Pumping Station was measured to be 47 - 49 dB(A) Leq. The noise level from the concerned Quarry Bay Salt Water Pumping Station is assumed to be the same.
MTR Quarry Bay Substation	14	76	Research ³ has been conducted to evaluate noise impact from substations. The maximum sound power level from substations is measured to be 75.54 dB(A). As a conservative approach, the noise level from the concerned MTR Quarry Bay Station is assumed to be at this maximum level.
EHC Quarry Bay Ventilation Building	90	70	In the EIA of Western Harbour Crossing ⁴ , the noise level from the ventilation buildings of Western Harbour Crossing is predicted to be 65 - 70 dB(A). The noise level from the concerned EHC Ventilation Building is assumed to be the same.

Remark:

The approximate distance from the fixed plant noise sources to site boundary are measured from the openings of the noise sources to the site boundary. Only horizontal distance is accounted.

3.6.6 Considering the distance correction, the fixed plant noise level at Proposed Development can be approximately estimated as:

$$\begin{aligned}
 \text{Predicted Noise Level} &= 10 \log \left(10^{\frac{49-8-20\log 25}{10}} + 10^{\frac{56-8-20\log 14}{10}} + 10^{\frac{70-8-20\log 90}{10}} \right) \\
 &= 32 \text{ dB(A)}
 \end{aligned}$$

² https://www.epd.gov.hk/eia/english/alpha/aspd_254.html

³ <https://doi.org/10.1177/14613484211014324>

⁴ <https://www.epd.gov.hk/eia/register/report-bc/eia002/fr.pdf>

- 3.6.7 It is preliminary predicted that the fixed plant noise impact on the Proposed Development would be 25 dB(A), and can satisfy the fixed plant noise criteria derived at Section 3.5.4.
- 3.6.8 The current estimation of fixed plant noise impact is based on assumption of sound power levels in reference to other studies rather than measurements and might deviate from the actual site condition. Detailed noise assessment based on site measurement near the fixed noise sources shall be conducted in the later detailed design stage to ensure the compliance with HKPSG. Noise mitigation measures like adjusting building layouts and erecting barriers shall be considered if adverse fixed plant noise impact is found.
- 3.6.9 The fixed plant noise impact assessment in this Environmental Assessment Report provides a preliminary estimation of the fixed plant noise level at the site area. The fixed plant noise impact on the Proposed Development is predicted to be lower than the criteria. It is expected that the fixed noise impact from existing sources on the Proposed Development would not be insurmountable and could be mitigated in the future development.

3.6.10 Fixed Plant Noise Source of the Proposed Development

- 3.6.11 E&M equipment which will be provided for the Proposed Development, and it will comprise of fixed noise sources. While most of equipment such as pumps, lifts, transformers, will be installed inside plant rooms and the emitted noise should be confined, outdoor E&M equipment like chiller and cooling tower would induce fixed plant noise impact to the surrounding as well as the domestic premises within the proposed development.
- 3.6.12 The domestic premises within the Proposed Development will subject to the fixed noise impact from the outdoor E&M equipment within it. Both the architectural design of the residential clusters and the building services design of the E&M equipment is yet to formulated at this stage. Evaluating the fixed plant noise impact based on plant inventory is not feasible. A maximum permissible sound power level is calculated for the Proposed outdoor E&M equipment at the Proposed Development.
- 3.6.13 Based on the fixed plant noise criteria derived at Section 3.5.4 and fixed plant noise level estimated at Section 3.5.6, the permissible sound power level of the outdoor E&M equipment can be calculated as below:

$$\begin{aligned} \text{Day Time and Evening Time Permissible Sound Power Level} &= 10 \log \left(10^{\frac{54}{10}} - 10^{\frac{32}{10}} \right) \\ &= 54 \text{ dB(A)} \end{aligned}$$

$$\text{Nigh Time Permissible Sound Power Level} = 10 \log \left(10^{\frac{48}{10}} - 10^{\frac{32}{10}} \right) = 48 \text{ dB(A)}$$

-
- 3.6.14 The calculated permissible sound power level serves as reference only for the future development and shall be updated once the architectural design finalises and noise source measurement result is obtained. To ensure the fixed plant noise generated by the Proposed Development would not cause excessive impact to the future developed domestic premises, planned fixed noise sources within the Proposed Development shall be properly designed to meet the relevant noise criteria as stipulated in Chapter 9 of the HKPSG and NCO. Provisions shall be made to control the fixed noise sources by suitable noise control measures recommended in Good Practices on Ventilation System Noise Control and Good Practices on Pumping System Noise Control whenever applicable. As such, it is anticipated that the fixed plant noise impact on the domestic premises due to the operation of the outdoor E&M equipment of Proposed Development will not exceed the relevant noise criteria under the HKPSG and NCO.
- 3.6.15 As long as the noise emission outdoor E&M equipment installed at the Proposed Development can satisfy the criteria in HKPSG and NCO, and would not cause adverse fixed plant noise impact to the domestic premises within the Proposed Development, the fixed plant noise impact to other NSRs out of the Site is anticipated to be small and acceptable, given the consideration of the distance and structure segregation between the Proposed Development and the urban area of Quarry Bay.

Noise from Event

- 3.6.16 Cultural and leisure usage is planned for the Proposed Development. In case the event is held at the open space, the sound emitted during the event might cause noise nuisance to the noise sensitive use within the Proposed Development as well as the surrounding.
- 3.6.17 The statutory control of the noise from events is under Section 5 of NCO at which noise causing annoyance to any person commits an offence. There is no quantitative noise level requirement on noise generated by event under HKPSG and the technical memorandums under NCO. In order to minimize the chance of causing annoyance to the residents of the Proposed Development and pedestrians nearby, preventing measures shall be implemented to control the noise from event at an acceptable level.
- 3.6.18 Considering that noise from event would be largely related to the management of the event organizer and the subjective acceptance of residents and receptor rather than the environmental condition, it is unlikely that the noise from event will be insurmountable and constitute as adverse environmental impact with the implementation of appropriate management practice.

3.7 Road Traffic Noise

- 3.7.1 The Proposed Development will comprise of domestic premises and is considered sensitive to road traffic noise. To evaluate the road traffic noise impact to the Proposed Development, a preliminary road traffic noise impact assessment has been conducted based on the conceptual design scheme of the Proposed Development and the assessment methodology and result is discussed in the following sections.

Road Traffic Noise Impact Assessment Methodology

Noise Prediction Methodology

- 3.7.2 NoiseMap Five is adopted in this Environmental Assessment to predict the road traffic noise level generated by the nearby road network to the Proposed Development. NoiseMap Five use the UK standard calculation methodologies Calculation of Road Traffic Noise, which is procedures recommended in HKPSG Chapter 9.

Noise Source

- 3.7.3 The road traffic noise impact assessment is based on the projected peak hourly traffic flows in 2045, which corresponds to the maximum projected traffic conditions within 15 years of occupancy of the Proposed Development, anticipated to be commenced in 2030. All road sections within the 300m buffering distance to the Site boundary have been considered. The detailed peak hour traffic forecast corresponding 2045 to is provided by the traffic consultant and is attached as Appendix A.

Noise Assessment Point

- 3.7.4 Conventionally, noise assessment points (NAPs) shall be assigned to the openable windows within rooms for habitation use, at which the provision of windows is to satisfy the natural ventilation requirement in Building (Planning) Regulation. At the current TPO Section 12A planning application stage, the architectural design of the Proposed Development is not yet available, and the rooms for habitation use or windows for ventilation are all yet to be determined. As an alternative method, the NAPs are distributed evenly along the building footprint of the conceptual design scheme of the Proposed Development to obtain a high-level understanding on the traffic noise level within the Site area. The locations of NAPs are set to be 1.2 m above the floor levels and 1m away from the building footprint. All the NAP are assigned with 360 degrees unobstructed view. The layout of the NAPs is presented in **Figure 3-2**.

Predicted Traffic Noise Level

- 3.7.5 The predicted road traffic noise levels at each NAPs at different floor levels are presented in **Table 3.8**. The distribution of predicted traffic noise levels is presented in **Figure 3-4**.

Table 3.8: Predicted Road Traffic Noise Level in L_{10} (1 hour) dB(A)

Floor Level	L02	L03	L04	L05	L06	L07	L08	L09	L10	L11
NAP id	6.4 mPD	9.6 mPD	12.8 mPD	16.0 mPD	19.2 mPD	22.4 mPD	25.6 mPD	28.8 mPD	32.0 mPD	35.2 mPD
1	77	78	78	77	77	77	76	76	76	76
2	78	78	78	78	77	77	77	76	76	76
3	79	79	79	78	78	78	77	77	77	76
4	72	72	72	72	72	72	71	71	71	71
5	70	70	70	70	70	70	70	70	69	69

6	69	69	69	69	69	69	69	69	69	68
7	68	69	69	68	68	68	68	68	68	68
8	67	68	68	68	68	68	68	68	68	68
9	44	44	44	44	44	44	44	46	49	52
10	44	44	44	44	44	44	44	46	49	52
11	44	44	44	44	44	44	45	47	49	52
12	44	44	44	44	44	45	45	47	49	52
13	44	44	44	44	45	45	45	47	49	52
14	45	45	45	45	45	45	45	47	49	52
15	46	46	46	46	47	48	51	56	61	63
16	47	47	47	48	50	54	68	<u>72</u>	<u>72</u>	<u>71</u>
17	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>
18	<u>78</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>75</u>
19	<u>78</u>	<u>78</u>	<u>78</u>	<u>78</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>	<u>76</u>
20	<u>79</u>	<u>79</u>	<u>78</u>	<u>78</u>	<u>78</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>
21	<u>73</u>	<u>73</u>	<u>72</u>	<u>72</u>	<u>72</u>	<u>72</u>	<u>72</u>	<u>71</u>	<u>71</u>	<u>71</u>
22	<u>73</u>	<u>74</u>	<u>74</u>	<u>73</u>	<u>73</u>	<u>73</u>	<u>73</u>	<u>72</u>	<u>72</u>	<u>72</u>
23	70	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>70</u>
24	68	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>70</u>	<u>70</u>	<u>70</u>	<u>70</u>
25	68	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>70</u>	<u>70</u>	<u>70</u>	<u>70</u>
26	<u>70</u>	<u>72</u>	<u>72</u>	<u>72</u>	<u>72</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>	<u>71</u>
27	<u>75</u>	<u>76</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>74</u>	<u>74</u>	<u>74</u>	<u>74</u>
28	<u>79</u>	<u>78</u>	<u>78</u>	<u>78</u>	<u>78</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>
29	<u>77</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>75</u>
30	45	45	45	45	45	45	46	47	50	53
31	46	46	46	46	46	46	46	47	50	53
32	46	46	46	46	46	46	46	47	50	54
33	47	47	47	47	46	46	46	47	50	55
34	47	47	47	47	46	46	46	47	50	54
35	46	46	46	46	46	46	46	47	50	53
36	46	45	45	45	45	45	46	47	50	53
37	45	45	45	45	45	45	45	47	49	53
38	46	46	46	47	50	55	67	<u>71</u>	<u>71</u>	<u>71</u>
39	<u>75</u>	<u>76</u>	<u>76</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>74</u>	<u>74</u>
40	<u>78</u>	<u>78</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>
41	<u>78</u>	<u>78</u>	<u>78</u>	<u>78</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>	<u>76</u>
Floor Level	L02	L03	L04	L05	L06	L07	L08	L09	L10	L11
NAP id	6.4 mPD	9.6 mPD	12.8 mPD	16.0 mPD	19.2 mPD	22.4 mPD	25.6 mPD	28.8 mPD	32.0 mPD	35.2 mPD
42	49	49	49	50	53	58	<u>74</u>	<u>76</u>	<u>76</u>	<u>76</u>
43	50	50	50	51	53	58	<u>73</u>	<u>76</u>	<u>76</u>	<u>76</u>
44	<u>79</u>	<u>79</u>	<u>78</u>	<u>78</u>	<u>78</u>	<u>78</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>
45	<u>76</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>
46	<u>75</u>	<u>76</u>	<u>76</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>74</u>	<u>74</u>
47	46	46	46	47	48	51	56	64	66	67
48	45	46	47	49	51	55	59	60	61	62

49	45	46	47	49	52	56	60	61	62	63
50	45	46	47	49	53	58	61	62	63	64
51	46	47	48	51	55	61	64	65	66	67
52	45	47	48	51	58	67	68	69	<u>70</u>	<u>71</u>
53	<u>71</u>	<u>72</u>	<u>72</u>	<u>72</u>	<u>72</u>	<u>72</u>	<u>73</u>	<u>73</u>	<u>73</u>	<u>74</u>
54	<u>73</u>	<u>74</u>	<u>74</u>	<u>74</u>	<u>74</u>	<u>74</u>	<u>74</u>	<u>74</u>	<u>74</u>	<u>74</u>
55	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>
56	<u>77</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>
57	<u>77</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>
58	<u>77</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>
59	<u>77</u>	<u>77</u>	<u>77</u>	<u>77</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>75</u>
60	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>76</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>
61	<u>74</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>75</u>	<u>74</u>	<u>74</u>	<u>74</u>	<u>74</u>
62	46	46	46	47	50	54	68	<u>71</u>	<u>71</u>	<u>71</u>
63	45	45	45	46	47	48	52	56	61	63
64	44	44	44	44	44	45	45	47	49	52
65	44	44	44	44	44	44	45	46	49	52
66	43	43	44	44	44	44	44	46	48	51
67	43	43	43	43	43	44	44	46	48	51
68	43	43	43	43	43	43	44	45	48	51
69	44	44	44	44	44	44	44	44	44	46

Remarks:

- a. The predicted road traffic noise levels exceeding the HKPSG criteria, $L_{10(1\text{hour})}$ 70 dB(A) are pointed out as bold and underlined.

3.7.6 Extensive exceedances of the HKPSG traffic noise criteria, $L_{10(1\text{hour})}$ 70 dB(A), are predicted. All the NAPs at the southern portion of the Proposed Development orienting to the IEC will sustain a road traffic noise level of over $L_{10(1\text{hour})}$ 70 dB(A), and at some floor levels will reach 79 dB(A). The overall traffic noise level compliance rate is 53%. Mitigation measures to address the adverse road traffic noise impact would be required if the location would be use as rooms for habitation.

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.
- Use quiet construction method, e.g. use saw-cut or hydraulic crusher instead of excavator-mounted percussive breaker.
- PME should be kept to a minimum and the parallel use of noisy equipment / machineries should be avoided.
- Erect noise barriers or noise enclosure for the PME if appropriate.
- Spot check resultant noise levels at nearby NSRs.

3.8.2 With the implementation of the above standardised mitigation measures, noise impacts during the construction phases of the Proposed Development will be minimised.

3.9 Mitigation Measure during Operation Stage

Existing Fixed Plant Noise Source

3.9.1 Existing fixed plant noise sources have identified at the vicinity of the Site as described at Section 3.4.3. Subject to the noise measurement and impact evaluation result on these sources at the later detailed design stage, mitigation measure like adjusting building layout could be considered whenever applicable.

Fixed Plant Noise Impact from the Proposed Development

3.9.2 As described in Section 3.4.8, the outdoor E&M equipment of the Proposed Development shall be designed to satisfy the criteria of HKPSG and NCO. And the noise insulation and control measures recommended in Good Practices on Ventilation System Noise Control and Good Practices on Pumping System Noise Control shall be implemented when applicable.

Noise from Event

3.9.3 The event organizer shall minimise the noise annoyance. It is suggested to follow the Noise Control Guidelines for Music, Singing and Instrument Performing Activities throughout the event and activities. Proper specific acoustic design shall be considered in case of anticipating noise annoyance during events. The feasible management practice would include, but not limited to, are as follows:

- Install sound insulating or sound absorptive materials/panels at suitable locations.
- Avoid orienting loudspeakers that direct music or sound to the noise sensitive use windows of the NSRs.
- Maintain the volume of the sound system at low levels as far as practicable;
- Use sound limiter, working along with a monitoring system, to control the volume generated from loudspeakers or manual adjustment and monitoring of the PA system;

- Noise monitoring will be carried out in accordance with the Noise control Guidelines for Music, Singing and Instrument Performing Activities;
- Announce and notify the potential noise sensitive uses before the event and enquiry for the comments on the acoustic control measures
- A manned complaint hotline shall be provided during events;

3.9.4 All practicable noise mitigation measures will be implemented, where reasonably required, to ensure compliance with NCO.

Traffic Noise

3.9.5 As mentioned in Section 3.5.6, exceedance of traffic noise level is predicted at the Proposed Development, and mitigation measures are necessary. several mitigation measures are discussed as below:

Re-location of Noise Sensitive Area

3.9.6 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 to be the rooms 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. Then opportunity of the residents exposing to high level of traffic noise can be reduced to maximum extent.

Acoustic Window and Acoustic Balcony

3.9.7 If opening toward IEC to satisfy ventilation requirement is found necessary during the detailed design stage, the receiver noise mitigation measures shall be provided. In reference to ProPECC PN 5/23 Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact, the provision of acoustic window parallel to dominant line source can provide a reduction of 6 to 8.5 dB(A) L10_(1 hour) for traffic noise, while the provision of enhanced acoustic balcony parallel to dominant line source can provide a reduction of 8 to 10.5 dB(A). As shown in Figure 3-4, about 80% of the predicted traffic noise levels are below 76 dB(A), which reflected that the traffic noise levels at that location can be suppressed to be under 70 dB(A) HKPSG criteria as long as acoustic windows are provided. For those 20% of locations at which the predicted traffic noise levels exceed 76 dB(A), provision of acoustic balcony shall be considered to ensure the compliance of HKPSG.

3.9.8 Therefore, the provision of acoustic windows would be an effective measure to mitigate the traffic noise impact on the Proposed Development.

-
- 3.9.9 In summary, several 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 measures, including the implementation of acoustic windows and acoustic balconies. A detailed feasibility study will be required to assess the technical criteria and feasibility in the next stage. An updated road traffic noise impact assessment will be conducted based on the finalised architectural design of the Proposed Development, and the schedule for the implementation of acoustic windows and balconies will be determined accordingly, in compliance with approval conditions.

3.10 Conclusions

- 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 operation the operation stage, the Proposed Development would induce fixed plant noise impact due to the installation of outdoor E&M equipment and might cause annoyance due to the noise generated in the 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 organizer shall follow the Noise Control Guidelines for Music, Singing and Instrument Performing Activities and implement appropriate management practice to prevent annoyance causing 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 fixed noise impact from the nearby existing noise sources shall be evaluated by conducting noise measurement. And the road traffic noise impact from the road network to the Proposed Development shall be re-assessed based on the finalised architectural design. The preliminary assessment in this Environmental Assessment report justify that these impacts would be surmountable. Typically, an updated noise impact assessment would be required in the TPO Section 12 planning application for residential developments which would potentially 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 Overall, the noise impact arisen 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 impact is anticipated.

Figure 3-1: Identified Noise Sensitive Receivers within 300 m Buffering Distance to Site Boundary

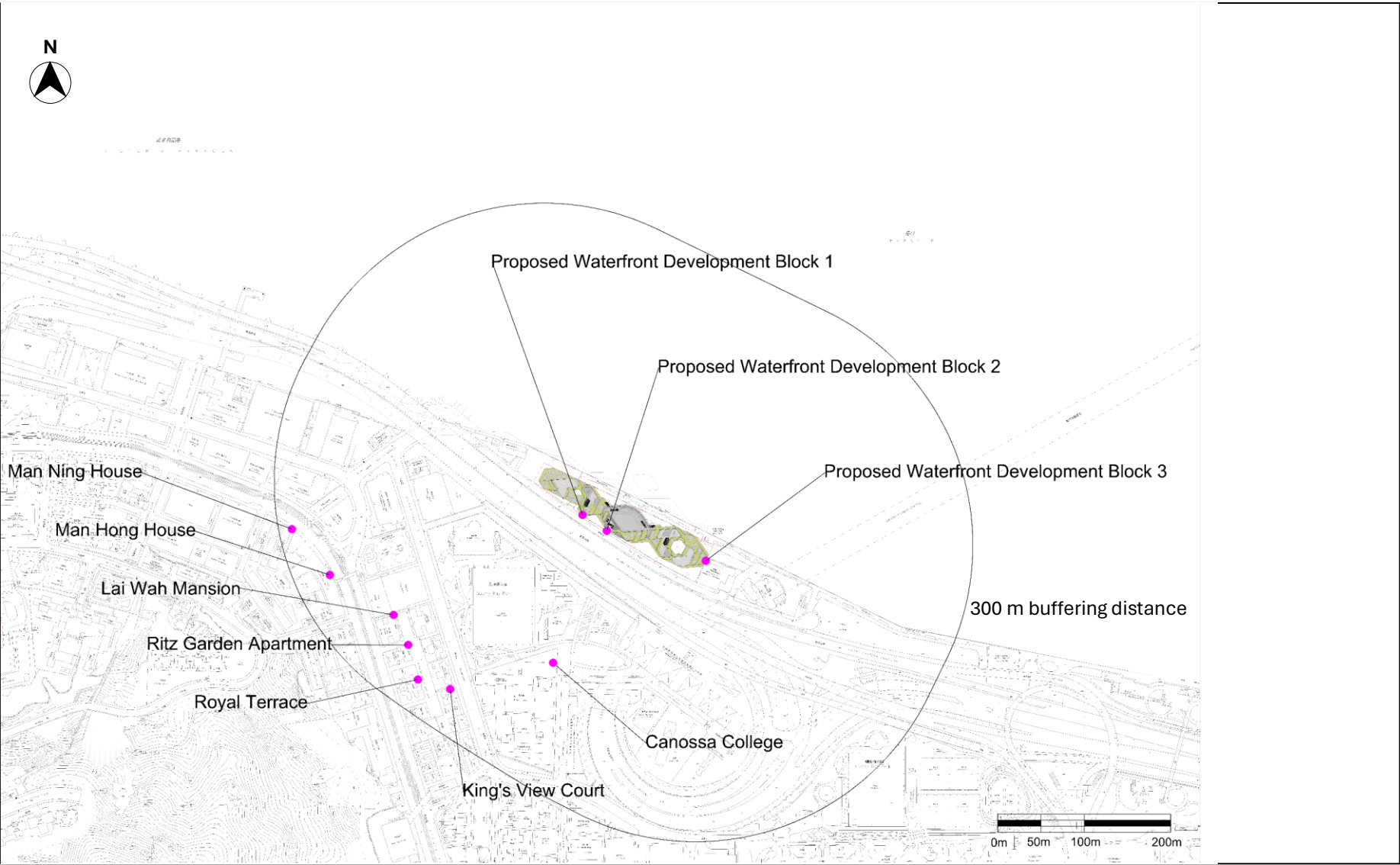


Figure 3-2: Identified Fixed Noise Sources at the Vicinity of the Site



Figure 3-3: Location of Noise Assessment Point

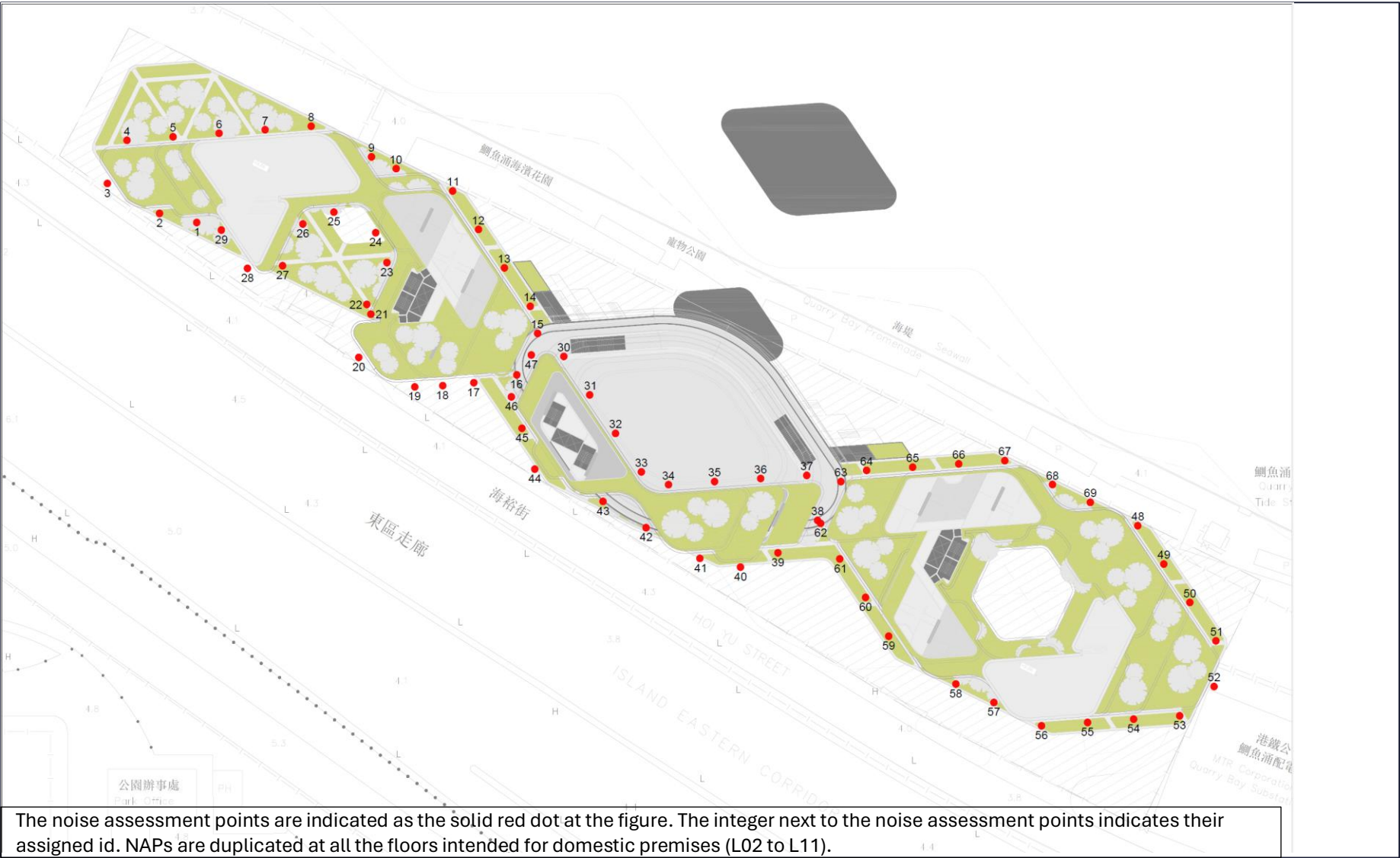
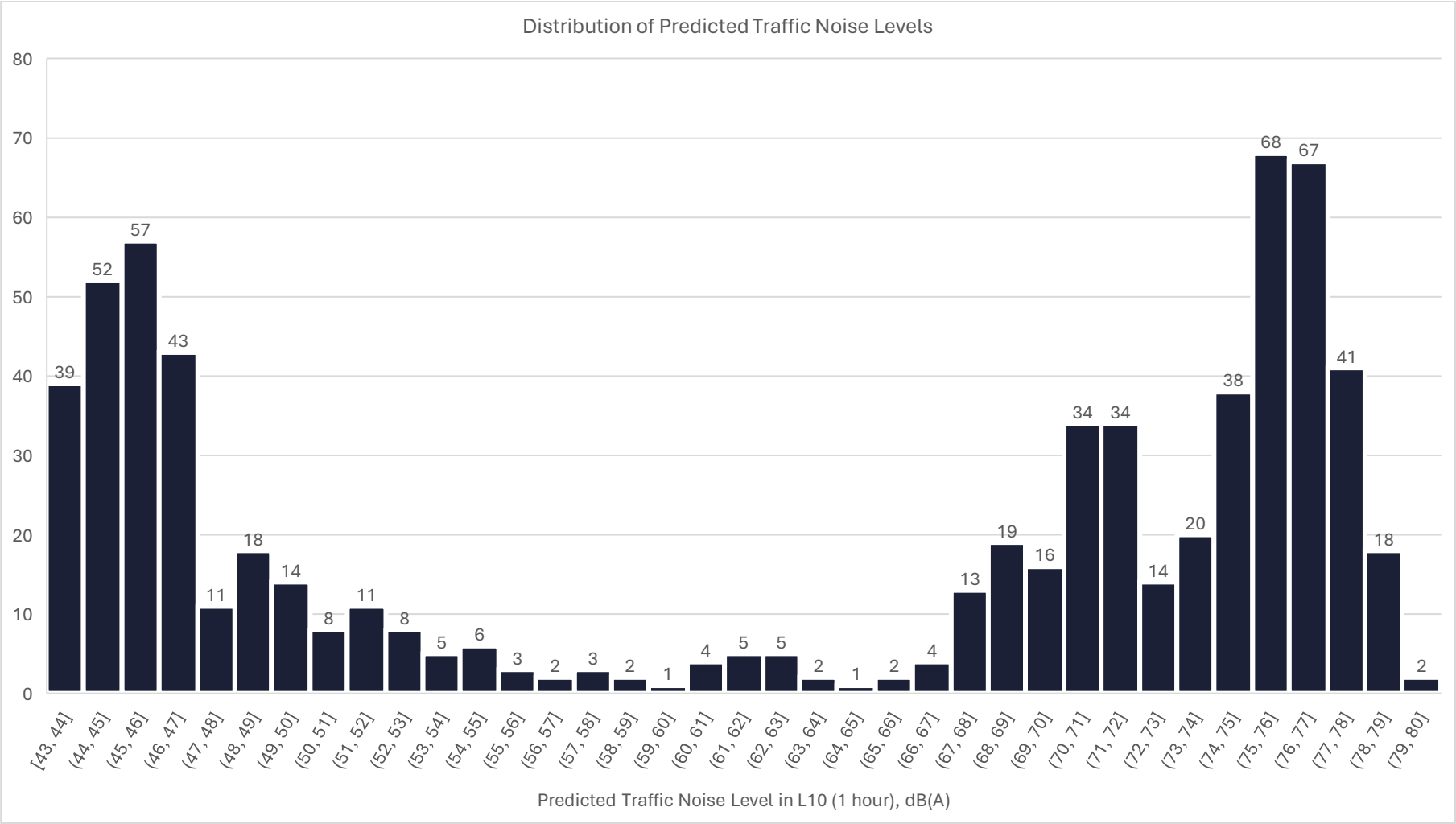


Figure 3-4: Distribution Chart of Predicted Traffic Noise Levels



4. WATER QUALITY

4.1 Background

- 4.1.1 The following section will assess the water quality impact that will be generated by the project during the construction and operation phase. Mitigation measures are recommended, where necessary, as part of the assessment.

4.2 Environmental Legislation and Standards

Water Pollution Control Ordinance (CAP. 358)

- 4.2.1 An amendment to the *Water Pollution Control Ordinance* (WPCO) was enacted in 1990 and provides a mechanism for setting effluent standards. These are included in the *Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters* of WPCO. All discharges into government sewerage systems, marine and inland waters are required to comply with the standards stipulated in the Technical Memorandum.
- 4.2.2 The Proposed Development locates in Victoria Harbour (Phase Three) Water Control Zone. The corresponding water quality objective is presented in **Table 4.1**.

Table 4.1: Water Quality Objective at Victoria Harbour (Phase Three) Water Control Zone

Parameter	Water Quality Objective	Part or Parts of Zone
A. AESTHETIC APPEARANCE	(a) There should be no objectionable odours or discolouration of the water.	Whole zone
	(b) Tarry residues, floating wood, articles made of glass, plastic, rubber or any other substances should be absent.	Whole zone
	(c) Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam.	Whole zone
	(d) There should be no recognisable sewage-derived debris.	Whole zone
	(e) Floating, submerged and semi-submerged objects of a size likely to interfere with the free movement of vessels, or cause damage to vessels, should be absent.	Whole zone
	(f) The water should not contain substances which settle to form objectionable deposits.	Whole zone
B. BACTERIA	The level of <i>Escherichia coli</i> should not exceed 1 000 per 100 mL, calculated as the geometric mean of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days. (E.R. 6 of 2020)	Inland waters
C. COLOUR	Human activity should not cause the colour of water to exceed 50 Hazen units	Inland waters
D. DISSOLVED OXYGEN	(a) The level of dissolved oxygen should not fall below 4 mg per litre for 90% of the sampling occasions during the whole year; values should be calculated as the annual water column average (see Note). In addition, the concentration of dissolved oxygen should not be less than 2 mg per litre within 2 m of the seabed for 90% of the sampling occasions during the whole year.	Marine waters
	(b) The level of dissolved oxygen should not be less than 4 mg per litre.	Inland waters
E. pH	(a) The pH of the water should be within the range of 6.5–8.5 units. In addition, human activity should not cause the natural pH range to be extended by more than 0.2 unit.	Marine waters
	(b) Human activity should not cause the pH of the water to exceed the range of 6.0–9.0 units.	Inland waters

F. TEMPERATURE	Human activity should not cause the daily temperature range to change by more than 2.0 degree Celsius.	Whole zone
Parameter	Water Quality Objective	Part or Parts of Zone
G. SALINITY	Human activity should not cause the salinity level to change by more than 10%.	Whole zone
H. SUSPENDED SOLIDS	(a) Human activity should neither cause the suspended solids concentration to be raised more than 30% nor give rise to accumulation of suspended solids which may adversely affect aquatic communities.	Marine waters
	(b) Human activity should not cause the annual median of suspended solids to exceed 25 mg per litre.	Inland waters
I. AMMONIA	The un-ionized ammoniacal nitrogen level should not be more than 0.021 mg per litre, calculated as the annual average (arithmetic mean).	Whole zone
J. NUTRIENTS	(a) Nutrients should not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants.	Marine waters
	(b) Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.4 mg per litre, expressed as annual water column average (see Note).	Marine waters
K. 5-DAY BIOCHEMICAL OXYGEN DEMAND	The 5-day biochemical oxygen demand should not exceed 5 mg per litre.	Inland waters
L. CHEMICAL OXYGEN DEMAND	The chemical oxygen demand should not exceed 30 mg per litre.	Inland waters
M. TOXIC SUBSTANCES	(a) Toxic substances in the water should not attain such levels as to produce significant toxic, carcinogenic, mutagenic or teratogenic effects in humans, fish or any other aquatic organisms, with due regard to biologically cumulative effects in food chains and to interactions of toxic substances with each other.	Whole zone
	(b) Human activity should not cause a risk to any beneficial use of the aquatic environment.	Whole zone

Note:

Expressed normally as the arithmetic mean of at least 3 measurements at 1 m below surface, mid depth and 1 m above the seabed. However, in water of a depth of 5 m or less the mean shall be that of 2 measurements (1 m below surface and 1 m above seabed), and in water of less than 3 m the 1 m below surface sample only shall apply.

Construction Site Drainage, ProPECC PN 2/24

- 4.2.3 Under *ProPECC Practice Note PN 2/24 Construction Site Drainage* (ProPECC PN 2/24), various guidelines for the handling and disposal of construction site discharges are included. The guidelines include the use of sediment traps, wheel washing facilities for vehicles leaving the Site, adequate maintenance of drainage systems to prevent flooding and overflow, sewage collection and treatment, and comprehensive waste management (collection, handling, transportation, and disposal) procedures.

Drainage Plan subject to Comment by Environmental Protection Department, ProPECC PN 1/23

- 4.2.4 Under *ProPECC Practice Note PN 1/23 Drainage Plan subject to Comment by Environmental Protection Department* (ProPECC PN 1/23), various guidelines for the pollution control for discharge to storm drains and foil sewers, such as the use of grease trap for wastewater from the restaurant kitchen, the use of silt removal facilities for open surface channel led to stormwater drains, etc. are included. The guidelines also include the requirements for submission of drainage plans.

4.3 Water Sensitive Receivers

- 4.3.1 The beneficial uses within that are sensitive to water pollution are considered as water sensitive receivers (WSRs). Within the 500 m buffering distance to Site boundary, two WSRs, Victoria Harbour and WSD Quarry Bay Salt Water Pumping Station, are identified and are considered relevant to the Proposed Development. Victoria Harbour is at the immediate north of the Proposed Development, while the Quarry Bay Salt Water Pumping Station is at the west. The location of the identified WSRs is indicated at **Figure 4.1**. Their information is summarised in **Table 4-2**.

Table 4.2: Identified WSRs relevant to Proposed Development

WSR ID	Description	Type	Approximate Distance to Site Boundary (m)
W1	Victoria Harbour	Open Marine Water	8.4
W2	Quarry Bay Salt Water Pumping Station	Seawater Intake	24.3

4.4 Water Quality Impact during Construction Stage

- 4.4.1 During the Construction Stage of the Proposed Development, the potential source of water quality impact is anticipated to be
- Construction Site Runoff
 - Accidental spillage of chemicals
 - Sewage generated from on-site construction workers

Construction Site Runoff

- 4.4.2 Construction site run-off may increase the loads of sediment and other contaminants. The discharge of uncontrolled site run-off may cause potential blockage of drainage channel and increase of SS level and turbidity in the nearby water body. The pH of the water system may be altered from the release of contaminants and result in toxic effects to the water biota. However, these potential impacts are considered as temporary and reversible. Construction site run-off usually comprises:
- Contaminated surface run-off and erosion from site surfaces, exposed bare soil and earth, drainage channels, earth working areas and stockpiles.
 - Effluents from dewatering associated with piling, grouting and cement washing;
 - Wastewater from dust suppression sprays and vehicle wheel washing; and;
 - Contaminated surface run-off by fuel, oil, solvents and lubricants from maintenance area for construction equipment and vehicle.

- 4.4.3 Because of the close distance to Site boundary, Victoria Harbour will be vulnerable to the construction runoff from the proposed development. Control measures shall be implemented by the contractor to prevent direct discharge of site runoff to Victoria Harbour. Impact from construction site runoff can be effectively minimised by good site practices and relevant guidelines. Adequate site drainage with sedimentation tank and perimeter drain along Site boundary will be provided on Site. With the implementation of mitigation measures and good site practices, it is expected that the effluent from the construction site will meet the requirements specified on the discharge licence and the WPCO-TM. Therefore, unacceptable water quality impacts on the WSRs are not anticipated.

Accidental Spillage of Chemicals

- 4.4.4 Surface soils may be contaminated by the accidental spillage of trace of chemicals used in general construction works, e.g. lubricant oil, paints, diesel and solvents, etc. The contaminated soil may be washed away by construction site run-off and enter nearby stormwater drainage channels, thus resulting in adverse water quality impacts. These potential impacts are considered as temporary and reversible.
- 4.4.5 Implementation of good construction and site management practices, such as perimeter drain along site boundary and sediment trap, will ensure the generation of accidental chemical spillage is minimised. As such, spillage of chemicals shall not enter nearby stormwater drains and adverse water quality impacts on the WSRs can be avoided.

Sewage Generated from On-Site Workforce and Staff

- 4.4.6 There will be sewage generation from Food & Beverage (F&B) areas, temporary sanitary facilities and waste disposal area for on-site construction workforce and staff. The characteristics of the sewage may include high levels of BOD₅, ammonia and *E. coli*. However, adverse water quality impacts on the water system including nearby WSRs are not anticipated by adequate control of construction phase sewage through provision of sewage collection and disposal facilities, such as on-site chemical toilets.

4.5 Water Quality Impact during the Operation Stage

- 4.5.1 The major sources of wastewater generation arising from the Proposed Development will be sewage from toilets; greywater from bathrooms showers and sinks; greywater from kitchens sinks and drains; and backwashing/cleaning water from water features. All such kinds of wastewater need to be properly collected and discharged to the existing public sewerage system.
- 4.5.2 There is existing public sewerage connection available adjacent to the Proposed Development. The sewerage connection and any necessary infrastructure shall be designed to allow sewage arising from the Proposed Development flow into the existing public sewerage system to ensure the compliance with the building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations. It is expected that a drainage plan will be prepared during the detailed design stage of the Proposed Development for review of Building Department (BD), Drainage Services Department (DSD), and EPD. It is anticipated that no water quality impact will arise from the sewage handling of the Proposed Development.

- 4.5.3 There will be no vehicle maintenance and repair conducted within the basement carpark. All the runoff within the basement will be properly collected and discharged to the drainage system. Mitigation measures, such as oil interceptors, will be provided before the terminal manhole to intercept any petrol, oil or mechanical grease washed from the road surface. With the provision of the oil interceptor, adverse water quality impact is not anticipated.

4.6 Mitigation Measures

Construction Phase

- 4.6.1 During construction, it is recommended that portable toilets should be provided for construction workers. These will be supplied, maintained and emptied (at a sewage treatment facility off-site) by a specialist contractor.
- 4.6.2 The construction contractor shall follow good site practice and be responsible for the design construction, operation and maintenance of all the mitigation measures specified in *ProPECC PN 2/24* for construction site drainage:
- Surface run-off from construction sites shall be discharged into storm drains after treated in adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels or earth bunds or sandbag barriers shall be provided on site to properly direct storm water to such silt removal facilities. Perimeter channels at site boundaries shall be provided where necessary to intercept storm run-off from outside the Site so that it will not wash across the Site.
 - Silt removal facilities, channels and manholes shall be maintained, and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are always functioning properly.
 - For the purpose of preventing soil erosion, temporarily exposed slope surfaces shall be covered e.g. by tarpaulin, and temporary access roads shall be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels shall be provided (e.g. along the crest/edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements shall always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.
 - Earthworks final surfaces shall be well compacted, and the subsequent permanent work or surface protection shall be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels shall be provided where necessary.
 - Measures shall be taken to minimise the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they shall be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations shall be discharged into storm drains via silt removal facilities.
 - Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites shall be covered with tarpaulin or similar fabric during rainstorms. Measures shall be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.
 - Manholes shall always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.
 - Discharge of surface run-off into foul sewers shall always be prevented in order not to unduly overload the sewerage system.

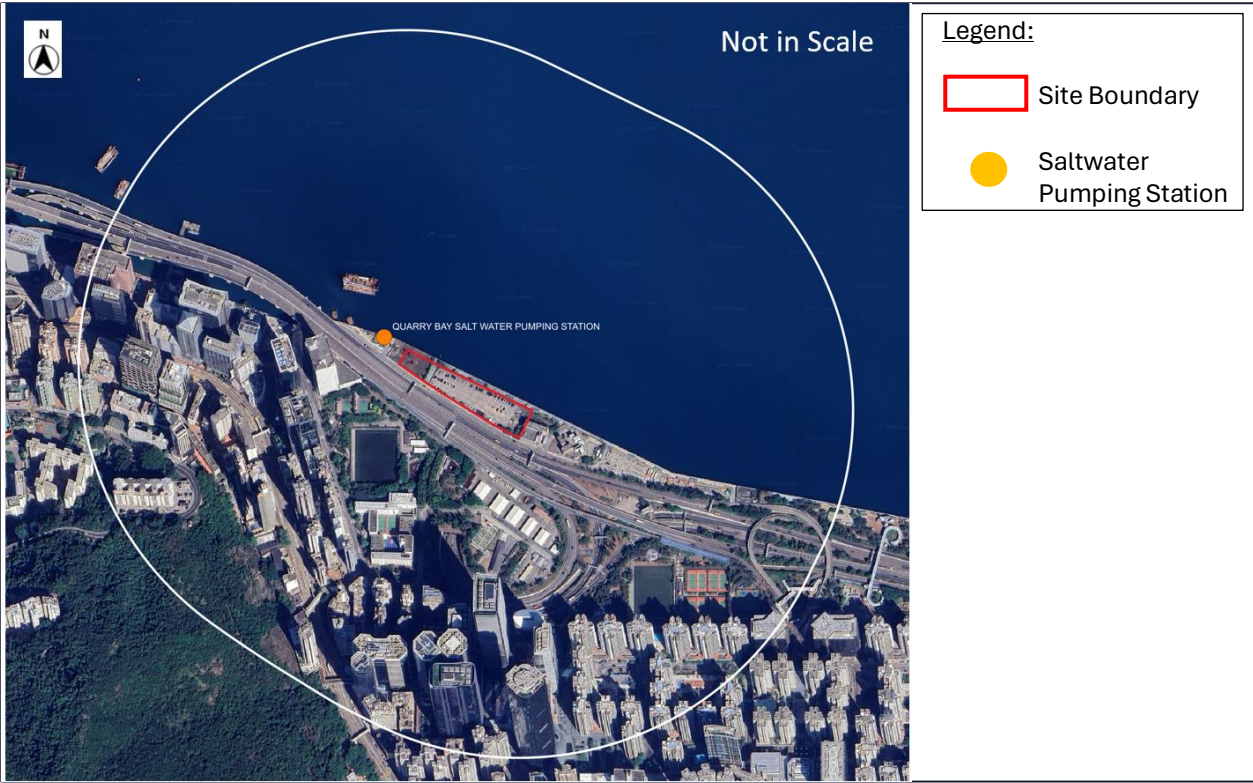
Operation Phase

- 4.6.3 Wastewater generated during the operation phase, including domestic sewage; will be collected and discharged to the public sewerage system. Therefore, no adverse water quality impact arising from the Proposed Development is anticipated.
- Proper drainage system will be provided within the basement car parks to collect the runoff, oil interceptors will be provided before the terminal manhole to intercept the petrol oil or mechanical grease wash-down from the road surface. With the provision of the oil interceptors, adverse water quality impact is not anticipated.
- 4.6.4 Grit and debris traps will be provided at the terminal manhole for the podium water feature to remove grit and debris before discharge to the storm drain. If chlorine will be used as the disinfectants, the effluent shall be discharged in accordance with the effluent standard as stipulated in the TM. With the provision of the mitigation measures, adverse water quality impact is not anticipated.

4.7 Conclusions

- 4.7.1 During construction, water quality impacts can be properly controlled with the implementation of good site practice as recommended in section 4.3.2. Portable toilets when necessary, will be provided for construction workers on-site. Provided these measures are implemented, it is unlikely that any adverse water quality impacts from the Site will be anticipated during the construction phase.
- 4.7.2 The contractor shall apply for a Discharge Licence from EPD under the WPCO. All site discharges should be treated as necessary in accordance with the terms and conditions of the Discharge Licence.
- 4.7.3 During operation, no adverse water quality impact is anticipated from the wastewater generated by the Proposed Development since all the wastewaters will be collected and discharged to the public sewerage system. No adverse water quality impact from the basement carpark, it is anticipated with the implementation of the recommended mitigation measures. With the provision of the mitigation measure, adverse water quality impact is not anticipated.
- 4.7.4 Overall, no adverse water quality impact is anticipated during the construction or operational phases of the Proposed Development.

Figure 4-1: Identified Water Quality Sensitive Receivers



5. WASTE MANAGEMENT

5.1 Background

- 5.1.1 The following section will assess the waste management impact that will be generated by the project during the construction and operation phase. Mitigation measures are recommended, where necessary, as part of the assessment.

5.2 Environmental Legislation and Standards

- 5.2.1 As various types of wastes will be generated from demolition, excavation, and construction, each waste stream will require a different approach for management according to their chemical and physical nature characteristics.

- 5.2.2 The legislation and guidelines applicable to the study and assessment of waste management implications include:

Waste Disposal Ordinance

- 5.2.3 The Waste Disposal Ordinance (WDO) prohibits any unauthorised disposal of wastes. Construction waste, defined under Cap. 354N of the WDO, refers to a substance, matter or thing which is generated from construction works. It includes all abandoned materials, whether processed or stockpiled or not, before being abandoned, but does not include sludge, screenings or matter removed or generated from desludging, desilting or dredging works.

- 5.2.4 Under the WDO, wastes can only be disposed of at designated waste disposal facilities licensed by the Environmental Protection Department (EPD). Breach of this Ordinance can lead to a fine and/or imprisonment. The WDO also stipulates the requirements for issuing licenses for the collection and transportation of waste.

Waste Disposal (Chemical Waste) (General) Regulation

- 5.2.5 According to the definition under this regulation, chemical waste includes scrap materials or unwanted substances specified under Schedule 1 of the Regulation, if such a substance or chemical occurs in such a form, quantity or concentration that causes pollution or constitutes a danger to health or risk of pollution to the environment. It provides regulations for chemical waste control, and administers the possession, storage, collection, transportation and disposal of chemical waste. The EPD has also issued a 'guideline' document – the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (1992), which details how the Contractor should comply with the regulations on chemical waste.

Waste Disposal (Charges for Disposal of Construction Waste) Regulation

- 5.2.6 Under the Waste Disposal (Charges for Disposal of Construction Waste) Regulation, enacted in January 2006, construction waste delivered to a landfill for disposal must not contain more than 50% by weight of inert material. Construction waste delivered to a sorting facility for disposal must contain more than 50% by weight of inert material, and construction waste delivered to a Public Fill Reception Facility (PFRF) for disposal must consist entirely of inert material.

Land (Miscellaneous Provisions) Ordinance

- 5.2.7 According to the Land (Miscellaneous Provisions) Ordinance, individuals or companies delivering public fill to PFRFs are required to hold dumping licences issued under delegated powers from the Director of Lands.

Dumping at Sea Ordinance

- 5.2.8 The Dumping at Sea Ordinance (DASO) is the principal statutory legislation to control dumping of sediment at sea. It safeguards the water quality and ecology of Hong Kong waters.

Public Cleansing and Prevention of Nuisances Regulation

- 5.2.9 The Public Cleansing and Prevention of Nuisances Regulation under the Public Health and Municipal Services Ordinance provides control on illegal tipping of wastes on unauthorised (unlicensed) sites.

Trip Ticket System for Disposal of Construction & Demolition Materials

- 5.2.10 The trip-ticket system is a recording system for orderly disposal of construction waste to disposal sites (i.e., PFRFs) by trucks. The contractor is required to complete a standard trip-ticket form outlining the details of the transportation vehicle, contents of the vehicle (type and approximate volume of waste) and the designated disposal facility. Once the waste is delivered to the designated facility, a receipt is issued to the vehicle operator for return to the project engineer or architect representative for verification of the contractor's compliance with the policy requirements.
- 5.2.11 The implementation of such a system has ensured a certain level of accountability between the project proponent, engineer/architect and the contractor. Moreover, it facilitates the recording of waste as it arrives at the landfill or PFRF and minimise the potential for cross-contamination with other waste which the vehicle operator may otherwise likely pick-up and route to the disposal facility. This system assumes that the contractor will bear the responsibility for the sorting (where applicable) of the construction waste generated on their site prior to its disposal.
- 5.2.12 Other relevant guidelines relate to waste management and disposal in Hong Kong include:
- Civil Engineering and Development Department (CEDD) Technical Circular No. 11/2019, Management of Construction and Demolition Materials.

- Building Department Practice Notes for Authorised Persons, Registered Structural Engineers and Registered Geotechnical Engineers Waste Minimisation – Construction and Demolition Waste (ADV-19).
- Building Department Practice Notes for Authorised Persons, Registered Structural Engineers and Registered Geotechnical Engineers Waste Minimisation – Provision of Fitments and Fittings in New Buildings (APP-114).
- Building Department Practice Notes for Registered Contractors (PNRC 17), Control of Environmental Nuisance from Construction.
- Code of Practice on the Packaging, Labelling and Storage of Chemical Waste.
- Administrative Guidance – Management Framework for Disposal of Dredged/Excavated Sediment” published by the EPD.
- Guidelines on Yard Waste Reduction and Treatment (July 2014).

5.3 Description of Existing Environment

5.3.1 The Application Site is a waterfront site on Hoi Yu Street, Quarry Bay. The Site is bounded by the Victoria Harbour to the north, MTR Corporation Quarry Bay Substation and East Harbour Tunnel Quarry Bay Ventilation Building to the east, Hoi Yu Street and Island East Corridor to the south, and Water Supplies Department Quarry Bay Saltwater Pumping Station to the west.

5.3.2 According to the most recent site inspection carried out on 4 October 2024, most of the Application Site area is paved. The existing conditions of the Application Site are shown in **Figure 5-1**.

Figure 5-1 Existing Conditions within the Application Site





5.4 Assessment Approach

- 5.4.1 The waste management hierarchy is to minimize waste generation. If waste generation cannot be avoided, a waste management plan will be established prior to commencement of works to outline the methods that can be incorporated into the Project for waste minimisation, including reuse, recycling, matching disposal with other projects, handling, storage, transportation and disposal of expected waste materials.
- 5.4.2 The waste management hierarchy is a concept that shows the desirability of various waste management methods and comprises the following in descending order of preference:
- Avoidance;
 - Minimization;
 - Reuse / recycling;
 - Treatment; and
 - Disposal.
- 5.4.3 The approach and method for assessing waste management implications during the construction and operation phases of the Project would be studied as per following:
- a) Estimation of types and quantities of the waste generated and fill to be imported;
 - b) Assessment of potential impacts from the management of waste with respect to potential hazards, air and odour emissions, noise, wastewater discharge and public transport;
 - c) Examination of the opportunities for reducing waste generation;

- d) Identification of disposal options for each type of waste; and
- e) Assessment of impacts on the capacity of waste collection, transfer and disposal facilities.

- 5.4.4 Prior to considering the disposal options for various types of waste, opportunities for reducing waste generation, on-site or offsite reuse and recycling have been evaluated. Measures which can be taken in the planning and design phases (i.e., by modifying the design approach) and in the construction phase for maximising waste reduction have been separately considered.
- 5.4.5 After considering all options and methods to reduce waste generation and maximising reuse opportunities, the types and quantities of waste required to be disposed are estimated and the disposal options for each waste stream are provided.
- 5.4.6 The disposal options recommended for the generated waste in this report have considered the result of the assessment. The impacts caused by handling (including stockpiling, labelling, packaging and storage), collection, and reuse / disposal of wastes are addressed, and the appropriate mitigation measures are discussed in the next section.

5.5 Potential Impacts

Construction Phase

- 5.5.1 The assessment on waste management implications is based on best available preliminary design information and it is anticipated majority of wastes are generated from site clearance, excavation and infrastructure development. **Table 5.1** outlined the identified waste streams during construction phase.

Table 5.1 Waste Types and Sources during the Construction Phase

Waste Types	Waste Sources	Examples
Construction and Demolition (C&D) materials (inert and non-inert)	- Site clearance - General excavation - Construction of developments	Inert C&D materials: - Rocks - Soft materials Non-inert C&D materials - Bamboo, timber, paper, plastic etc.
Marine Sediment	General excavation	Marine clay, marine mud
Chemical Waste	- Mechanical equipment maintenance - Operation and maintenance of plant and mechanical equipment	Cleaning fluids, solvents, waste lubricating oil and fuel etc.
General Refuse	Local workforce	Food waste, cans, waste paper etc.

Construction and Demolition Materials

- 5.5.2 C&D materials contain a mixture of inert and non-inert materials and is mainly generated from site clearance, excavation and infrastructure development. The quantity of C&D materials to be produced from the construction phase is estimated to be 97,744.50 m³.

-
- 5.5.3 Inert C&D materials generated from construction activities is expected at 97,355.85 m³ and would include, but not limited to rock, soil, concrete, asphalt, bitumen and soft granular materials that can be transported to Government's Public Fill Reception Facilities (PFRFs). Inert C&D materials will be used on-site as backfilling as much as possible before transporting to PFRFs. It is estimated that all inert C&D materials will be transported to PFRFs.
- 5.5.4 Non-inert C&D materials generated from the construction activities is expected at 388.65 m³ and would include, but not limited to bamboo, timber, vegetation, paper and plastic that cannot be transported to PFRFs. Non-inert C&D materials will be sorted on-site and taken to the appropriate recycling facilities, whilst timber and woody materials will also be sorted out on site and sent to the Yard Waste Recycling Centre Y·Park for recycling as much as possible. Excess non-recyclable non-inert C&D materials will be disposed of at designated landfills.
- 5.5.5 The quantities of materials generated during construction phase and the recommended disposal outlets are shown in **Table 5.3**. The proposed outlet of C&D materials is subject to agreement with the EPD and the CEDD at later stages of the Project. It is conservatively assumed that the excavated materials will only be reused within the corresponding site where the materials are generated.
- 5.5.6 To minimise the impact resulting from the collection and transportation of C&D materials for offsite disposal, inert C&D materials should be segregated from the C&D materials on-site for reuse as fill materials as far as practicable. The surplus inert C&D materials could be transported to PFRFs for beneficial use by any other projects in Hong Kong. Liaison with the CEDD Public Fill Committee (PFC) on the management of C&D materials will be required before the commencement of construction work. No construction work is allowed to proceed until all issues on management of C&D materials have been resolved and all relevant arrangements have been endorsed by the relevant authorities including the CEDD PFC and the EPD.
- 5.5.7 With the proper implementation of good construction site practice, waste reduction measures and mitigation measures recommendations outlined in **Section 5.6**, the on-site handling, reuse, transportation and disposal of C&D materials would not cause adverse environmental impacts.

Marine Sediment

- 5.5.8 Excavated sediment is expected due to reclamation of the Application Site in 1980s and the excavation of basement for the Proposed Development. Review of previous ground investigation records also indicate marine deposit will be conducted in S16 stage.
- 5.5.9 Based on the latest design scheme, basement excavation is proposed for culture venue and carpark within the Application Site at -9.7 mPD (bottom of basement to be at -7.2 mPD, and assumed 2.5m thick of pile cap). A preliminary building layout, excavation plans and sections are showed in **Figure 5.2**.
- 5.5.10 Estimated volume of sediment to be excavated shall be based on the area of excavation and the approximate thickness of marine deposit and is illustrated in **Table 5.2**.

Table 5.2 Estimated Volume of In-Situ Excavated Sediment

Area of Excavation (m ²)	Approx. Ground Level (mPD)	Approx. Base of Excavation Level (mPD)	Approx. Sediment Levels (mPD)	Approx. Thickness of Sediment (m)	Estimated Volume (m ³)
8,532		-9.2			1,700

Notes:

[1] mPD denotes metres below Principal Datum

[2] m denotes metres

- 5.5.11 Excavated 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 estimate to be 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 workforces to be employed for the Project is expected at 100 workers and the commercial and industrial waste generation of about 0.55 kg/person/day⁵ would be assumed. The general refuse arise from local work force during construction phase is estimated at 55 kg/day.

⁵ Commercial and industrial waste of 0.55 kg/person/day according to Plate 2.7 Per capita disposal rates of MSW, domestic waste and commercial & industrial waste from 2014 to 2023, Monitoring of Solid Waste in Hong Kong, Waste Statistics for 2023.

<https://www.wastereduction.gov.hk/sites/default/files/resources_centre/waste_statistics/msw2023_eng.pdf>

- 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 recyclables 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 5.3 Estimated Quantities of Wastes to be Generated during Construction Phase

Activities	Waste Type				
	Inert C&D Materials (m ³) ^[1]	Non-inert C&D Materials (m ³) ^[2]	Marine Sediment (m ³)	Chemical Waste	General Refuse
Site Clearance	1,706 ^[3]	0	0	N/A	N/A
Basement Excavation	92,152 ^[4]	0	1,700		
Construction of Superstructure	3,497.85 ^[5]	388.65 ^[5]	0		
Maintenance and Operation of Mobile Equipment	0	0	0	A few litres per month	100 workers at 55 kg/day ^[6]
Local Workforce	0	0	0	0	
Total	97,355.85	388.65	1,700	A few litres per month	
Management Options	On-site reuse: 0 PFRFs: 97,355.85	Recycle: 77.73 (Assuming recycling rate at 20%) Landfill: 310.92	On-site reuse: 0 Marine disposal: 1,700	Reduce and reuse before offsite disposal	Segregate general refuse from recyclables
Recommended outlets	On-site reuse before disposal to PFRFs at Tseung Kwan O Area 137	Reduce and recycle as much as possible before disposal to landfill at West New Territories Landfill	On-site reuse after treatment as much as possible before marine disposal	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 0.2 m, site area of 8,532 m², and concrete density of 2,400 kg/m³.
- [4] Assuming depth of basement is 11 m, site area of 8,532 m², and soil density of 1,600 kg/m³.
- [5] The amount is estimated based on a gross floor area (GFA) of 38,865 m² of the proposed development. With reference to the "Reduction of Construction Waste Final Report" (PolyU, 1993), a C&D materials generation rate of 0.1 m³ per 1 m² 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, 2023" issued by the EPD.
- [6] Assuming generation of commercial and industrial waste at 0.55 kg/person/day according to Plate 2.7 Per capita disposal rates of MSW, domestic waste and commercial & industrial waste from 2014 to 2023, Monitoring of Solid Waste in Hong Kong, Waste Statistics for 2023.

Operation Phase

General Refuse

- 5.5.18 Majority of wastes generated during operation phase would be general refuse arose 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 5.4**, based on the estimated number of occupants, showing about 0.75 tpd of wastes to be generated during fully operation 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 glass, metals, paper, plastics and putrescible. Most of these materials are recyclable which could significantly reduce the amount for final disposal.

Table 5.4 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	0.55 kg/person/day ^[2]	0.33 tpd ^[3]	- General Refuse - Recyclable Waste	Recycle as much as possible before disposal to landfill at West New Territories Landfill
429 (+10% allowance = 472) ^[1]	0.89 kg/person/day ^[2]	0.42 tpd		
Total	1.44 kg/person/day	0.75 tpd		

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 0.55 kg/person/day and domestic waste of 0.89 kg/person/day according to Plate 2.7 Per capita disposal rates of MSW, domestic waste and commercial & industrial waste from 2014 to 2023, Monitoring of Solid Waste in Hong Kong, Waste Statistics for 2023.
< https://www.wastereduction.gov.hk/sites/default/files/resources_centre/waste_statistics/msw2023_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 aluminium cans, plastics 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 enter 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.
- 5.5.23 Recyclable materials should be segregated into different containers to avoid potential odour nuisance to the residents and workers during transport of waste. Enclosed waste containers should be used; the collection route and time should be properly planned. The CRCC should contain mobile compactor and related equipment to provide adequate waste handling services. The remaining refuse should be collected at least once a day and must be disposed at approved waste transfer or disposal facilities by the waste collector.

Waste Recycling

- 5.5.24 To facilitate effectual waste recycling, future property management of the Proposed Development is recommended to implement a waste recycling programme, such as a 4-bin recycling system for paper, metal, glass and plastic, alongside with a general refuse bin. They should be placed in prominent places with clear indications to promote waste separation at source.
- 5.5.25 Provided that the mitigation measures as recommended in **Section 5.6** are adopted, the potential environmental impacts caused by the storage, handling transport and disposal of general refuse are expected to be minimal.
- 5.5.26 It is recommended that the general refuse be collected on a daily basis for disposal. With the proper implementation of the recommended mitigation measures, adverse impacts from waste management during operation phase are not anticipated.

5.6 Mitigation Measures

Construction Phase

- 5.6.1 The mitigation measures for construction phase are recommended based on the waste management hierarchy principles. Recommendations of good site practices, waste reduction measures, alongside with the waste transportation, storage and collection are described in the following:

Good Site Practices

- 5.6.2 Appropriate waste handling, transportation and disposal methods for different types of wastes generated from construction activities should be implemented to ensure these waste streams do not enter the nearby water sensitive receivers.
- 5.6.3 Adverse impacts related to waste management such as dust, odour, noise and wastewater discharge will not be expected to arise, provided that good site practices will be strictly followed. Recommendations for good site practices during the construction activities include:

- Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.
- Training of site personnel in proper waste management and chemical handling procedures;
- Provision of sufficient waste disposal points and regular collection of waste;
- Appropriate measures to minimise windblown litter and dust / odour during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;
- Provision of wheel washing facilities before the trucks leaving the works area so as to minimise dust introduction to public roads; and
- Well planned delivery programme for offsite disposal such that adverse environmental impact from transporting the inert or non-inert C&D materials is not anticipated.

Waste Reduction Measures

5.6.4 Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:

- Sort inert C&D materials to recover any recyclable portions such as metals;
- Segregation and storage of different types of waste in different containers or skips to enhance reuse or recycling of materials and their proper disposal;
- Encourage collection of recyclable waste such as waste paper and aluminium cans by providing separate labelled bins to enable such waste to be segregated from other general refuse generated by the work force;
- Proper site practices to minimise the potential for damage or contamination of inert C&D materials; and
- Plan the use of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.

5.6.5 In addition to the above measures, specific mitigation measures are recommended below for the identified waste arising to minimise environmental impacts during handling, transportation and disposal of these wastes.

Storage, Collection and Transportation of Waste

5.6.6 Storage of waste on-site may induce adverse environmental implications if not properly managed. The following recommendation should be implemented to minimise the impacts:

- All waste should be handled and stored properly to prevent leakage or overflow. An enclosed and covered area is preferred to reduce the occurrence of wind-blown light material;
- Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and
- Designation of different locations to stockpile each material to enhance reuse.

-
- 5.6.7 The collection and transportation of waste from works area to respective disposal sites may also induce adverse environmental impacts if not properly managed. The following recommendation should be implemented to minimise the impacts:
- Remove waste in a timely manner;
 - Employ trucks with cover or enclosed containers for waste transportation;
 - Obtain relevant waste disposal permits from the appropriate regulatory authorities; and
 - Disposal of waste should be done at licensed waste disposal facilities.
- 5.6.8 In addition to the above measures, other specific mitigation measures on handling the excavated materials, chemical waste and materials generated from construction phase are recommended below.
- Excavated C&D Materials**
- 5.6.9 Wherever practicable, C&D material generated from Project activities should be segregated from other wastes to avoid contamination and ensure acceptability at the PFRFs. The following mitigation measures should be implemented in handling the excavated C&D materials:
- Maintain temporary stockpiles and reuse excavated fill material for backfilling;
 - Carry out on-site sorting;
 - Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and
 - Implement a trip-ticket system in accordance with DEVB TCW No. 06/2010, Trip-ticket System for Disposal of Construction and Demolition Material for each works contract to ensure that the disposal of C&D materials are properly documented and verified.
- 5.6.10 Details of the recommended on-site sorting and reuse of C&D materials are provided below:
- 5.6.11 All C&D materials arising from the construction would be sorted on-site as far as practicable to recover the inert C&D material going to PFRFs and reusable / recyclable non-inert materials prior to disposal offsite. Non-inert portion of C&D materials, such as wood, timber, plastics, steel and other metals should be reused, recycled, and as last resort, disposed of to landfill.
- 5.6.12 The Contractor would be responsible for devising a system to work for on-site sorting of C&D materials and designated area(s) shall be setup within the site for the temporary stockpiling of C&D materials and to facilitate the sorting process. Within stockpile areas, the following shall be observed to minimise potential environmental impacts or nuisance:
- Cover the materials during heavy rainfall and windy days;
 - Locate stockpiles to minimise potential air quality, water quality and visual impacts; and
 - Minimise land intake of stockpile areas as far as possible.
- 5.6.13 It is recommended that the system should include the identification of the source of waste generation, estimated quantity, arrangement for on-site sorting and/or collection, temporary stockpile areas, and frequency of collection from recycling Contractors or frequency of removal offsite.

Reuse of C&D Material

- 5.6.14 It is estimated that C&D materials would be generated throughout the entire construction stage. The construction programme would be reviewed to maximize the quantity of on-site reuse of C&D materials whenever opportunity arises. The future Contractor should reuse the C&D materials as much as practicable to accommodate the actual site conditions and construction programme.

Transportation of C&D Material

- 5.6.15 The collection and transportation of waste from works area to respective disposal sites may also induce adverse environmental impacts if not properly managed. It is recommended to remove waste in timely manner; employ the trucks with cover or enclosed containers for waste transportation; obtain relevant waste disposal permits from the appropriate authorities; and dispose the waste at licensed waste disposal facilities.

Use of Standard Formwork and Planning of Construction Materials Purchasing

- 5.6.16 Standard formwork should also be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork (i.e., metal hoarding) or plastic facing should be encouraged in order to enhance the possibility of recycling. The purchasing of construction materials should be carefully planned in order to avoid excessive ordering and wastage.

Provision of Wheel Washing Facilities

- 5.6.17 Wheel washing facilities is mandatory and should be placed at the site entrance before the trucks leave the works area. Dust disturbance due to transportation of trucks to the public road network could be minimised by such arrangement.

Chemical Wastes

- 5.6.18 For those activities which generated chemical waste, it may be possible to find alternatives to eliminate the use of chemicals, reduce the generation quantities or replace with a chemical type that is less harmful on the environment and less invasive on the health and safety of workers.
- 5.6.19 When chemical waste is produced at the construction site, the Contractor should register with the EPD as a Chemical Waste Producer, and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with chemical wastes should be used.
- 5.6.20 Appropriate labels should be securely attached on each chemical waste container, indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, and corrosive, etc. The Contractor shall engage a licensed collector to transport and dispose the chemical wastes at the Chemical Waste Treatment Centre in Tsing Yi, or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.

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- 5.6.21 In order to prevent leakage or spillage, chemical wastes shall be properly packed and held in labelled containers and stored in designated storage area. Container of chemical waste shall be closed or sealed. Whereas chemical waste that cannot be recycled should be disposed of at either the CWTC, or other licensed facility, as mentioned above.

General Refuse

- 5.6.22 General refuse should be stored in enclosed bins separated from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a daily basis. It is expected that such arrangements would minimise potential environmental impacts. Adverse potential environmental impacts arising from waste management implications is not anticipated during construction phase.

Operation Phase

General Refuse

- 5.6.23 During operation phase, the major waste anticipated would be general refuse generated from household residents. It is recommended that future property management of the housing development adopt a waste reduction programme and employ a reputable cleaner / waste collector to provide routine cleaning to minimise odour, pest and litter impacts associated with the generation of domestic refuse.

5.7 Conclusions

- 5.7.1 The types of wastes generated during the construction and operation phases have been assessed, recommendations have been provided to minimise waste arising, and offsite disposal of each type of waste have been suggested.
- 5.7.2 C&D materials will inevitably be produced during the construction phase of the Project. Wastes generated from construction activities include inert and non-inert C&D materials, chemical waste and general refuse. Mitigation measures have been proposed following the avoidance-minimization-recycling-reuse-treatment-disposal hierarchy.
- 5.7.3 Wastes generated during construction phase can be minimised through careful planning during the detailed design and with good site practice during construction. The potential for reuse of inert C&D materials within the Project will be rigorously explored throughout the course of the Project in an effort to minimise offsite disposal. C&D materials is suggested to be recycled on-site as much as possible. Various waste management measures and good site practices have been provided to reduce the volume of waste.
- 5.7.4 During operation phase, no significant waste implication is expected from housing residents. The quantity of general refuse arising from the operation phase can be minimised by implementing an effectual waste handling system and waste reduction programme, and by hiring a reputable waste collector. As such it is considered to have no adverse environmental impacts

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- 5.7.5 Provided that the wastes are managed by implementing all the recommended mitigation measures, there would be no significant environmental impact anticipated during the construction and operation phases of the Project.

6. Land Contamination

6.1 Background

6.1.1 Potential land contamination issue of the Application Site is discussed in this section.

6.2 Environmental Legislation and Standards

6.2.1 Land contamination assessment has been conducted in accordance with the following legislation, standard and guidelines:

Guidance Note for Contaminated Land Assessment and Remediation

6.2.2 The Guidance Note for Contamination Land Assessment and Remediation (Guidance Note) sets out the requirements for proper assessment and management of potentially contaminated sites such as oil installations (e.g. oil depots, petrol filling stations), gas works, power plants, shipyards/boatyards, chemical manufacturing/processing plants, steel mills/metal workshops, car repairing/dismantling workshops and scrap yards. In addition, it provides guidelines on how site assessments should be conducted and analysed and suggests practical remedial measures that can be adopted for the cleanup of contaminated sites.

Practice Guide for Investigation and Remediation of Contaminated Land

6.2.3 The Practice Guide for Investigation and Remediation of Contaminated Land (Practice Guide) focuses on providing guidance on soil and groundwater contamination investigation, assessment and remediation. It outlines the process for conducting land contamination assessment and remediation in Hong Kong, and sets out the requirements for:

- Planning and implementation of the contaminated land investigation;
- Interpretation of the investigation results using the Risk-Based Remediation Goals (RBRGs);
- Reporting the contaminated land assessment;
- Planning and implementation of remediation actions; and
- Reporting the remediation works.

Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management

6.2.4 The Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management (Guidance Manual) introduces the risk-based approach in land contamination assessment and present instructions for comparison of soil and groundwater data to the RBRGs for 54 chemicals of concern commonly found in Hong Kong. The RBRGs were derived to suit Hong Kong conditions by following the international practice of adopting a risk-based methodology for contaminated land assessment and remediation and were designed to protect the health of people who could potentially be exposed to land impacted by chemicals under four broad post restoration land use categories. The RBRGs also serve as the remediation targets if remediation is necessary.

6.3 Site Appraisal and Potential Soil and Land Contamination

Historical Land Uses of the Site

- 6.3.1 Based on the review of aerial photographs, the Application Site was not formed until the 1980s by reclamation. Eastern and mid-portion of the Application Site operated as an open car park since the Site was formed until 2000, where containers and barging activities were observed. The eastern and mid-portion of the Application Site became an open car park again in 2010 and remains in operation till present day. According to the information from different Government Departments, the area was used as the Temporary Quarry Bay Public Fill Barging Point from 2005 to 2008.
- 6.3.2 Western portion of the Site remained vacant since its formation till 2017 with piling activities observed. Piling activities were completed before 2024 with no structures built. The portion remains vacant till present day. Historical aerial photographs are attached in **Appendix B**. No potential land contamination issues are observed and identified from the historical land use of the Application Site.

Site Walkover

- 6.3.3 Site walkover was conducted at the Application Site on 08 October 2024. The Site was used as an open car park with area mostly paved by concrete. The paved surface was well maintained. No oil stain nor any potentially land contaminating activities were observed. The site walkover checklist and the photographs taken during the site visit is provided in **Appendix C**.

Information from Governmental Department

- 6.3.4 The EPD has been consulted on 15 August 2024 for the records of Chemical Waste Producer (CWP) Registration and chemical spillage/leakage record on site. While no chemical spillage and leakage was recorded, three (3) chemical waste producer registrations were recorded. The letters are presented in **Appendix D**.
- Temporary Quarry Bay Public Fill Barging Point registered on 12 August 2005;
 - Construction Site of Proposed Industrial Development on I.L. 8590 RP & 8723 RP registered on 30 November 2011; and
 - Construction Site of Proposed Industrial Development on I.L. 8590 RP & 8723 RP registered on 28 June 2017.
- 6.3.5 The Temporary Quarry Bay Public Fill Barging Point was operated by the CEDD to collect and deliver inert construction and demolition waste in the past. The temporary barging point was closed in December 2008. Considering this facility was previously managed, and eventually terminated by a government authority, it is very unlikely that the activity there caused land contamination issue.

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- 6.3.6 Despite there were two (2) CWPs as construction site for industrial development, no construction activities were commenced except piling works as observed from the aerial photographs in the western portion of the Application Site. The Site was either remained vacant or operated as an open car park most of the time since its formation. It is unlikely that the two (2) CWPs for the construction activities would have material impact to the Site area.
- 6.3.7 Fire Service Department has been consulted on 15 August 2024 for the record of dangerous goods licence and incidents of spillage/leakage of dangerous goods related to the Site area. No dangerous goods licence and no incident of dangerous goods leakage/spillage was recorded. The letters are presented in **Appendix D**.

6.4 Conclusion

- 6.4.1 A site appraisal for the Application Site reviewing the past and present land use and activities was carried out through desktop studies, site walkover and review of information from Governmental Departments. No signs of contaminations nor potentially land contaminating activities were identified within the Application Site. Potential land contamination issues are not anticipated, and therefore no site investigation works will be required.

7. Sewerage Impact

7.1 Background

- 7.1.1 This section discuss the potential sewage impacts arising from the Proposed Scheme. A preliminary calculation will be conducted to comparison the previously Approved Scheme with the Proposed Scheme to demonstrate if there adverse impact.

7.2 Evaluation of Sewage Impact

- 7.2.1 To assess the acceptability of the sewage impact arising from the operation of the Proposed Development, the sewage generation has been estimated based on the following assumptions under **Table 7.1**:

Table 7.1 Parameter for Estimating Wastewater Generation from the Proposed Development

Parameter	Value
No. of Population (resident)	630 (advised by applicant)
Unit Flow Factor	0.37 (GESF)
No. of Population (office)	60 (advised by applicant)
Unit Flow Factor	1.58 (GESF)
No. of Population (Cultural, Leisure and Entertainment)	770 (Based on GFA 7703 meter sq. / 10)
Unit Flow Factor	0.015 (GESF)

- 7.2.2 Based on the assumptions in Table 7.1, the estimated total flow for the catchment is calculated to be 339.45m³/ day.
- 7.2.3 A Sewage Impact Assessment (SIA) was conducted for the Proposed Site in 2018, based on the results from the pervious SIA for the Approved Scheme, the estimated flow of the catchment was calculated 512.02m³ /day, which exceed the estimation for the Proposed Development.
- 7.2.4 Given that the site layout, existing condition and the sewage system have not been changed since that time, it is assumed that the Proposed Development will result in a lower sewage discharge rate when compared to the pervious approved Scheme.

7.3 Conclusion

- 7.3.1 Based on the preliminary calculation, the estimated total number of flow is 339.45m³/ day, which is lower than the previously Approved Scheme of 512.02m³ /day. Since there have been no change or update to the site conditions or the underground sewage system, this calculation indicates that there should be no unacceptable impact on the existing downstream sewage system, under the worst-case scenario for existing flows and the peak sewage discharge from the proposed development.
- 7.3.2 A detailed Sewage Impact Assessment will be conducted in the detailed design stages.

8. CLUSIONS

8.1.1 This Environmental Assessment (EA) has indicated that the Proposed Development and 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 A quantitative air quality impact assessment shall be carried out separately to confirm no adverse air quality impact on the Proposed Development during operation phase.

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

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 operation, the noise sensitive uses of the Proposed Development will not be subject to adverse fixed plant or traffic noise impact.

8.1.8 E&M equipment of the Proposed Development will mainly be located inside plant rooms or basement. Moreover, the M&E equipment of the Proposed Development will be designed to ensure compliance with the noise criteria stated in paragraph 3.1. As such, no adverse noise impact arising from the fixed noise of the Proposed Development.

8.1.9 Overall, therefore, the noise impact shall be minimized 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.

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- 8.1.11 During operation, no adverse water quality impact is anticipated from the Proposed Development since all the wastewater will be discharged to the public sewerage system. Beside, no adverse water quality impact from the basement carpark and water feature on the podium is anticipated with the implementation of the recommended mitigation measures.
- 8.1.12 Proper drainage system including grit and debris traps at the terminal manhole will be provided to remove grit and debris before discharge to the storm drain. With the provision of the mitigation measure, adverse water quality impact is not anticipated.
- 8.1.13 Overall, therefore, no adverse water quality impact is anticipated during the construction or operational phases of the Proposed Development.

Waste Management

- 8.1.14 The types of wastes generated during the construction and operation phases have been assessed, recommendations have been provided to minimise waste arising, and offsite disposal of each type of waste have been suggested.
- 8.1.15 C&D materials will inevitably be produced during the construction phase of the Project. Wastes generated from construction activities include inert and non-inert C&D materials, chemical waste, general refuse and asbestos-containing materials. Mitigation measures have been proposed following the avoidance-minimization-recycling-reuse-treatment-disposal hierarchy.
- 8.1.16 Wastes generated during construction phase can be minimised through careful planning during the detailed design and with good site practice during construction. The potential for reuse of inert C&D materials within the Project will be rigorously explored throughout the course of the Project in an effort to minimise offsite disposal. C&D materials is suggested to be recycled on-site as much as possible. Various waste management measures and good site practices have been provided to reduce the volume of waste.
- 8.1.17 During operation phase, no significant waste implication is expected from housing residents. The quantity of general refuse arising from the operation phase can be minimised by implementing an effectual waste handling system and waste reduction programme, and by hiring a reputable waste collector. As such it is considered to have no adverse environmental impacts.
- 8.1.18 Provided that the wastes are managed by implementing all the recommended mitigation measures, there would be no significant environmental impact anticipated during the construction and operation phases of the Project.

Land Contamination

- 8.1.19 The potential contaminated area at the Project Site is determined according to historical and current land uses and activities potentially leading to soil or groundwater contamination.

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- 8.1.20 Based on the aerial photographs, the Application Site was not formed until the 1980s by reclamation. Eastern and mid-portion of the Application Site operated as an open car park since the Site was formed until 2000, where containers and barging activities were observed. The portion became an open car park again in 2010 and remains in operation till present day. Western portion of the Site remained vacant since its formation till 2017 with piling activities observed. Piling activities were completed before 2024 with no structures built. The portion remains vacant till present day. No potential land contamination issues are observed and identified from the historical land use of the Application Site.
- 8.1.21 Based on the site inspection, no identification of any source of potential contamination within the Application Site. Potential land contamination issues are not anticipated, and hence no site investigation works will be required.

Sewage Impact

- 8.1.22 Preliminary study indicates that no Sewage Impact arising from the development, detailed study will be conducted under the next stage of planning application.

Appendix A Background Noise Monitoring Results

Measurement Location – BG1 - Quarry Bay Park Phase I

Set-up Photo



Measurement Date : 5 October 2018 (Friday)
Measurement Location: BG1 - Quarry Bay Park Phase I

Period	Measurement Height (mAQ)			Period	Measurement Height (mAQ)			Period	Measurement Height (mAQ)			Period	Measurement Height (mAQ)			Period	Measurement Height (mAQ)		
	2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]
00:00-00:05	51.1	58.8	56.6	04:00-04:05	49.5	53.1	51.9	08:00-08:05	58.7	63.4	61.3	12:00-12:05	58.5	61.4	59.6	16:00-16:05	59.5	61.1	60.2
00:05-00:10	52.6	57.4	55.1	04:05-04:10	48.9	53.0	51.2	08:05-08:10	59.1	63.2	61.3	12:05-12:10	58.5	62.1	60.5	16:05-16:10	59.8	61.0	59.7
00:10-00:15	53.2	57.6	55.8	04:10-04:15	49.5	52.8	51.5	08:10-08:15	60.7	62.6	60.7	12:10-12:15	57.7	61.6	59.5	16:10-16:15	64.4	61.8	62.4
00:15-00:20	52.4	57.0	55.0	04:15-04:20	49.8	53.5	52.0	08:15-08:20	57.8	62.0	59.9	12:15-12:20	58.7	61.7	59.8	16:15-16:20	67.2	63.1	64.6
00:20-00:25	52.6	57.2	55.3	04:20-04:25	49.7	53.4	52.0	08:20-08:25	57.3	61.7	59.8	12:20-12:25	59.2	62.1	60.5	16:20-16:25	68.8	61.9	63.3
00:25-00:30	51.1	57.8	55.9	04:25-04:30	49.3	53.1	51.6	08:25-08:30	57.8	61.8	59.9	12:25-12:30	60.4	62.1	60.7	16:25-16:30	60.6	60.7	59.7
01:30-01:35	52.2	56.5	54.6	04:30-04:35	49.8	53.8	52.5	08:30-08:35	58.2	61.9	59.9	12:30-12:35	58.5	61.4	59.7	16:30-16:35	59.8	61.5	60.1
00:35-00:40	53.0	57.8	55.8	04:35-04:40	49.5	53.3	51.8	08:35-08:40	57.9	61.5	59.7	12:35-12:40	59.2	62.2	60.5	16:35-16:40	67.7	65.4	65.6
00:40-00:45	52.7	57.0	55.2	04:40-04:45	49.3	52.7	51.4	08:40-08:45	57.4	61.2	59.6	12:40-12:45	60.3	62.1	60.8	16:40-16:45	69.1	66.9	67.9
00:45-00:50	52.3	56.7	54.5	04:45-04:50	48.5	51.9	50.5	08:45-08:50	56.8	60.6	58.7	12:45-12:50	59.4	61.6	60.0	16:45-16:50	66.4	64.8	65.5
00:50-00:55	51.8	56.5	54.6	04:50-04:55	48.9	52.2	50.8	08:50-08:55	56.9	61.2	59.2	12:50-12:55	60.6	61.4	60.7	16:50-16:55	61.5	61.7	61.2
00:55-01:00	51.5	56.1	54.0	04:55-05:00	48.8	52.9	51.2	08:55-09:00	57.4	61.4	59.6	12:55-13:00	61.7	61.7	60.4	16:55-17:00	62.7	62.2	61.5
01:00-01:05	51.5	55.5	53.7	05:00-05:05	48.7	52.3	50.8	09:00-09:05	56.7	61.1	59.2	13:00-13:05	62.6	62.9	61.8	17:00-17:05	63.9	62.3	62.1
01:05-01:10	51.3	55.5	53.8	05:05-05:10	49.6	53.5	51.8	09:05-09:10	57.2	61.6	59.6	13:05-13:10	62.9	62.7	62.2	17:05-17:10	64.2	63.0	62.9
01:10-01:15	51.3	55.9	53.9	05:10-05:15	49.3	53.1	51.3	09:10-09:15	57.7	61.9	60.2	13:10-13:15	63.5	61.8	61.2	17:10-17:15	61.9	62.1	61.4
01:15-01:20	52.5	56.3	54.8	05:15-05:20	49.7	53.8	51.7	09:15-09:20	57.7	62.1	60.3	13:15-13:20	61.3	61.9	60.3	17:15-17:20	62.6	62.2	61.5
01:20-01:25	51.0	55.4	53.5	05:20-05:25	49.3	53.0	51.4	09:20-09:25	58.2	62.9	60.9	13:20-13:25	61.1	62.4	60.8	17:20-17:25	62.9	62.5	62.1
01:25-01:30	50.8	54.8	53.0	05:25-05:30	49.9	53.8	52.0	09:25-09:30	60.0	63.4	61.7	13:25-13:30	60.2	63.7	62.6	17:25-17:30	64.0	62.7	62.7
01:30-01:35	50.9	55.0	53.1	05:30-05:35	49.0	52.7	50.9	09:30-09:35	59.2	63.1	61.4	13:30-13:35	59.3	62.2	61.0	17:30-17:35	64.1	62.9	62.8
01:35-01:40	50.9	55.0	53.3	05:35-05:40	49.1	52.8	51.2	09:35-09:40	58.5	62.7	60.9	13:35-13:40	59.0	62.6	60.7	17:35-17:40	62.0	61.7	61.1
01:40-01:45	50.4	54.5	52.5	05:40-05:45	50.3	54.4	52.6	09:40-09:45	58.6	62.8	60.9	13:40-13:45	58.8	62.6	60.8	17:40-17:45	63.9	63.0	63.0
01:45-01:50	49.9	54.1	52.3	05:45-05:50	49.8	53.4	51.9	09:45-09:50	58.6	63.1	61.2	13:45-14:50	58.5	62.4	60.5	17:45-17:50	61.3	62.2	61.1
01:50-01:55	51.0	54.8	53.0	05:50-05:55	51.4	55.5	53.4	09:50-09:55	58.9	63.9	61.2	13:50-14:55	57.6	61.9	60.1	17:50-17:55	60.3	61.4	60.2
01:55-02:00	50.5	54.3	52.6	05:55-06:00	50.6	54.2	52.6	09:55-10:00	58.0	62.5	60.8	14:00-14:05	57.3	62.1	60.2	17:55-18:00	60.0	61.5	60.2
02:00-02:05	51.5	55.9	54.0	06:00-06:05	52.0	54.7	52.9	10:00-10:05	58.2	62.8	60.9	14:05-14:10	57.5	62.0	59.9	18:00-18:05	60.3	61.4	60.1
02:05-02:10	52.9	56.5	55.5	06:05-06:10	52.0	55.5	53.9	10:05-10:10	58.1	62.3	60.5	14:10-14:15	57.7	61.9	59.9	18:05-18:10	63.0	62.3	61.9
02:10-02:15	49.6	53.4	51.7	06:10-06:15	52.7	56.1	55.6	10:10-10:15	57.9	62.4	60.4	14:15-14:20	58.3	62.0	60.0	18:10-18:15	58.1	61.3	59.7
02:15-02:20	49.7	53.9	52.1	06:15-06:20	53.7	56.3	56.3	10:15-10:20	57.3	61.7	59.7	14:20-14:25	57.9	62.2	60.5	18:15-18:20	58.7	60.7	59.1
02:20-02:25	50.1	54.1	52.5	06:20-06:25	53.8	56.6	54.6	10:20-10:25	57.3	61.7	59.6	14:25-14:30	57.3	62.0	60.1	18:20-18:25	60.0	62.8	62.4
02:25-02:30	50.2	53.9	52.5	06:25-06:30	53.9	57.0	55.2	10:25-10:30	57.3	62.0	59.9	14:30-14:35	57.0	61.6	59.5	18:25-18:30	60.1	61.8	60.8
02:30-02:35	50.9	54.3	53.2	06:30-06:35	56.1	59.1	57.3	10:30-10:35	58.0	62.5	60.6	14:35-14:40	57.5	61.7	59.6	18:30-18:35	60.6	61.6	60.6
02:35-02:40	50.0	53.9	52.3	06:35-06:40	55.5	58.9	56.9	10:35-10:40	58.6	62.7	60.9	14:40-14:45	58.4	61.6	59.5	18:35-18:40	58.5	60.9	59.4
02:40-02:45	49.6	53.5	51.9	06:40-06:45	55.5	59.6	57.6	10:40-10:45	58.3	62.8	61.0	14:45-14:50	60.6	62.1	60.6	18:40-18:45	58.0	61.0	59.2
02:45-02:50	49.7	53.6	52.0	06:45-06:50	57.2	60.3	58.5	10:45-10:50	58.0	62.4	60.6	14:50-14:55	62.2	62.1	60.6	18:45-18:50	57.1	61.6	59.4
02:50-02:55	49.8	53.4	51.9	06:50-06:55	56.2	60.3	58.4	10:50-10:55	57.7	61.9	60.0	14:55-14:55	61.6	61.4	60.2	18:50-18:55	58.3	60.4	58.6
02:55-03:00	49.8	53.4	51.8	06:55-07:00	55.8	59.8	57.6	10:55-11:00	57.5	61.9	60.0	14:55-15:00	62.4	61.3	60.1	18:55-19:00	57.6	60.4	58.6
03:00-03:05	50.9	53.3	52.1	07:00-07:05	56.3	60.7	58.7	11:00-11:05	58.4	62.2	60.7	15:00-15:05	62.2	61.7	60.2	19:00-19:05	57.5	60.4	58.7
03:05-03:10	50.2	54.2	52.7	07:05-07:10	56.8	61.3	59.0	11:05-11:10	60.6	62.9	61.3	15:05-15:10	61.4	61.0	59.5	19:05-19:10	57.6	60.0	58.5
03:10-03:15	50.1	53.8	52.0	07:10-07:15	57.6	63.6	59.9	11:10-11:15	58.9	62.0	60.2	15:10-15:15	61.8	61.2	59.8	19:10-19:15	59.1	60.8	59.3
03:15-03:20	51.9	53.9	52.9	07:15-07:20	57.2	61.7	59.3	11:15-11:20	60.8	62.2	60.6	15:15-15:20	57.7	61.4	59.5	19:15-19:20	60.1	61.1	60.1
03:20-03:25	49.2	52.9	51.5	07:20-07:25	60.9	66.4	63.4	11:20-11:25	62.2	62.7	61.6	15:20-15:25	57.7	61.8	59.8	19:20-19:25	59.0	61.0	59.4
03:25-03:30	49.9	53.3	51.9	07:25-07:30	58.6	64.1	60.9	11:25-11:30	65.1	62.5	61.9	15:25-15:30	57.1	61.3	59.2	19:25-19:30	58.4	60.5	58.6
03:30-03:35	49.9	53.0	51.8	07:30-07:35	58.1	62.5	60.3	11:30-11:35	64.8	63.2	62.8	15:30-15:35	56.2	60.4	58.2	19:30-19:35	58.4	61.0	59.3
03:35-03:40	48.7	51.9	50.7	07:35-07:40	58.5	62.6	60.2	11:35-11:40	61.2	62.6	61.7	15:35-15:40	55.9	60.4	58.2	19:35-19:40	57.8	60.5	58.8
03:40-03:45	49.8	53.4	52.0	07:40-07:45	58.7	62.9	60.6	11:40-11:45	60.9	62.5	61.3	15:40-15:45	56.8	60.4	58.4	19:40-19:45	59.1	61.1	59.5
03:45-03:50	51.2	54.3	53.0	07:45-07:55	58.5	62.9	60.9	11:45-11:55	61.4	62.0	61.1	15:45-15:55	59.2	60.9	59.4	19:45-19:55	59.6	61.6	60.2
03:50-03:55	48.9	52.1	50.9	07:50-07:55	58.7	63.0	61.2	11:50-11:55	58.1	61.9	60.3	15:50-15:55	59.0	61.1	59.5	19:50-19:55	61.5	62.2	61.0
03:55-04:00	49.2	53.0	51.8	07:55-08:00	58.7	63.4	61.4	11:55-12:00	57.9	61.9	60.1	15:55-16:00	61.5	61.0	60.3	19:55-20:00	61.8	62.0	61.2

Measurement Date : 6 October 2018 (Saturday)
Measurement Location: BG1 - Quarry Bay Park Phase 1

Period	Measurement Height (mAG)			Period	Measurement Height (mAG)			Period	Measurement Height (mAG)			Period	Measurement Height (mAG)			Period	Measurement Height (mAG)		
	2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]
00:00 - 00:05	53.8	56.4	58.5	04:00 - 04:05	49.9	52.5	55.0	08:00 - 08:05	66.0	61.8	61.4	12:00 - 12:05	58.8	58.8	60.4	16:00 - 16:05	58.0	59.2	61.3
00:05 - 00:10	53.3	56.1	58.0	04:05 - 04:10	49.1	51.5	53.6	08:05 - 08:10	71.6	66.5	63.5	12:05 - 12:10	59.2	59.5	60.9	16:05 - 16:10	58.6	59.6	61.1
00:10 - 00:15	53.6	56.2	58.2	04:10 - 04:15	51.7	54.0	56.6	08:10 - 08:15	66.0	65.1	63.6	12:10 - 12:15	56.8	58.1	59.8	16:10 - 16:15	60.4	60.3	61.6
00:15 - 00:20	54.0	56.8	58.8	04:15 - 04:20	49.9	52.8	55.0	08:15 - 08:20	69.3	64.3	62.8	12:15 - 12:20	57.5	55.0	59.9	16:15 - 16:20	59.7	60.6	61.8
00:20 - 00:25	53.1	55.6	57.7	04:20 - 04:25	49.2	51.4	53.5	08:20 - 08:25	69.6	65.4	63.3	12:20 - 12:25	57.2	58.6	60.3	16:20 - 16:25	58.8	59.6	61.0
00:25 - 00:30	52.4	55.1	57.2	04:25 - 04:30	48.4	50.6	52.3	08:25 - 08:30	68.7	64.5	63.1	12:25 - 11:30	56.5	58.3	60.2	16:25 - 16:30	60.1	60.7	61.7
01:30 - 01:35	52.4	55.0	57.2	04:30 - 04:35	48.7	50.9	52.7	08:30 - 08:35	70.5	65.3	63.2	12:30 - 10:35	59.5	58.5	59.9	16:30 - 16:35	60.5	59.9	61.1
00:35 - 00:40	51.6	54.1	56.4	04:35 - 04:40	48.6	51.2	53.2	08:35 - 08:40	73.8	68.3	64.5	12:35 - 11:40	59.6	59.6	61.0	16:35 - 16:40	62.1	60.4	61.2
00:40 - 00:45	52.6	54.8	56.8	04:40 - 04:45	49.3	51.6	53.5	08:40 - 08:45	80.2	72.9	67.7	12:40 - 10:45	61.6	60.7	61.6	16:40 - 16:45	61.1	59.7	60.7
00:45 - 00:50	51.8	54.3	56.5	04:45 - 04:50	48.5	51.0	52.9	08:45 - 08:50	71.3	70.0	65.0	12:45 - 10:50	59.8	59.9	61.3	16:45 - 16:50	60.5	59.5	60.6
00:50 - 00:55	52.1	54.9	57.2	04:50 - 04:55	48.1	50.3	52.0	08:50 - 08:55	75.7	70.2	66.3	12:50 - 12:55	60.0	59.5	61.4	16:50 - 16:55	57.9	58.6	60.3
00:55 - 01:00	51.7	53.9	56.1	04:55 - 05:00	50.1	52.4	54.2	08:55 - 09:00	68.7	65.1	63.4	12:55 - 13:00	61.7	60.8	61.9	16:55 - 17:00	56.9	58.2	60.2
01:00 - 01:05	51.9	54.2	56.4	05:00 - 05:05	49.4	51.3	53.3	09:00 - 09:05	71.9	65.7	64.0	13:00 - 13:05	66.9	62.9	61.2	17:00 - 17:05	56.4	58.0	60.0
01:05 - 01:10	51.3	53.9	56.3	05:05 - 05:10	49.8	52.5	54.6	09:05 - 09:10	70.9	66.8	64.9	13:05 - 13:10	62.0	60.5	61.7	17:05 - 17:10	57.0	58.6	60.5
01:10 - 01:15	51.3	53.2	55.4	05:10 - 05:15	49.2	51.4	53.4	09:10 - 09:15	64.3	62.4	62.7	13:10 - 13:15	58.4	59.1	60.8	17:10 - 17:15	56.6	58.6	60.6
01:15 - 01:20	52.3	54.4	56.5	05:15 - 05:20	48.6	51.2	53.1	09:15 - 09:20	70.5	66.1	64.5	13:15 - 13:20	60.1	59.9	61.1	17:15 - 17:20	57.0	59.0	60.7
01:20 - 01:25	52.2	54.7	57.3	05:20 - 05:25	49.2	51.2	53.3	09:20 - 09:25	69.0	65.5	64.3	13:20 - 13:25	59.8	59.8	61.1	17:20 - 17:25	57.0	58.8	60.6
01:25 - 01:30	51.8	54.3	56.4	05:25 - 05:30	50.1	52.5	54.5	09:25 - 09:30	69.6	65.6	64.5	13:25 - 13:30	58.6	59.2	60.9	17:25 - 17:30	57.0	59.2	61.2
01:30 - 01:35	52.1	54.3	56.4	05:30 - 05:35	49.6	51.8	53.6	09:30 - 09:35	67.3	63.8	63.0	13:30 - 13:35	58.4	59.2	60.6	17:30 - 17:35	57.6	59.0	61.0
01:35 - 01:40	52.0	54.8	56.8	05:35 - 05:40	49.0	51.2	53.3	09:35 - 09:40	64.5	62.7	61.9	13:35 - 12:40	58.2	59.1	60.5	17:35 - 17:40	58.3	58.7	60.3
01:40 - 01:45	51.2	53.7	55.8	05:40 - 05:45	49.5	51.6	53.7	09:40 - 09:45	60.3	60.6	61.6	13:40 - 13:45	60.7	59.8	60.7	17:40 - 17:45	57.8	58.8	60.5
01:45 - 01:50	51.6	54.1	56.4	05:45 - 05:50	50.2	52.4	54.5	09:45 - 09:50	58.5	59.8	61.7	13:45 - 14:50	60.9	60.5	61.4	17:45 - 17:50	57.0	58.7	60.3
01:50 - 01:55	50.7	53.4	55.6	05:50 - 05:55	49.8	51.6	53.7	09:50 - 09:55	58.2	60.1	62.0	13:50 - 14:55	58.1	59.2	60.8	17:50 - 17:55	56.6	58.5	60.4
01:55 - 02:00	52.3	55.3	57.4	05:55 - 06:00	49.8	51.5	53.3	09:55 - 10:00	57.5	59.4	61.5	13:55 - 14:00	59.3	59.6	60.8	17:55 - 18:00	56.9	58.0	60.0
02:00 - 02:05	50.9	53.4	55.5	06:00 - 06:05	52.4	53.0	54.9	10:00 - 10:05	58.0	59.3	61.3	14:00 - 14:05	57.9	58.8	60.3	18:00 - 18:05	59.1	58.4	60.1
02:05 - 02:10	50.8	53.2	55.0	06:05 - 06:10	51.1	52.9	55.0	10:05 - 10:10	60.4	61.2	62.5	14:05 - 14:10	58.6	59.0	60.6	18:05 - 18:10	57.3	58.4	60.0
02:10 - 02:15	50.4	53.1	55.3	06:10 - 06:15	52.8	53.7	55.3	10:10 - 10:15	59.2	60.6	62.1	14:10 - 14:15	58.6	59.3	60.8	18:10 - 18:15	56.8	57.6	59.5
02:15 - 02:20	50.4	52.9	55.1	06:15 - 06:20	53.7	54.4	55.8	10:15 - 10:20	59.1	60.0	61.6	14:15 - 14:20	60.4	60.3	61.3	18:15 - 18:20	56.9	57.4	59.1
02:20 - 02:25	50.7	53.0	55.0	06:20 - 06:25	53.2	54.3	55.9	10:20 - 10:25	58.9	59.9	61.6	14:20 - 14:25	58.4	59.0	60.8	18:20 - 18:25	57.4	57.8	59.5
02:25 - 02:30	50.8	53.5	55.6	06:25 - 06:30	55.3	56.4	57.6	10:25 - 10:30	59.4	60.2	61.8	14:25 - 14:30	59.6	61.1	61.5	18:25 - 18:30	57.9	58.0	59.3
02:30 - 02:35	49.8	52.3	54.6	06:30 - 06:35	55.7	58.1	60.6	10:30 - 10:35	60.5	61.3	62.7	14:30 - 14:35	58.4	58.8	60.6	18:30 - 18:35	57.1	58.0	59.6
02:35 - 02:40	50.4	52.8	54.9	06:35 - 06:40	55.0	56.5	59.2	10:35 - 10:40	58.7	61.5	59.8	14:35 - 14:40	58.0	58.6	60.2	18:35 - 18:40	58.0	58.2	59.7
02:40 - 02:45	49.9	52.5	54.5	06:40 - 06:45	55.2	56.7	58.5	10:40 - 10:45	58.7	59.7	61.5	14:40 - 14:45	57.2	58.5	60.3	18:40 - 18:45	60.4	59.7	60.6
02:45 - 02:50	51.9	54.1	56.3	06:45 - 06:50	53.5	55.2	57.1	10:45 - 10:50	57.7	59.5	61.3	14:45 - 14:50	58.9	59.4	60.8	18:45 - 18:50	63.1	62.5	62.7
02:50 - 02:55	51.0	53.6	55.5	06:50 - 06:55	54.4	55.8	57.9	10:50 - 10:55	58.3	59.9	61.7	14:50 - 14:55	58.6	59.0	60.5	18:50 - 18:55	62.1	60.8	61.0
02:55 - 03:00	50.1	52.5	54.4	06:55 - 07:00	53.6	55.5	57.9	10:55 - 11:00	58.0	59.5	61.4	14:55 - 15:00	58.2	58.9	60.5	18:55 - 19:00	64.5	62.5	62.9
03:00 - 03:05	51.0	53.4	55.1	07:00 - 07:05	56.2	58.7	58.7	11:00 - 11:05	59.0	61.5	59.9	15:00 - 15:05	58.6	59.2	61.0	19:00 - 19:05	67.0	64.5	64.5
03:05 - 03:10	51.7	54.1	56.6	07:05 - 07:10	55.9	57.2	59.3	11:05 - 11:10	62.2	61.1	62.1	15:05 - 15:10	60.3	59.6	60.9	19:05 - 19:10	66.8	64.9	64.6
03:10 - 03:15	49.6	52.1	54.0	07:10 - 07:15	57.0	57.3	59.0	11:10 - 11:15	59.4	60.2	61.8	15:10 - 15:15	58.2	59.7	61.5	19:10 - 19:15	65.5	63.8	63.5
03:15 - 03:20	49.3	51.8	53.9	07:15 - 07:20	56.0	56.8	58.8	11:15 - 11:20	59.3	59.7	61.4	15:15 - 15:20	59.7	61.1	62.0	19:15 - 19:20	65.1	63.3	62.8
03:20 - 03:25	49.0	51.5	53.7	07:20 - 07:25	57.1	57.6	59.5	11:20 - 11:25	59.0	59.7	61.4	15:20 - 15:25	58.9	59.8	61.2	19:20 - 19:25	59.2	59.0	60.2
03:25 - 03:30	49.1	51.6	53.9	07:25 - 07:30	60.6	59.2	59.9	11:25 - 11:30	58.2	61.1	58.2	15:25 - 15:30	57.8	59.5	61.4	19:25 - 19:30	65.4	63.8	63.0
03:30 - 03:35	52.9	55.4	57.0	07:30 - 07:35	61.6	59.4	59.9	11:30 - 11:35	58.5	59.4	61.1	15:30 - 15:35	60.0	60.1	61.6	19:30 - 19:35	65.8	63.8	62.7
03:35 - 03:40	50.0	52.6	54.6	07:35 - 07:40	67.4	63.0	61.8	11:35 - 11:40	58.2	59.2	61.0	15:35 - 15:40	59.9	59.5	60.7	19:35 - 19:40	65.5	63.3	63.9
03:40 - 03:45	49.2	51.5	53.4	07:40 - 07:45	63.3	60.9	60.8	11:40 - 11:45	58.1	59.1	60.9	15:40 - 15:45	60.1	60.2	61.3	19:40 - 19:45	64.9	63.0	63.2
03:45 - 03:50	49.3	51.9	54.1	07:45 - 07:55	62.2	60.0	60.7	11:45 - 11:55	58.5	58.8	60.3	15:45 - 15:55	60.4	60.1	61.0	19:45 - 19:55	64.3	64.6	64.7
03:50 - 03:55	48.7	50.8	52.5	07:50 - 07:55	62.3	60.7	60.8	11:50 - 11:55	57.7	58.9	60.6	15:50 - 15:55	59.3	59.3	60.7	19:50 - 19:55	68.2	64.4	63.1
03:55 - 04:00	48.9	51.3	53.3	07:55 - 08:00	62.3	60.6	61.2	11:55 - 12:00	57.5	58.8	60.4	15:55 - 16:00	61.9	62.3	63.0	19:55 - 20:00	64.1	62.2	62.0

Measurement Date : 7 October 2018 (Sunday)
Measurement Location: BG1 - Quarry Bay Park Phase 1

Measurement Height (mAG)				Measurement Height (mAG)				Measurement Height (mAG)				Measurement Height (mAG)				Measurement Height (mAG)				Measurement Height (mAG)			
Period	2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]	Period	2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]	Period	2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]	Period	2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]	Period	2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]	Period	2m LAeq [dB]	10m LAeq [dB]	15m LAeq [dB]
00:00 - 00:05	52.5	54.8	57.3	04:00 - 04:05	49.9	51.8	53.4	08:00 - 08:05	57.0	57.5	59.1	12:00 - 12:05	58.0	59.2	60.0	16:00 - 16:05	65.0	63.4	63.2	20:00 - 20:05	58.0	58.1	59.0
00:05 - 00:10	53.2	55.9	58.1	04:05 - 04:10	49.2	51.2	52.9	08:05 - 08:10	57.5	58.3	59.5	12:05 - 12:10	58.8	59.6	60.7	16:05 - 16:10	68.7	65.9	64.5	20:05 - 20:10	57.9	58.2	59.2
00:10 - 00:15	52.5	54.9	57.2	04:10 - 04:15	49.1	51.0	52.7	08:10 - 08:15	56.6	57.9	59.4	12:10 - 12:15	56.9	58.0	59.4	16:10 - 16:15	68.4	65.4	64.4	20:10 - 20:15	57.5	57.7	59.0
00:15 - 00:20	52.1	54.7	56.9	04:15 - 04:20	49.4	51.9	53.9	08:15 - 08:20	55.7	57.0	58.8	12:15 - 12:20	57.0	58.3	59.3	16:15 - 16:20	67.0	66.2	64.8	20:15 - 20:20	59.7	60.2	60.8
00:20 - 00:25	51.7	54.1	56.2	04:20 - 04:25	48.6	50.5	52.2	08:20 - 08:25	56.4	57.9	59.8	12:20 - 12:25	59.4	59.5	60.4	16:20 - 16:25	66.8	65.3	64.5	20:20 - 20:25	59.5	59.1	59.4
00:25 - 00:30	51.7	54.0	56.2	04:25 - 04:30	49.4	51.5	53.2	08:25 - 08:30	57.6	58.8	60.6	12:25 - 11:30	58.3	59.0	60.1	16:25 - 16:30	68.5	66.1	65.1	20:25 - 20:30	60.0	59.3	60.0
01:30 - 01:35	51.3	53.5	55.6	04:30 - 04:35	48.7	50.9	52.5	08:30 - 08:35	55.7	57.0	58.9	12:30 - 10:35	60.9	59.2	60.1	16:30 - 16:35	66.3	64.0	64.0	21:30 - 21:35	59.2	60.5	60.7
00:35 - 00:40	51.2	53.6	55.7	04:35 - 04:40	48.5	50.7	52.3	08:35 - 08:40	57.0	57.9	59.7	12:35 - 11:40	60.6	59.1	60.3	16:35 - 16:40	67.9	65.6	64.5	20:35 - 20:40	57.8	58.4	59.3
00:40 - 00:45	51.6	53.8	56.0	04:40 - 04:45	48.9	50.6	52.1	08:40 - 08:45	56.8	58.2	59.9	12:40 - 10:45	61.2	59.7	60.2	16:40 - 16:45	64.2	63.1	62.9	20:40 - 20:45	59.1	59.5	60.1
00:45 - 00:50	50.9	53.2	55.2	04:45 - 04:50	49.2	51.1	52.8	08:45 - 08:50	57.3	58.2	59.7	12:45 - 10:50	62.6	61.5	61.8	16:45 - 16:50	64.8	64.0	63.9	20:45 - 20:50	61.1	61.7	62.0
00:50 - 00:55	50.8	52.9	54.7	04:50 - 04:55	48.2	50.3	51.9	08:50 - 08:55	58.7	58.7	60.1	12:50 - 12:55	60.8	59.8	60.3	16:50 - 16:55	64.9	63.7	63.6	20:50 - 20:55	56.3	57.5	59.1
00:55 - 01:00	51.1	53.1	54.9	04:55 - 05:00	48.6	50.4	51.9	08:55 - 09:00	58.3	58.8	60.2	12:55 - 13:00	65.9	61.8	61.3	16:55 - 17:00	63.0	62.0	62.3	20:55 - 21:00	59.9	59.9	60.7
01:00 - 01:05	50.7	52.7	54.3	05:00 - 05:05	49.3	51.0	52.8	09:00 - 09:05	57.0	57.8	59.3	13:00 - 13:05	66.4	63.9	62.6	17:00 - 17:05	64.0	62.4	62.7	21:00 - 21:05	60.2	60.3	60.8
01:05 - 01:10	51.5	53.8	56.0	05:05 - 05:10	48.8	50.9	52.6	09:05 - 09:10	58.6	59.0	60.4	13:05 - 13:10	63.3	60.0	60.5	17:05 - 17:10	63.8	63.2	63.0	21:05 - 21:10	60.2	60.3	61.3
01:10 - 01:15	50.7	52.8	54.6	05:10 - 05:15	48.1	50.2	51.7	09:10 - 09:15	59.0	59.2	60.5	13:10 - 13:15	61.2	60.2	60.6	17:10 - 17:15	64.9	63.7	63.8	21:10 - 21:15	60.7	60.8	61.3
01:15 - 01:20	50.5	52.8	54.7	05:15 - 05:20	49.4	51.4	52.9	09:15 - 09:20	58.4	58.6	60.1	13:15 - 13:20	65.6	61.9	61.5	17:15 - 17:20	64.9	63.5	63.3	21:15 - 21:20	60.9	60.4	60.9
01:20 - 01:25	51.1	53.0	54.7	05:20 - 05:25	50.3	52.6	54.4	09:20 - 09:25	58.8	59.2	60.4	13:20 - 13:25	60.4	59.1	59.8	17:20 - 17:25	64.4	63.5	63.4	21:20 - 21:25	60.7	60.7	61.0
01:25 - 01:30	50.4	52.4	54.3	05:25 - 05:30	48.7	51.0	52.7	09:25 - 09:30	60.8	61.3	62.6	13:25 - 13:30	62.4	60.4	61.0	17:25 - 17:30	65.8	64.6	64.4	21:25 - 21:30	59.5	60.0	61.3
01:30 - 01:35	51.1	53.1	54.8	05:30 - 05:35	49.0	51.2	53.2	09:30 - 09:35	56.9	58.2	60.0	13:30 - 13:35	59.8	59.1	60.2	17:30 - 17:35	63.5	63.0	63.2	21:30 - 21:35	59.6	60.7	61.5
01:35 - 01:40	50.7	52.6	54.5	05:35 - 05:40	49.9	52.0	53.7	09:35 - 09:40	57.1	58.8	60.4	13:35 - 12:40	59.9	59.7	60.4	17:35 - 17:40	64.3	63.3	63.5	21:35 - 21:40	57.9	58.4	59.8
01:40 - 01:45	50.8	53.1	55.1	05:40 - 05:45	50.6	52.5	54.4	09:40 - 09:45	58.5	59.0	60.6	13:40 - 13:45	59.9	60.6	60.9	17:40 - 17:45	67.0	64.6	64.1	21:40 - 21:45	58.3	58.6	59.7
01:45 - 01:50	52.5	53.2	55.2	05:45 - 05:50	49.9	51.6	53.0	09:45 - 09:50	58.4	59.5	61.1	13:45 - 14:50	61.4	59.3	59.9	17:45 - 17:50	67.7	65.0	64.5	21:45 - 21:50	59.7	60.8	60.8
01:50 - 01:55	52.4	57.2	59.9	05:50 - 05:55	50.0	51.9	53.7	09:50 - 09:55	58.6	59.9	61.3	13:50 - 14:55	61.7	59.4	60.0	17:50 - 17:55	66.5	64.6	64.5	21:50 - 21:55	59.3	59.4	60.0
01:55 - 02:00	50.6	52.6	54.6	05:55 - 06:00	50.4	52.4	54.2	09:55 - 10:00	60.3	60.5	61.7	13:55 - 14:00	63.4	60.9	61.2	17:55 - 18:00	70.1	68.1	66.9	21:55 - 22:00	57.9	58.5	59.6
02:00 - 02:05	51.2	53.7	55.4	06:00 - 06:05	54.1	53.7	55.2	10:00 - 10:05	58.4	59.4	60.3	14:00 - 14:05	64.2	61.5	62.1	18:00 - 18:05	69.2	67.7	66.3	22:00 - 22:05	59.5	59.1	60.1
02:05 - 02:10	50.6	52.5	54.3	06:05 - 06:10	53.0	54.6	55.9	10:05 - 10:10	59.1	59.5	60.5	14:05 - 14:10	64.1	60.9	60.4	18:05 - 18:10	66.1	64.8	64.3	22:05 - 22:10	57.4	58.6	59.7
02:10 - 02:15	50.8	53.5	55.3	06:10 - 06:15	55.7	55.9	57.5	10:10 - 10:15	59.6	60.3	61.4	14:10 - 14:15	62.3	60.4	60.8	18:10 - 18:15	62.8	62.6	62.4	22:10 - 22:15	60.5	59.9	60.1
02:15 - 02:20	50.1	52.1	54.0	06:15 - 06:20	59.4	59.8	61.5	10:15 - 10:20	58.5	59.1	60.5	14:15 - 14:20	67.7	63.0	62.2	18:15 - 18:20	60.5	60.8	61.6	22:15 - 22:20	57.8	59.0	60.0
02:20 - 02:25	50.8	53.3	55.2	06:20 - 06:25	54.2	54.5	56.6	10:20 - 10:25	58.9	59.9	61.0	14:20 - 14:25	62.2	60.9	61.2	18:20 - 18:25	58.0	58.9	60.2	22:20 - 22:25	56.9	57.5	58.8
02:25 - 02:30	50.0	52.0	53.8	06:25 - 06:30	53.9	55.0	56.7	10:25 - 10:30	58.6	59.5	60.5	14:25 - 14:30	61.8	60.3	60.5	18:25 - 18:30	57.2	57.8	59.6	22:25 - 22:30	61.5	60.4	59.9
02:30 - 02:35	49.7	51.9	53.7	06:30 - 06:35	53.0	55.1	56.1	10:30 - 10:35	57.9	59.0	60.4	14:30 - 14:35	60.6	58.8	60.1	18:30 - 18:35	57.6	58.5	60.0	22:30 - 22:35	60.1	60.8	61.2
02:35 - 02:40	50.2	51.7	53.4	06:35 - 06:40	53.7	55.3	56.9	10:35 - 10:40	59.5	59.8	60.8	14:35 - 14:40	64.5	62.0	61.8	18:35 - 18:40	57.6	58.4	59.8	22:35 - 22:40	60.5	59.6	60.5
02:40 - 02:45	52.1	52.3	54.1	06:40 - 06:45	54.3	56.3	58.2	10:40 - 10:45	60.5	60.3	61.2	14:40 - 14:45	63.8	61.7	61.6	18:40 - 18:45	56.8	58.1	59.7	22:40 - 22:45	60.4	60.0	60.5
02:45 - 02:50	50.2	54.5	56.2	06:45 - 06:50	54.0	55.5	57.6	10:45 - 10:50	60.1	60.6	61.6	14:45 - 14:50	71.5	64.2	62.4	18:45 - 18:50	58.1	58.9	60.2	22:45 - 22:50	60.7	59.1	60.0
02:50 - 02:55	50.7	52.1	53.9	06:50 - 06:55	54.2	55.9	57.6	10:50 - 10:55	61.1	60.8	61.5	14:50 - 14:55	70.5	64.4	63.7	18:50 - 18:55	56.7	57.8	59.4	22:50 - 22:55	58.1	58.1	58.9
02:55 - 03:00	58.8	59.9	60.1	06:55 - 07:00	55.5	57.4	59.2	10:55 - 11:00	60.2	60.5	61.5	14:55 - 15:00	71.5	65.3	63.0	18:55 - 19:00	57.2	58.2	59.7	22:55 - 23:00	57.0	57.3	58.3
03:00 - 03:05	56.4	56.1	56.9	07:00 - 07:05	55.5	57.6	59.3	11:00 - 11:05	58.3	58.8	60.2	15:00 - 15:05	70.7	65.8	63.5	19:00 - 19:05	56.5	57.4	59.1	23:00 - 23:05	56.2	56.3	57.3
03:05 - 03:10	49.6	52.9	54.3	07:05 - 07:10	53.8	54.9	56.7	11:05 - 11:10	58.0	58.6	60.1	15:05 - 15:10	69.2	66.1	64.4	19:05 - 19:10	57.0	57.7	59.1	23:05 - 23:10	57.5	58.1	59.2
03:10 - 03:15	49.4	51.4	53.2	07:10 - 07:15	56.9	58.6	60.6	11:10 - 11:15	60.2	60.0	61.3	15:10 - 15:15	69.0	66.4	64.9	19:10 - 19:15	56.4	57.6	59.4	23:10 - 23:15	54.9	55.7	57.7
03:15 - 03:20	51.6	53.3	55.1	07:15 - 07:20	55.2	57.6	59.8	11:15 - 11:20	59.1	60.3	61.4	15:15 - 15:20	64.5	63.3	63.2	19:15 - 19:20	58.4	58.5	59.6	23:15 - 23:20	54.7	56.7	58.4
03:20 - 03:25	49.7	52.6	54.4	07:20 - 07:25	56.9	57.7	59.4	11:20 - 11:25	57.9	58.6	60.1	15:20 - 15:25	67.8	65.8	64.7	19:20 - 19:25	58.5	58.4	59.8	23:20 - 23:25	53.5	55.2	57.0
02:25 - 02:30	49.8	51.9	53.1	07:25 - 07:30	56.6	57.3	58.8	11:25 - 11:30	58.2	58.5	60.0	15:25 - 15:30	67.0	65.7	64.7	19:25 - 19:30	59.0	59.3	60.3	23:25 - 23:30	52.7	54.0	56.7
02:30 - 02:35	49.8	51.7	53.3	07:30 - 07:35	55.8	56.6	58.0	11:30 - 11:35	57.4	58.0	59.6	15:30 - 15:35	67.3	65.4	64.7	19:30 - 19:35	58.5	59.2	60.1	23:30 - 23:35	52.8	54.3	56.1
02:35 - 02:40	51.7	52.9	54.0	07:35 - 07:40	56.4	57.3	58.8	11:35 - 11:40	59.9	58.5	59.7	15:35 - 15:40	67.0	65.0	64.3	19:35 - 19:40	59.0	59.2	60.1</				

Measurement Location – BG2 - Quarry Bay Park Phase II

Set-up Photo



Measurement Date : 28 September 2018 (Friday)
Measurement Location: BG2 - Quarry Bay Park Phase II

Measurement Height (mAG)				Measurement Height (mAG)				Measurement Height (mAG)				Measurement Height (mAG)				Measurement Height (mAG)				Measurement Height (mAG)			
Period	2m			Period	2m			Period	2m			Period	2m			Period	2m			Period	2m		
	10m	10m	20m		10m	10m	20m		10m	10m	20m		10m	10m	20m		10m	10m	20m		10m	10m	20m
	L[Aeq] [dB]	L[Aeq] [dB]	L[Aeq] [dB]		L[Aeq] [dB]	L[Aeq] [dB]	L[Aeq] [dB]		L[Aeq] [dB]	L[Aeq] [dB]	L[Aeq] [dB]		L[Aeq] [dB]	L[Aeq] [dB]	L[Aeq] [dB]		L[Aeq] [dB]	L[Aeq] [dB]	L[Aeq] [dB]		L[Aeq] [dB]	L[Aeq] [dB]	L[Aeq] [dB]
00:00 - 00:05	54.4	56.7	58.2	04:00 - 04:05	50.5	51.6	53.4	08:00 - 08:05	60.0	61.4	63.2	12:00 - 12:05	62.9	63.6	66.7	16:00 - 16:05	60.6	61.4	63.3	20:00 - 20:05	62.9	62.9	63.7
00:05 - 00:10	54.9	56.6	58.4	04:05 - 04:10	54.0	56.0	58.0	08:05 - 08:10	58.7	60.3	62.4	12:05 - 12:10	60.4	61.2	63.0	16:05 - 16:10	61.7	61.6	63.2	20:05 - 20:10	62.2	62.3	63.5
00:10 - 00:15	52.8	54.4	56.3	04:10 - 04:15	52.5	54.9	56.8	08:10 - 08:15	59.5	60.8	62.7	12:10 - 12:15	60.2	61.3	63.2	16:10 - 16:15	61.4	62.0	63.4	20:10 - 20:15	59.6	60.6	62.4
00:15 - 00:20	53.1	54.8	56.5	04:15 - 04:20	51.7	53.1	54.8	08:15 - 08:20	59.6	60.9	62.8	12:15 - 12:20	61.1	61.8	63.2	16:15 - 16:20	61.2	61.9	63.2	20:15 - 20:20	58.9	59.7	61.5
00:20 - 00:25	52.9	54.7	56.6	04:20 - 04:25	51.9	53.4	55.2	08:20 - 08:25	60.1	61.3	63.1	12:20 - 12:25	60.9	61.4	63.3	16:20 - 16:25	62.2	62.5	63.9	20:20 - 20:25	58.5	59.4	61.2
00:25 - 00:30	52.5	54.4	56.6	04:25 - 04:30	51.8	52.7	54.4	08:25 - 08:30	61.0	61.7	63.2	12:25 - 12:30	61.0	61.6	63.2	16:25 - 16:30	62.2	63.0	64.5	20:25 - 20:30	59.7	60.1	61.9
00:30 - 00:35	53.7	55.7	57.7	04:30 - 04:35	51.6	53.1	55.1	08:30 - 08:35	60.0	61.3	63.2	12:30 - 10:35	62.8	63.0	64.6	16:30 - 16:35	63.4	63.6	64.4	21:30 - 21:35	59.8	60.2	61.8
00:35 - 00:40	53.3	55.4	57.2	04:35 - 04:40	52.7	54.2	55.9	08:35 - 08:40	61.0	61.9	63.5	12:35 - 12:40	61.1	61.3	63.0	16:35 - 16:40	64.1	64.9	65.3	21:40 - 21:45	60.0	60.4	62.0
00:40 - 00:45	53.8	55.8	57.5	04:40 - 04:45	51.0	52.1	53.9	08:40 - 08:45	59.8	61.0	62.7	12:40 - 10:45	59.9	60.6	62.2	16:40 - 16:45	62.5	61.5	62.6	20:40 - 20:45	61.5	60.5	61.5
00:45 - 00:50	52.2	54.2	56.0	04:45 - 04:50	52.4	53.9	55.5	08:45 - 08:50	59.2	60.5	62.2	12:45 - 10:50	59.9	60.7	62.5	16:45 - 16:50	61.1	61.5	63.0	20:45 - 20:50	62.9	61.2	62.2
00:50 - 00:55	54.0	56.2	57.8	04:50 - 04:55	50.7	51.7	53.4	08:50 - 08:55	59.7	61.0	62.8	12:50 - 12:55	71.1	71.9	74.2	16:50 - 16:55	62.5	61.7	63.4	20:50 - 20:55	60.8	61.2	62.5
00:55 - 01:00	54.0	56.3	58.1	04:55 - 05:00	51.8	52.9	54.6	08:55 - 09:00	60.0	61.1	62.8	12:55 - 13:00	60.3	61.5	63.7	16:55 - 17:00	60.7	61.5	63.6	20:55 - 21:00	59.1	59.8	61.5
01:00 - 01:05	54.1	56.1	57.9	05:00 - 05:05	51.4	52.6	54.5	09:00 - 09:05	59.8	61.1	62.8	13:00 - 13:05	62.4	64.0	66.0	17:00 - 17:05	60.5	61.7	63.8	21:00 - 21:05	59.7	60.2	62.0
01:05 - 01:10	51.0	52.6	54.4	05:05 - 05:10	51.9	53.2	54.9	09:05 - 09:10	61.7	63.5	65.5	13:05 - 13:10	63.7	65.0	66.7	17:05 - 17:10	61.3	61.5	62.6	21:05 - 21:10	62.0	61.5	63.3
01:10 - 01:15	52.4	54.3	56.1	05:10 - 05:15	53.1	54.8	56.5	09:10 - 09:15	59.7	61.0	62.9	13:10 - 13:15	62.3	63.3	65.2	17:10 - 17:15	59.5	59.9	61.6	21:10 - 21:15	60.8	61.0	62.7
01:15 - 01:20	51.0	52.6	54.8	05:15 - 05:20	51.7	53.0	54.9	09:15 - 09:20	60.4	61.7	63.7	13:15 - 13:20	60.4	61.4	63.1	17:15 - 17:20	60.9	61.5	63.4	21:15 - 21:20	59.1	59.9	61.7
01:20 - 01:25	50.9	52.3	54.5	05:20 - 05:25	52.1	53.6	55.3	09:20 - 09:25	65.4	68.0	69.9	13:20 - 13:25	61.0	61.6	63.1	17:20 - 17:25	59.7	60.4	62.1	21:20 - 21:25	59.2	59.6	61.4
01:25 - 01:30	51.9	53.8	55.7	05:25 - 05:30	53.0	55.2	56.6	09:25 - 09:30	60.4	61.2	62.9	13:25 - 13:30	60.9	61.5	62.9	17:25 - 17:30	59.8	60.4	62.2	21:25 - 21:30	59.9	59.8	61.7
01:30 - 01:35	50.8	52.4	54.0	05:30 - 05:35	51.6	52.9	54.6	09:30 - 09:35	61.2	61.9	63.5	13:30 - 13:35	59.0	60.0	61.9	17:30 - 17:35	60.4	61.1	63.1	21:30 - 21:35	60.7	61.2	62.9
01:35 - 01:40	50.6	52.0	53.7	05:35 - 05:40	52.3	53.9	55.5	09:35 - 09:40	60.9	61.7	63.5	13:35 - 13:40	60.6	61.4	63.1	17:35 - 17:40	60.2	60.4	62.1	21:35 - 21:40	61.2	62.0	63.9
01:40 - 01:45	55.5	58.0	60.2	05:40 - 05:45	53.8	55.4	57.1	09:40 - 09:45	59.3	60.3	62.0	13:40 - 13:45	59.6	60.2	62.0	17:40 - 17:45	59.6	60.7	62.8	21:40 - 21:45	58.4	59.2	61.1
01:45 - 01:50	52.8	54.8	56.6	05:45 - 05:50	51.8	53.0	54.9	09:45 - 09:50	61.6	62.9	64.0	13:45 - 14:50	60.6	61.1	62.9	17:45 - 17:50	58.8	59.8	61.7	21:45 - 21:50	60.1	60.3	61.9
01:50 - 01:55	51.0	52.8	54.5	05:50 - 05:55	53.6	55.2	57.2	09:50 - 09:55	59.7	61.0	62.6	13:50 - 14:55	60.5	61.2	62.8	17:50 - 17:55	59.0	60.0	61.9	21:50 - 21:55	63.4	65.4	67.8
01:55 - 02:00	54.1	56.1	57.9	05:55 - 06:00	54.1	56.0	57.3	09:55 - 10:00	58.7	60.4	62.1	13:55 - 14:00	60.4	61.2	63.0	17:55 - 18:00	60.1	60.7	62.7	21:55 - 22:00	59.5	60.1	61.7
02:00 - 02:05	49.5	51.0	52.7	06:00 - 06:05	54.6	55.8	57.1	10:00 - 10:05	58.9	60.4	62.2	14:00 - 14:05	59.7	60.6	62.4	18:00 - 18:05	59.3	60.6	62.6	22:00 - 22:05	58.7	59.1	60.7
02:05 - 02:10	50.5	51.9	53.6	06:05 - 06:10	53.9	55.2	56.9	10:05 - 10:10	59.8	60.9	62.5	14:05 - 14:10	59.1	60.4	62.3	18:05 - 18:10	59.7	60.1	62.1	22:05 - 22:10	59.8	60.4	62.0
02:10 - 02:15	50.2	52.0	53.8	06:10 - 06:15	54.4	55.5	57.0	10:10 - 10:15	59.4	60.6	62.6	14:10 - 14:15	59.5	60.7	62.5	18:10 - 18:15	59.3	60.7	62.7	22:10 - 22:15	59.4	60.4	62.1
02:15 - 02:20	51.0	52.8	54.8	06:15 - 06:20	55.6	57.3	59.5	10:15 - 10:20	61.0	62.3	64.1	14:15 - 14:20	60.0	61.3	63.2	18:15 - 18:20	58.9	60.0	61.7	22:15 - 22:20	60.0	60.6	62.0
02:20 - 02:25	51.2	52.7	54.4	06:20 - 06:25	55.7	57.1	59.0	10:20 - 10:25	60.3	61.1	63.0	14:20 - 14:25	60.0	61.2	63.2	18:20 - 18:25	60.0	61.0	62.4	22:20 - 22:25	59.5	60.6	61.9
02:25 - 02:30	50.5	52.3	54.0	06:25 - 06:30	57.6	59.2	61.0	10:25 - 10:30	64.2	65.4	67.0	14:25 - 14:30	58.8	60.0	61.8	18:25 - 18:30	60.0	60.8	62.3	22:25 - 22:30	59.3	60.4	62.0
02:30 - 02:35	50.4	52.1	54.0	06:30 - 06:35	57.5	59.2	61.2	10:30 - 10:35	60.9	62.0	63.8	14:30 - 14:35	58.8	60.0	62.5	18:30 - 18:35	60.6	61.1	62.6	22:30 - 22:35	59.3	60.4	62.3
02:35 - 02:40	51.8	53.7	55.4	06:35 - 06:40	58.0	59.9	61.8	10:35 - 10:40	61.9	63.1	64.6	14:35 - 14:40	63.3	64.2	65.5	18:35 - 18:40	60.7	61.5	62.9	22:35 - 22:40	59.3	60.1	62.1
02:40 - 02:45	52.0	53.6	55.5	06:40 - 06:45	57.3	59.2	61.0	10:40 - 10:45	61.9	63.2	64.9	14:40 - 14:45	60.5	60.8	62.6	18:40 - 18:45	60.4	61.1	63.0	22:40 - 22:45	58.6	59.5	61.2
02:45 - 02:50	51.5	52.8	54.7	06:45 - 06:50	58.1	59.5	61.3	10:45 - 10:50	61.9	63.1	64.9	14:45 - 14:50	60.0	61.0	62.8	18:45 - 18:50	59.9	60.5	62.4	22:45 - 22:50	58.8	59.5	61.5
02:50 - 02:55	51.8	53.0	54.7	06:50 - 06:55	57.6	58.6	60.5	10:50 - 10:55	62.4	63.5	65.2	14:50 - 14:55	64.2	64.1	64.5	18:50 - 18:55	58.7	59.6	60.9	22:50 - 22:55	59.2	59.8	61.4
02:55 - 03:00	52.0	53.4	55.1	06:55 - 07:00	57.0	58.2	60.1	10:55 - 11:00	61.8	62.9	64.8	14:55 - 15:00	65.2	64.2	64.8	18:55 - 19:00	60.4	61.0	62.5	22:55 - 23:00	58.4	59.3	60.7
03:00 - 03:05	52.5	53.6	55.7	07:00 - 07:05	57.5	58.7	60.6	11:00 - 11:05	61.4	62.2	64.2	15:00 - 15:05	61.7	62.4	63.6	19:00 - 19:05	60.3	61.3	63.1	23:00 - 23:05	57.9	59.0	60.2
03:05 - 03:10	51.0	52.2	54.1	07:05 - 07:10	58.8	59.6	61.5	11:05 - 11:10	60.2	61.6	63.5	15:05 - 15:10	59.2	60.5	62.1	19:05 - 19:10	59.7	61.3	62.9	23:05 - 23:10	56.1	57.6	59.7
03:10 - 03:15	51.4	52.4	54.0	07:10 - 07:15	58.0	59.4	61.2	11:10 - 11:15	59.8	61.0	62.5	15:10 - 15:15	60.0	60.9	62.5	19:10 - 19:15	58.8	60.0	61.7	23:10 - 23:15	56.2	57.7	59.6
03:15 - 03:20	53.7	55.6	57.2	07:15 - 07:20	58.2	59.6	61.5	11:15 - 11:20	60.9	61.6	63.3	15:15 - 15:20	62.8	63.0	63.9	19:15 - 19:20	60.8	61.4	62.4	23:15 - 23:20	54.8	56.2	58.2
03:20 - 03:25	51.2	52.2	54.1	07:20 - 07:25	58.0	59.4	61.2	11:20 - 11:25	63.5	64.1	65.7	15:20 - 15:25	60.2	61.3	63.0	19:20 - 19:25	61.1	61.3	62.4	23:20 - 23:25	54.8	56.3	58.3
03:25 - 0																							

Measurement Date : 29 September 2018 (Saturday)
Measurement Location: BG2 - Quarry Bay Park Phase II

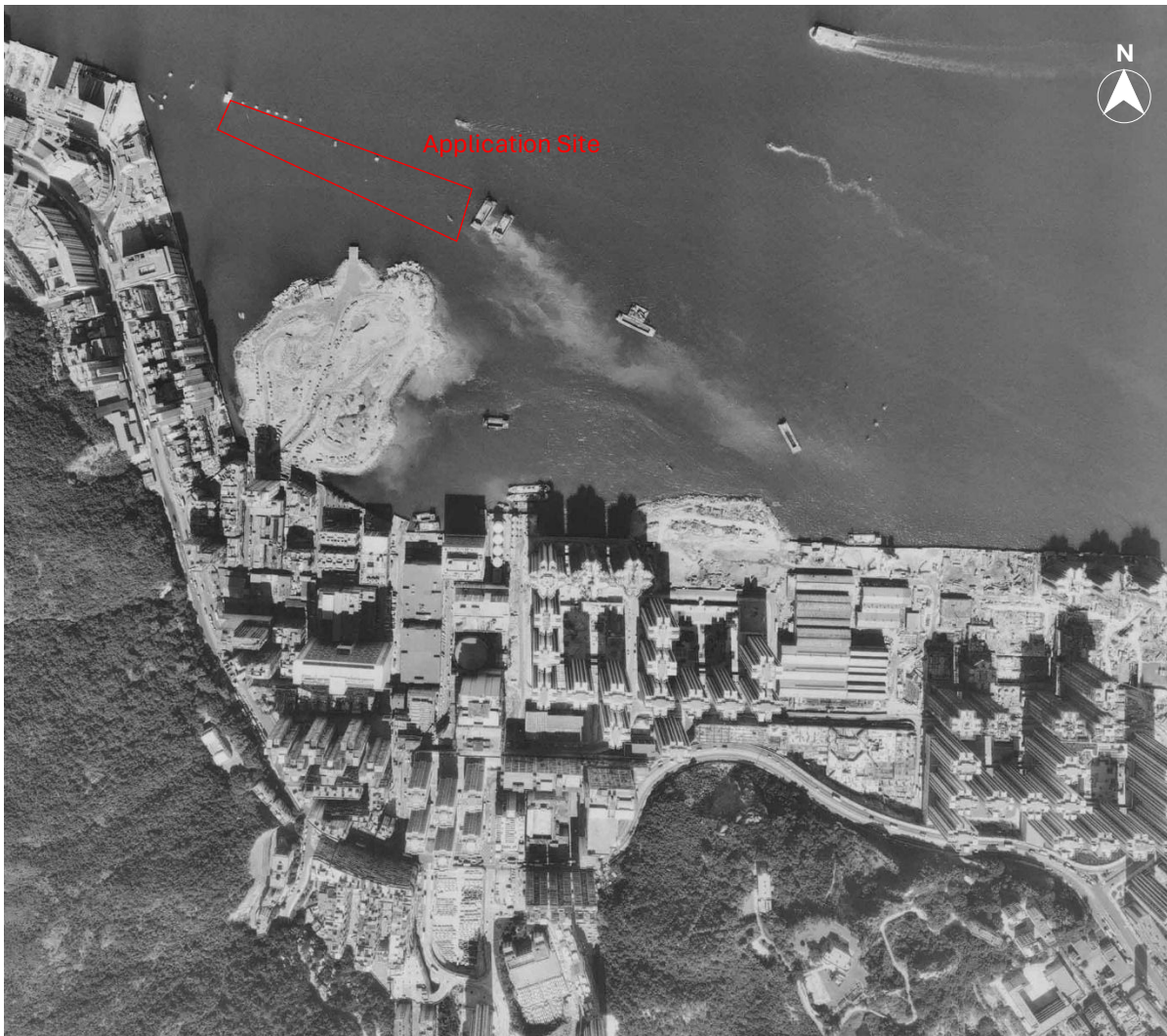
Period	Measurement Height (mAG)			Period	Measurement Height (mAG)			Period	Measurement Height (mAG)			Period	Measurement Height (mAG)			Period	Measurement Height (mAG)			Period	Measurement Height (mAG)		
	2m LAeq [dB]	10m LAeq [dB]	20m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	20m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	20m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	20m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	20m LAeq [dB]		2m LAeq [dB]	10m LAeq [dB]	20m LAeq [dB]
00:00-00:05	53.3	54.9	56.9	04:00-04:05	52.1	53.0	54.6	08:00-08:05	57.8	59.3	61.2	12:00-12:05	58.5	59.7	61.4	16:00-16:05	65.0	65.3	66.2	20:00-20:05	57.3	58.9	60.7
00:05-00:10	53.2	54.7	56.6	04:05-04:10	53.1	54.0	55.6	08:05-08:10	57.9	59.1	60.9	12:05-12:10	61.0	62.7	64.3	16:05-16:10	66.1	66.0	66.8	20:05-20:10	60.2	60.4	61.3
00:10-00:15	54.2	55.5	58.1	04:10-04:15	51.9	52.9	54.6	08:10-08:15	59.7	60.7	62.1	12:10-12:15	58.7	60.1	62.3	16:10-16:15	66.9	67.5	67.3	20:10-20:15	57.4	58.4	60.1
00:15-00:20	53.2	54.6	56.8	04:15-04:20	52.6	53.9	55.4	08:15-08:20	59.6	60.9	63.1	12:15-12:20	59.3	60.5	62.2	16:15-16:20	66.6	67.2	67.4	20:15-20:20	57.4	58.4	60.5
00:20-00:25	54.2	55.4	57.2	04:20-04:25	52.7	53.8	55.5	08:20-08:25	61.3	62.1	64.3	12:20-12:25	60.0	61.6	63.0	16:20-16:25	65.2	65.4	65.9	20:20-20:25	60.4	60.9	61.9
00:25-00:30	55.3	57.1	58.7	04:25-04:30	51.7	52.8	54.3	08:25-08:30	62.1	62.7	65.1	12:25-12:30	59.6	60.7	62.5	16:25-16:30	65.6	65.2	65.8	20:25-20:30	57.2	57.9	59.8
00:30-01:35	54.1	55.8	57.9	04:30-04:35	52.9	53.8	55.5	08:30-08:35	61.8	62.4	64.6	12:30-10:35	59.0	60.0	61.7	16:30-16:35	65.1	65.5	65.8	21:30-21:35	61.1	61.4	62.3
00:35-00:40	54.0	54.9	57.3	04:35-04:40	52.4	53.0	54.4	08:35-08:40	62.4	62.6	64.7	12:35-11:40	59.3	60.1	61.5	16:35-16:40	66.8	67.0	67.6	20:35-20:40	58.7	58.7	60.1
00:40-00:45	53.8	55.4	57.2	04:40-04:45	53.9	55.1	56.6	08:40-08:45	61.9	62.3	64.1	12:40-10:45	58.4	59.0	60.6	16:40-16:45	66.5	68.1	68.4	20:40-20:45	57.4	58.6	60.4
00:45-00:50	53.5	55.2	57.0	04:45-04:50	52.5	53.7	55.1	08:45-08:50	61.4	61.6	63.2	12:45-10:50	60.6	61.5	63.6	16:45-16:50	65.6	67.9	67.6	20:45-20:50	57.8	58.6	60.4
00:50-00:55	52.8	54.3	56.3	04:50-04:55	53.2	54.0	55.8	08:50-08:55	61.2	61.5	63.1	12:50-12:55	58.1	59.1	60.7	16:50-16:55	63.6	63.8	64.7	20:50-20:55	57.9	58.8	60.6
00:55-01:00	52.9	54.6	56.5	04:55-05:00	52.9	53.8	55.3	08:55-09:00	60.6	60.8	62.5	12:55-13:00	60.7	61.8	63.4	16:55-17:00	62.8	62.9	64.4	20:55-21:00	56.8	57.7	59.7
01:00-01:05	52.1	53.5	55.6	05:00-05:05	52.5	53.7	55.3	09:00-09:05	60.1	60.1	61.9	13:00-13:05	57.8	59.0	60.6	17:00-17:05	64.4	64.4	65.4	21:00-21:05	57.9	58.8	60.2
01:05-01:10	53.0	54.6	56.5	05:05-05:10	52.3	53.3	54.8	09:05-09:10	60.5	61.4	63.4	13:05-13:10	58.8	60.0	61.8	17:05-17:10	64.8	65.4	66.2	21:05-21:10	58.4	59.3	60.8
01:10-01:15	53.8	55.3	57.2	05:10-05:15	53.2	54.1	55.5	09:10-09:15	60.0	61.0	63.1	13:10-13:15	59.4	61.3	63.6	17:10-17:15	65.4	65.9	66.5	21:10-21:15	57.5	58.6	60.5
01:15-01:20	52.8	54.4	56.3	05:15-05:20	53.4	53.9	55.4	09:15-09:20	61.5	62.3	64.0	13:15-12:20	58.8	59.8	61.5	17:15-17:20	65.8	65.9	66.6	21:15-21:20	57.7	58.8	60.7
01:20-01:25	52.5	54.1	56.1	05:20-05:25	53.9	55.1	57.0	09:20-09:25	61.3	62.1	63.9	13:20-13:25	59.3	60.1	62.1	17:20-17:25	67.0	68.2	68.4	21:20-21:25	58.1	59.3	60.8
01:25-01:30	52.8	54.4	56.7	05:25-05:30	52.8	53.7	55.4	09:25-09:30	58.6	59.8	61.3	13:25-13:30	59.6	60.5	62.4	17:25-17:30	65.9	67.2	67.4	21:25-21:30	58.1	59.4	61.3
01:30-01:35	53.7	55.1	56.7	05:30-05:35	54.2	55.2	57.0	09:30-09:35	59.9	61.2	62.6	13:30-13:35	61.2	62.0	64.1	17:30-17:35	65.7	65.9	66.6	21:30-21:35	58.4	59.8	62.0
01:35-01:40	52.3	53.7	55.6	05:35-05:40	52.8	53.6	55.4	09:35-09:40	61.1	62.0	63.0	13:35-12:40	60.3	61.2	62.7	17:35-17:40	67.2	67.2	67.5	21:35-21:40	58.1	59.1	60.7
01:40-01:45	51.5	53.1	55.2	05:40-05:45	53.8	55.3	57.2	09:40-09:45	61.8	62.4	63.7	13:40-13:45	59.7	61.3	63.0	17:40-17:45	69.2	68.6	69.1	21:40-21:45	58.6	59.5	61.2
01:45-01:50	54.5	56.1	58.0	05:45-05:50	53.1	54.6	56.5	09:45-09:50	61.4	62.3	63.8	13:45-14:50	59.4	60.1	61.9	17:45-17:50	68.9	68.4	68.5	21:45-21:50	58.9	60.2	62.3
01:50-01:55	52.5	54.0	55.9	05:50-05:55	53.9	55.5	57.2	09:50-09:55	62.1	62.9	64.3	13:50-14:55	61.0	61.3	63.1	17:50-17:55	65.4	65.3	65.5	21:50-21:55	58.5	59.6	62.9
01:55-02:00	52.8	54.4	56.3	05:55-06:00	54.0	55.6	57.2	09:55-10:00	62.9	63.4	64.4	13:55-14:00	60.8	61.2	63.0	17:55-18:00	62.3	62.9	64.5	21:55-22:00	59.0	60.8	62.4
02:00-02:05	50.8	52.2	54.2	06:00-06:05	55.0	55.8	57.4	10:00-10:05	63.9	63.9	65.5	14:00-14:05	59.8	62.4	63.3	18:00-18:05	62.2	62.7	64.2	22:00-22:05	57.6	58.8	60.4
02:05-02:10	51.7	53.0	55.0	06:05-06:10	54.3	54.8	55.9	10:05-10:10	62.1	63.1	64.4	14:05-14:10	63.0	64.3	65.3	18:05-18:10	61.1	62.0	63.9	22:05-22:10	58.0	59.1	60.7
02:10-01:15	51.7	53.3	55.6	06:10-06:15	54.9	55.8	57.8	10:10-10:15	64.7	66.9	67.7	14:10-14:15	62.3	63.8	64.3	18:10-18:15	61.6	62.8	64.3	22:10-22:15	56.9	58.4	60.2
02:15-02:20	51.6	53.0	55.1	06:15-06:20	55.1	56.0	57.8	10:15-10:20	66.5	67.7	68.9	14:15-14:20	61.7	62.8	63.9	18:15-18:20	60.9	61.8	63.9	22:15-22:20	58.3	59.8	61.3
02:20-02:25	52.1	53.4	55.2	06:20-06:25	55.9	56.7	58.9	10:20-10:25	63.8	65.9	66.8	14:20-14:25	60.2	61.0	62.6	18:20-18:25	61.5	62.2	64.1	22:20-22:25	57.0	58.0	59.9
02:25-02:30	51.0	52.3	54.2	06:25-06:30	55.4	56.2	58.1	10:25-10:30	64.6	65.5	66.7	14:25-14:30	59.7	61.4	62.4	18:25-18:30	59.8	60.7	63.3	22:25-22:30	57.3	58.4	60.2
02:30-02:35	51.9	53.4	55.3	06:30-06:35	55.0	56.1	57.9	10:30-10:35	61.9	63.2	64.8	14:30-14:35	60.2	60.9	62.5	18:30-18:35	59.6	60.6	63.0	22:30-22:35	59.3	60.6	61.9
02:35-02:40	51.4	52.8	54.8	06:35-06:40	54.9	56.0	57.6	10:35-10:40	61.4	62.4	63.7	14:35-14:40	60.5	61.7	63.3	18:35-18:40	59.4	60.4	62.7	22:35-22:40	56.3	57.4	59.5
02:40-02:45	52.7	54.2	56.1	06:40-06:45	55.0	55.9	57.7	10:40-10:45	60.5	61.5	62.8	14:40-14:45	58.8	59.9	61.8	18:40-18:45	59.1	60.1	62.3	22:40-22:45	56.3	57.2	59.1
02:45-02:50	51.0	52.3	54.1	06:45-06:50	57.0	58.7	60.6	10:45-10:50	61.8	62.8	63.5	14:45-14:50	60.3	61.0	63.2	18:45-18:50	59.1	60.3	62.2	22:45-22:50	56.4	57.7	59.6
02:50-02:55	51.3	52.8	54.8	06:50-06:55	57.5	59.0	61.0	10:50-10:55	62.3	65.6	66.1	14:50-14:55	62.1	62.1	64.7	18:50-18:55	58.4	59.4	61.5	22:50-22:55	56.2	57.4	59.3
02:55-03:00	50.7	52.1	54.3	06:55-07:00	57.4	58.2	60.2	10:55-11:00	63.5	64.7	65.7	14:55-15:00	61.4	61.8	63.6	18:55-19:00	59.3	60.1	62.0	22:55-23:00	56.2	57.9	62.0
03:00-03:05	53.0	54.1	56.0	07:00-07:05	56.6	57.3	59.4	11:00-11:05	63.6	65.2	66.2	15:00-15:05	62.3	62.8	63.9	19:00-19:05	61.1	61.9	63.7	23:00-23:05	59.5	60.4	62.5
03:05-03:10	52.2	53.1	55.3	07:05-07:10	56.6	57.1	58.9	11:05-11:10	63.6	64.0	64.0	15:05-15:10	64.5	64.8	65.8	19:05-19:10	59.2	59.7	61.8	23:05-23:10	65.8	67.1	68.6
03:10-03:15	52.7	53.9	55.7	07:10-07:15	55.8	56.9	58.6	11:10-11:15	61.7	63.5	65.3	15:10-15:15	64.8	66.2	67.2	19:10-19:15	58.1	58.8	60.6	23:10-23:15	60.7	63.1	64.8
03:15-03:20	52.2	54.3	56.2	07:15-07:20	56.7	57.9	59.7	11:15-07:20	62.1	62.5	63.6	15:15-15:20	62.9	64.6	65.3	19:15-19:20	57.5	58.5	60.3	23:15-23:20	55.3	57.2	59.7
03:20-02:25	52.4	53.5	55.3	07:20-07:25	57.7	58.8	60.6	11:20-11:25	63.7	63.3	64.1	15:20-15:25	63.1	63.8	65.1	19:20-19:25	57.8	58.0	60.8	23:20-23:25	55.5	57.2	59.1
03:25-02:30	51.6	52.6																					

Measurement Date : 30 September 2018 (Sunday)
Measurement Location: BG2 - Quarry Bay Park Phase II

Measurement Height (mAG)			Measurement Height (mAG)			Measurement Height (mAG)			Measurement Height (mAG)			Measurement Height (mAG)			Measurement Height (mAG)				
Period	2m	10m	20m	Period	2m	10m	20m	Period	2m	10m	20m	Period	2m	10m	20m	Period	2m	10m	20m
	L _{Aeq} [dB]	L _{Aeq} [dB]	L _{Aeq} [dB]		L _{Aeq} [dB]	L _{Aeq} [dB]	L _{Aeq} [dB]		L _{Aeq} [dB]	L _{Aeq} [dB]	L _{Aeq} [dB]		L _{Aeq} [dB]	L _{Aeq} [dB]	L _{Aeq} [dB]		L _{Aeq} [dB]	L _{Aeq} [dB]	L _{Aeq} [dB]
00:00 - 00:05	55.1	56.9	63.3	04:00 - 04:05	53.0	54.1	55.9	08:00 - 08:05	62.9	63.7	63.9	12:00 - 12:05	58.9	54.3	62.8	16:00 - 16:05	58.2	59.0	60.9
00:05 - 00:10	53.9	55.7	58.5	04:05 - 04:10	53.3	54.3	56.0	08:05 - 08:10	57.4	58.6	59.8	12:05 - 12:10	59.3	60.4	61.8	16:05 - 16:10	58.2	59.0	60.8
00:10 - 00:15	55.2	57.0	62.0	04:10 - 04:15	52.5	53.5	55.2	08:10 - 08:15	57.6	58.5	60.0	12:10 - 12:15	62.9	63.4	64.1	16:10 - 16:15	59.4	59.8	61.6
00:15 - 00:20	58.7	60.9	62.9	04:15 - 04:20	52.6	53.5	55.4	08:15 - 08:20	58.5	59.3	61.2	12:15 - 12:20	61.3	62.7	63.5	16:15 - 16:20	60.5	60.8	61.7
00:20 - 00:25	56.2	57.6	59.4	04:20 - 04:25	53.4	54.5	56.5	08:20 - 08:25	59.2	60.0	61.6	12:20 - 12:25	62.2	63.0	64.2	16:20 - 16:25	62.0	61.4	62.6
00:25 - 00:30	54.2	56.1	60.1	04:25 - 04:30	51.7	52.5	54.1	08:25 - 08:30	57.4	58.4	60.2	12:25 - 12:30	61.3	61.8	63.3	16:25 - 16:30	63.8	62.7	63.1
01:30 - 01:35	55.2	56.9	58.6	04:30 - 04:35	52.3	53.3	54.9	08:30 - 08:35	57.9	58.8	60.4	12:30 - 12:35	59.2	61.8	61.0	16:30 - 16:35	63.6	62.7	64.1
02:35 - 00:40	52.8	54.5	56.2	04:35 - 04:40	53.3	55.0	56.6	08:35 - 08:40	59.8	60.2	61.4	12:35 - 11:40	57.7	59.0	61.1	16:35 - 16:40	62.8	61.8	63.1
00:40 - 00:45	54.8	55.9	58.4	04:40 - 04:45	53.2	54.2	56.3	08:40 - 08:45	61.7	61.7	62.5	12:40 - 10:45	58.1	59.4	61.1	16:40 - 16:45	59.1	59.9	61.6
00:45 - 00:50	54.6	56.4	58.3	04:45 - 04:50	52.0	53.2	54.8	08:45 - 08:50	61.1	61.2	62.3	12:45 - 10:50	58.0	59.3	61.1	16:45 - 16:50	60.4	60.6	62.1
00:50 - 00:55	53.4	55.0	56.8	04:50 - 04:55	51.8	52.8	54.6	08:50 - 08:55	59.8	60.1	61.5	12:50 - 12:55	58.5	59.6	61.2	16:50 - 16:55	60.2	60.2	62.1
00:55 - 01:00	54.5	56.1	58.3	04:55 - 05:00	53.2	54.2	55.7	08:55 - 09:00	60.6	60.6	61.8	12:55 - 13:00	58.3	59.6	61.5	16:55 - 17:00	60.0	60.5	62.6
01:00 - 01:05	51.9	53.5	55.9	05:00 - 05:05	51.7	52.5	54.0	09:00 - 09:05	62.5	62.9	63.7	13:00 - 13:05	58.5	59.4	61.1	17:00 - 17:05	61.1	62.0	63.9
01:05 - 01:10	56.7	58.2	59.7	05:05 - 05:10	52.5	53.4	55.2	09:05 - 09:10	61.2	62.1	62.8	13:05 - 13:10	57.9	59.0	62.1	17:05 - 17:10	60.7	61.2	62.7
01:10 - 01:15	52.0	53.8	55.9	05:10 - 05:15	52.4	53.1	54.8	09:10 - 09:15	62.0	63.1	63.9	13:10 - 13:15	58.8	59.7	60.9	17:10 - 17:15	62.3	62.2	63.2
01:15 - 01:20	52.4	54.0	58.1	05:15 - 05:20	53.7	54.5	56.5	09:15 - 09:20	62.0	63.2	63.4	13:15 - 12:20	58.5	59.4	61.4	17:15 - 17:20	63.7	63.8	64.1
01:20 - 01:25	53.6	55.2	56.9	05:20 - 05:25	56.3	58.4	60.4	09:20 - 09:25	62.2	63.2	63.6	13:20 - 13:25	58.3	59.2	61.2	17:20 - 17:25	61.9	62.2	63.6
01:25 - 01:30	52.9	54.7	56.7	05:25 - 05:30	54.3	55.6	57.7	09:25 - 09:30	60.6	61.6	62.4	13:25 - 13:30	58.0	59.0	60.6	17:25 - 17:30	60.9	61.5	63.4
01:30 - 01:35	51.7	53.3	55.4	05:30 - 05:35	52.4	53.2	55.1	09:30 - 09:35	61.2	62.2	62.6	13:30 - 13:35	60.7	61.5	63.0	17:30 - 17:35	62.3	63.0	64.4
01:35 - 01:40	51.5	53.3	55.8	05:35 - 05:40	54.7	56.3	57.9	09:35 - 09:40	58.2	59.1	60.9	13:35 - 12:40	58.2	58.9	60.5	17:35 - 17:40	61.0	61.5	62.6
01:40 - 01:45	51.8	53.6	55.7	05:40 - 05:45	52.7	53.5	55.3	09:40 - 09:45	59.2	60.7	62.0	13:40 - 13:45	58.4	59.0	60.6	17:40 - 17:45	62.7	63.4	64.6
01:45 - 01:50	52.4	54.1	56.0	05:45 - 05:50	52.3	53.2	54.4	09:45 - 09:50	59.7	60.7	62.4	13:45 - 14:50	59.4	59.7	61.5	17:45 - 17:50	62.9	63.6	65.1
01:50 - 01:55	51.8	53.6	55.6	05:50 - 05:55	53.7	54.8	56.7	09:50 - 09:55	58.8	60.3	61.4	13:50 - 14:55	61.7	61.5	63.0	17:50 - 17:55	60.6	61.4	63.3
01:55 - 02:00	51.1	52.9	54.8	05:55 - 06:00	54.1	54.8	56.2	09:55 - 10:00	59.8	62.1	62.1	13:55 - 14:00	60.0	60.6	62.2	17:55 - 18:00	60.3	61.1	62.9
02:00 - 02:05	52.6	54.1	55.8	06:00 - 06:05	53.6	54.5	56.4	10:00 - 10:05	59.6	61.0	61.7	14:00 - 14:05	59.8	60.1	61.5	18:00 - 18:05	61.1	61.6	63.1
02:05 - 02:10	51.2	52.9	54.8	06:05 - 06:10	54.1	54.7	56.7	10:05 - 10:10	59.5	60.6	62.1	14:05 - 14:10	59.6	60.2	62.8	18:05 - 18:10	60.6	61.0	62.7
02:10 - 02:15	51.4	53.1	55.7	06:10 - 06:15	56.5	57.8	59.3	10:10 - 10:15	59.3	60.2	61.9	14:10 - 14:15	58.9	59.8	61.7	18:10 - 18:15	59.4	60.3	62.3
02:15 - 02:20	53.2	55.0	56.6	06:15 - 06:20	56.5	57.2	58.7	10:15 - 10:20	58.3	59.6	60.9	14:15 - 14:20	58.6	61.7	63.8	18:15 - 18:20	61.0	61.7	63.8
02:20 - 02:25	51.6	53.5	55.2	06:20 - 06:25	56.2	57.9	59.6	10:20 - 10:25	59.1	61.6	61.5	14:20 - 14:25	58.6	60.1	61.8	18:20 - 18:25	60.8	61.1	62.9
02:25 - 02:30	55.5	57.7	59.3	06:25 - 06:30	55.2	56.4	58.0	10:25 - 10:30	59.7	61.4	62.5	14:25 - 14:30	58.6	59.5	62.3	18:25 - 18:30	59.4	60.5	62.7
02:30 - 02:35	52.1	53.5	55.3	06:30 - 06:35	55.2	55.7	57.4	10:30 - 10:35	58.2	59.3	60.8	14:30 - 14:35	58.5	59.4	61.7	18:30 - 18:35	60.0	61.1	63.1
02:35 - 02:40	53.6	55.2	57.0	06:35 - 06:40	55.1	55.8	57.4	10:35 - 10:40	57.7	58.6	60.4	14:35 - 14:40	59.1	60.0	62.1	18:35 - 18:40	59.5	60.6	62.7
02:40 - 02:45	52.7	53.9	55.9	06:40 - 06:45	55.3	56.5	58.1	10:40 - 10:45	57.6	58.6	60.5	14:40 - 14:45	58.7	59.5	62.3	18:40 - 18:45	59.0	59.9	62.3
02:45 - 02:50	52.1	53.6	55.4	06:45 - 06:50	56.3	57.4	59.3	10:45 - 10:50	58.5	59.6	61.3	14:45 - 14:50	60.1	60.7	62.5	18:45 - 18:50	57.6	58.7	60.7
02:50 - 02:55	52.2	53.5	55.4	06:50 - 06:55	56.3	57.7	59.4	10:50 - 10:55	59.4	60.3	62.2	14:50 - 14:55	58.8	60.0	61.7	18:50 - 18:55	58.1	59.0	61.2
02:55 - 03:00	52.7	54.1	56.0	06:55 - 07:00	56.1	57.0	59.0	10:55 - 11:00	59.1	60.3	62.0	14:55 - 15:00	62.8	63.4	64.3	18:55 - 19:00	60.4	60.4	62.8
03:00 - 03:05	51.7	53.0	54.7	07:00 - 07:05	55.9	57.3	59.1	11:00 - 11:05	57.8	59.2	61.0	15:00 - 15:05	63.0	63.7	64.4	19:00 - 19:05	59.7	59.9	62.2
03:05 - 03:10	53.1	54.4	56.0	07:05 - 07:10	56.8	57.9	59.4	11:05 - 11:10	57.7	59.1	60.7	15:05 - 15:10	57.7	58.9	61.2	19:05 - 19:10	59.3	59.7	61.5
03:10 - 03:15	53.1	54.4	55.9	07:10 - 07:15	57.3	58.9	60.5	11:10 - 11:15	58.4	59.5	61.1	15:10 - 15:15	61.3	62.3	63.0	19:10 - 19:15	57.5	58.9	60.7
03:15 - 03:20	53.8	55.0	56.9	07:15 - 07:20	56.9	58.6	59.6	11:15 - 11:20	58.4	59.7	61.7	15:15 - 15:20	58.6	59.7	61.4	19:15 - 19:20	57.4	58.4	60.1
03:20 - 03:25	54.1	55.6	57.3	07:20 - 07:25	57.9	59.0	60.0	11:20 - 11:25	61.0	61.9	63.5	15:20 - 15:25	58.3	59.2	61.2	19:20 - 19:25	57.6	58.8	60.4
03:25 - 03:30	52.5	53.2	54.9	07:25 - 07:30	56.5	57.7	59.0	11:25 - 11:30	60.8	61.4	62.4	15:25 - 15:30	61.7	62.3	63.3	19:25 - 19:30	57.2	58.7	60.6
03:30 - 03:35	52.7	53.8	55.5	07:30 - 07:35	56.1	57.3	59.1	11:30 - 11:35	59.7	60.8	62.3	15:30 - 15:35	58.9	61.3	61.0	19:30 - 19:35	56.6	58.1	60.0
03:35 - 03:40	54.4	55.8	57.8	07:35 - 07:40	58.7	59.3	60.3	11:35 - 11:40	58.6	59.8	61.4	15:35 - 15:40	58.8	59.9	61.8	19:35 - 19:40	57.3	58.5	60.2
03:40 - 03:45	52.9	54.0	55.8	07:40 - 07:45	57.9	58.9	60.0	11:40 - 11:45	61.1	62.3	63.3	15:40 - 15:45	59.1	59.7	61.4	19:40 - 19:45	58.0	58.4	60.1
03:45 - 03:50	52.9	53.9	55.8	07:45 - 07:50	57.6	58.8	60.4	11:45 - 11:50	59.7	60.8	62.2	15:45 - 15:55	58.5	59.3	61.0	19:45 - 19:55	57.6	59.2	61.2
03:50 - 03:55	52.9	54.1	55.5	07:50 - 07:55	59.4	60.3	62.7	11:50 - 11:55	59.6	60.9	62.2	15:50 - 15:55	57.7	58.8	60.5	19:50 - 19:55	59.4	60.3	61.4
03:55 - 04:00	54.2	55.7	57.5	07:55 - 08:00	57.7	58.5	60.9	11:55 - 12:00	58.9	59.8	61.6	15:55 - 16:00	58.5	59.3	61.4	19:55 - 20:00	58.0	59.4	61.0
20:00 - 20:05	57.1	58.6	60.1	20:00 - 20:05	57.1	58.6	60.1	20:00 - 20:05	57.1	58.6	60.1	20:00 - 20:05	57.1	58.6	60.1	20:00 - 20:05	57.1	58.6	60.1
20:05 - 20:10	56.9	58.6	60.4	20:05 - 20:10	56.9	58.6	60.4	20:05 - 20:10	56.9	58.6	60.4	20:05 - 20:10	56.9	58.6	60.4	20:05 - 20:10	56.9	58.6	60.4
20:10 - 20:15	56.7	58.2	60.3	20:10 - 20:15	56.7	58.2	60.3	20:10 - 20:15	56.7	58.2	60.3	20:10 - 20:15	56.7	58.2	60.3	20:10 - 20:15	56.7	58.2	60.3
20:15 - 20:20	56.8	58.2	60.2	20:15 - 20:20	56.8	58.2	60.2	20:15 - 20:20	56.8	58.2	60.2	20:15 - 20:20	56.8	58.2	60.2	20:15 - 20:20	56.8	58.2	60.2
20:20 - 20:25	57.0	58.4	59.6																

Appendix B Aerial Photos in Years 1980, 1985, 1990, 2000, 2010, 2017, and 2024

Figure B-1 Aerial Photo in Year 1980



In 1980, land reclamation was in progress and the Application Site was not yet formed.

Figure B-2 Aerial Photo in Year 1985



The Application Site was formed by reclamation between 1980 and 1985. Western part of the Application Site was observed vacant. The remaining part of the Application Site was used as an open carpark. No activities likely to result in land contamination were observed.

Figure B-3 Aerial Photo in Year 1990



In 1990, the majority of the Application Site was vacant. A small portion of the Application Site was used as an open carpark. No activities likely to result in land contamination were observed.

Figure B-4 Aerial Photo in Year 2000



In 2000, the majority of the Application Site was used as a barging point operation and the remaining part was vacant. No activities likely to result in land contamination were observed.

Figure B-5 Aerial Photo in Year 2010



In 2010, majority of the Application Site was vacant but part of it was used as an open carpark. No activities likely to result in land contamination were observed.

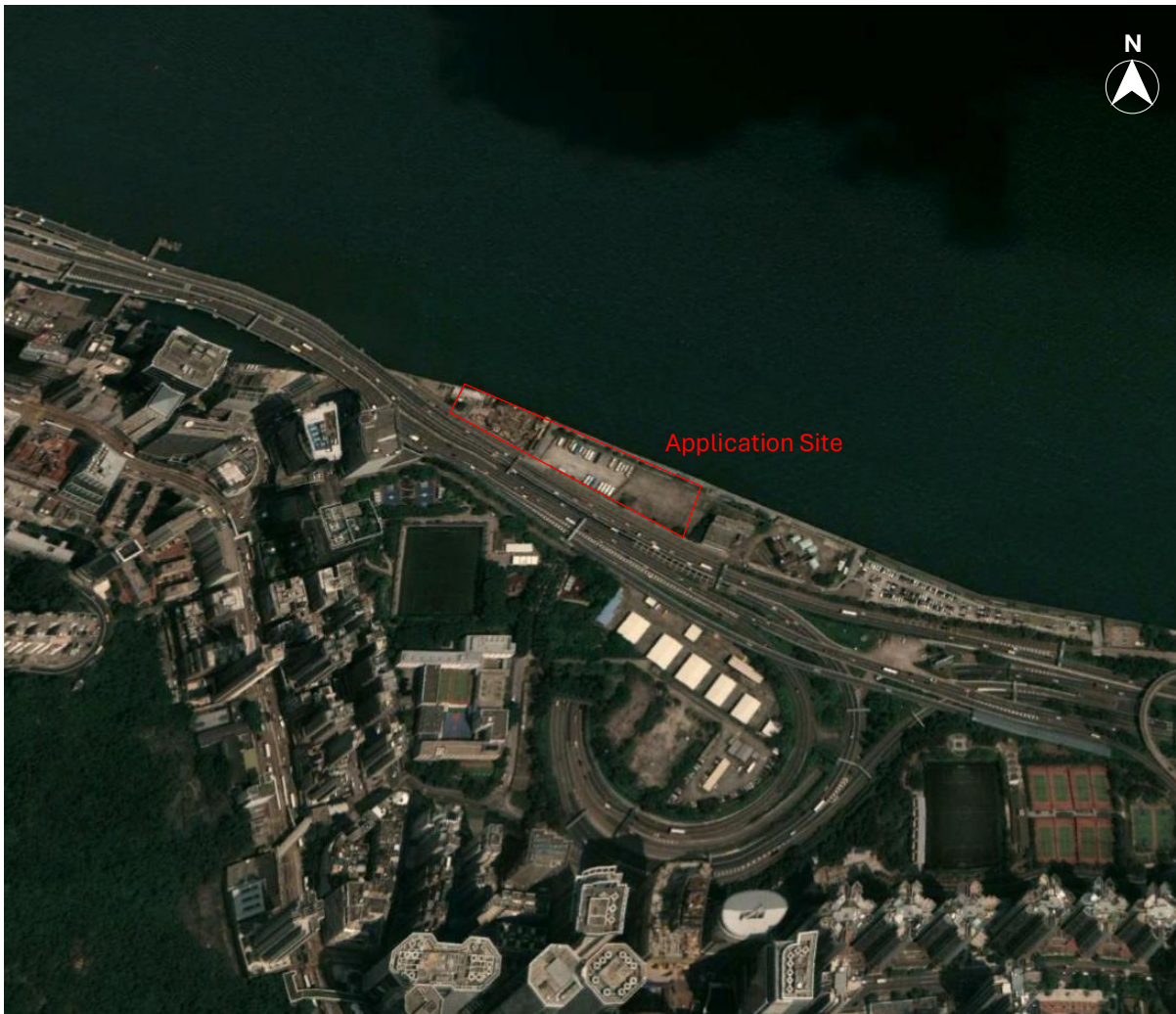
Figure B-6 Aerial Photo in January 2017



Source: Google

In January 2017, majority of the Application Site was used as an open carpark with the western portion remained vacant. No activities likely to result in land contamination were observed.

Figure B-7 Aerial Photo in September 2017



Source: Google

In September 2017, piling works was commenced at the western portion of the Application Site. The southern portion was used as an open carpark. No activities likely to result in land contamination were observed.

Figure B-8 Aerial Photo in March 2024



Source: Land's Department Aerial Photo E221443C

In March 2024, the western portion of the site became vacant again, whilst the open car park remains in operation in the eastern and mid-portion of the Application. No activities likely to result in land contamination were observed.

Appendix C Site Walkover Checklist and Survey Photos in Sep 2024

Annex C1

Site Walkover Checklist

GENERAL SITE DETAILS

SITE OWNER/CLIENT MBK Partners (MBK)

PROPERTY ADDRESS Hoi Yu Street, Quarry Bay

PERSON CONDUCTING THE QUESTIONNAIRE

NAME Tomy KONG / Michael LING

POSITION Environmental Consultant

AUTHORIZED OWNER/CLIENT REPRESENTATIVE (IF APPLICABLE)

NAME Rock Li

POSITION Associate

TELEPHONE 22960058

SITE ACTIVITIES

Briefly describe activities carried out on site, including types of products/chemicals/materials handled.
Obtain a flow schematic if possible.

Number of employees: Full-time: ✓

Part-time: ✓

Temporary/Seasonal: ✓

Maximum no. of people on site at any time: ✓

Typical hours of operation: NA

Number of shifts: NA

Days per week: NA

Weeks per year: NA

Scheduled plant shut-down: NA

Detail the main sources of energy at the site:

Gas	Yes/ <u>No</u>
Electricity	Yes/ <u>No</u>
Coal	Yes/ <u>No</u>
Oil	Yes/ <u>No</u>
Other	Yes/ <u>No</u>

SITE DESCRIPTION

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area:

8532

What area of the site is covered by buildings (%):

NA

Please list all current and previous owners/occupiers if possible.

Is a site plan available? If yes, please attach. Yes/No

Are there any other parties on site as tenants or sub-tenants? Yes/No

If yes, identify those parties:

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Water front, facing Victoria Harbor

South: Commercial Building, football field, School (>500m)

Surrounded by mixed residential + Commercial high rise building

East: Eastern Harbor Crossing Quarry Bay Ventilation Building (QVB)

West: Commercial Building, nearest hotel is 400m away from the site. Surrounded by high rise building

Annex C1

Site Walkover Checklist

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.).

The site is primarily flat, with overgrown vegetation including tall grass and shrubs.

State the size and location of the nearest residential communities.

Harbour Plaza North Point, located 350m from the site, (719 rooms), Lai King Court, (450m)

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or sites of special scientific interest?

There is no sensitive habitats nearby. The site is positioned in Quarry Bay, which is surrounded by mix of commercial and residential development.

Questionnaire with Existing/Previous Site Owner or Occupier

	Yes/No	Notes
1. What are the main activities/operations at the above address?	✓	Underdeveloped one side and Car Park other
2. How long have you been occupying the site?	N	
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	N	
4. Prior to your occupancy, who occupied the site?	N	Underdeveloped / Car Park
5. What were the main activities/operations during their occupancy?	N	Car Park
6. Have there been any major changes in operations carried out at the site in the last 10 years?	N	No change
7. Have any polluting activities been carried out in the vicinity of the site in the past?	N	
8. To the best of your knowledge, has the site ever been used as a petrol filling station/car service garage?	✓	
9. Are there any boreholes/wells or natural springs either on the site or in the surrounding area?	N	
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	✓	
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	✓	
• Where do you store these chemicals?	✓	
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	N	
13. Has the facility produced a separate hazardous substance inventory?	N	
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details.)	✓	

	Yes/No	Notes
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	N	
16. Do you have any underground storage tanks? (If yes, please provide details.)	N	
• How many underground storage tanks do you have on site?	/	
• What are the tanks constructed of?	/	
• What are the contents of these tanks?	/	
• Are the pipelines above or below ground?	/	
• If the pipelines are below ground, has any leak and integrity testing been performed?	/	
• Have there been any spills associated with these tanks?	/	
17. Are there any disused underground storage tanks?	N	
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	N	
19. How are the wastes disposed of?	N	
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	N	
21. Have any spills occurred on site? (If yes, please provide details.)	N	
• When did the spill occur?	/	
• What were the substances spilled?	/	
• What was the quantity of material spilled?	/	
• Did you notify the relevant departments of the spill?	/	
• What were the actions taken to clean up the spill?	/	
• What were the areas affected?	/	
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work/underground tanks (If yes, please provide details.)	N	
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	N	
24. Are there any known contaminations on site? (If yes, please provide details.)	N	
25. Has the site ever been remediated? (If yes, please provide details.)	N	

Annex C1

Site Walkover Checklist

Observations

	Yes/No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	N	
2. What are the conditions of the bund walls and floors?	NA	
3. Are any surface water drains located near to drum storage and unloading areas?	N	
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	N	
5. Is there a storage site for the wastes?	N	
6. Is there an on-site landfill?	N	
7. Were any stressed vegetation noted on site during the site reconnaissance? (If yes, please indicate location and approximate size.)	N	
8. Were any stained surfaces noted on-site during the site reconnaissance? (If yes, please provide details.)	N	
9. Are there any potential off-site sources of contamination?	N	
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	N	
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	N	
12. Any noticeable odours during site walkover?	N	
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ash, oily tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	N	

Figure C-1 Site Survey Photos in Sep 2024



The north portion of the Application Site has not been developed and is currently not in use. No activities likely to result in land contamination were observed.



The middle portion of the Application Site is currently an open carpark. No activities likely to result in land contamination were observed.



The south-eastern portion of the Application Site is currently vacant land. No activities likely to result in land contamination were observed.

Appendix D Information from Governmental Department

消防處
香港九龍尖沙咀東部康莊道1號
消防處總部大廈



FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 **OUR REF.** : (243) in FSD GR 6-5/4 R Pt. 54
來函檔號 **YOUR REF.** : 7076998/L31193/AG/ML/TK/rw
電子郵件 **E-mail** : hkfsdenq@hkfsd.gov.hk
圖文傳真 **FAX NO.** : 2988 1196
電話 **TEL NO.** : 2733 7896

10 September 2024

SMEC Asia Limited
27/F Ford Glory Plaza,
37-39 Wing Hong Street,
Cheung Sha Wan, Kowloon, Hong Kong.
(Attn: Mr. Alex GBAGUIDI, Director)

Dear Mr. GBAGUIDI,

**Planning Application for
the Proposed Waterfront Development Project,
- Hoi Yu Street, Quarry Bay
Request for Information of Dangerous Goods & Incident Records**

I refer to your letter of 15.8.2024 regarding the captioned request and reply below in response to your questions:-

Please be advised that neither records of dangerous goods license, and incidents of spillage / leakage of dangerous goods were found in connection with the given conditions of your request at the subject location.

If you have further questions, please feel free to contact the undersigned.

Yours sincerely,

(AU Ting-hin)
for Director of Fire Service

Ref. number and date should be quoted in reference to this letter
凡提及本信時請引述編號及日期



SMEC Hong Kong

41/F, AIA Tower, 183 Electric Road, North Point, Hong Kong

Phone: 3995 8100

Email: hongkong@smec.com

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