

Prepared by

Ramboll Hong Kong Limited

**S16 PLANNING APPLICATION FOR A PROPOSED
RESIDENTIAL BUILDING AT 33 SHEUNG HEUNG ROAD,
KOWLOON**

ENVIRONMENTAL ASSESSMENT REPORT

Date **22 September 2023**


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1. INTRODUCTION

1.1 Background and Objectives

- 1.1.1 The Subject Site at 33 Sheung Heung Road is zoned Residential (E) ("R(E)") under Ma Tau Kok Outline Zoning Plan (OZP) No. S/K10/25. The Subject Site is currently occupied by Ting Sun Plaza of 10 storeys for industrial/commercial use.
- 1.1.2 The Subject Site is proposed to be redeveloped as residential development. A Section 16 planning application is submitted for this proposal. According to the departmental comments, environmental assessment including potential air quality, noise and sewerage to ascertain the environmental acceptability of the proposed development is considered necessary.
- 1.1.3 Ramboll Hong Kong Limited is commissioned by the Applicant, Red Carpet Limited, to prepare an environmental assessment as one of the supporting documents for the application.
- 1.1.4 This environmental assessment includes assessments of air quality impact due to traffic emission and chimney stack emission, noise impact due to road traffic & fixed/industrial noise source, and sewerage impact due to the redevelopment proposal.

1.2 Environs of the Subject Site

- 1.2.1 The Subject Site of approximately 390sq.m is located in urbanised area and is bounded by Sheung Heung Road and Ha Heung Road respectively to the south and west. To the east and north are existing Luen Fat Manson and Cheung Ning Street Refuse Collection Point.
- 1.2.2 East Kowloon Corridor to aligned to the further west and partially shielded by existing buildings. To Kwa Wan Recreation Ground is situated to the further north. Seashore is of about 400m away to the east. The surrounding areas are mainly zoned Residential (A) ("R(A)") and "R(E)", except area to the north which is zoned Open Space ("O").
- 1.2.3 Areas on the southern side of Sheung Heung Road, south-eastern side of To Kwa Wan Road and western side of Kowloon City Road/East Kowloon Corridor are dominated by residential development. Existing industrial/commercial buildings (also zoned "R(E)") are concentrated in area bounded by Sheung Heung Road, To Kwa Wan Road and Kowloon City Road/East Kowloon Corridor which also includes the Subject Site.

1.3 Proposed Development

- 1.3.1 The existing Ting Sun Plaza at the Subject Site is of 10 storeys with 100% building footprint.
- 1.3.2 The Subject Site is subject to a building height restriction of 120mPD. The proposed development consists of 1 residential tower sitting on a 3-storey podium building (G/F to 2/F) comprising lobby and retail areas. While 3/F to 5/F are designed to be sky garden, clubhouse, and E&M areas respectively. The podium housing retail and clubhouse will be provided with central air conditioning system so that it will not rely on opened window for ventilation.
- 1.3.3 The residential tower consists of 20 storeys (6/F to 25/F) with floor-to-floor height of 3.5m. There are 4 flat units per floor on 6/F to 23/F and 2 flat units per floor on 24/F and 25/F, accounting for a total of 76 flat units. The residential floor plan is designed so that there is only one sensitive façade (with openable window/door of habitable room for ventilation purpose) and facing south fronting Sheung Heung Road.
- 1.3.4 The tentative completion (occupation) year of the proposed development is 2027.

1.4 Appraisal of Environmental Noise, Air Quality and Sewerage Impact

Noise Impact

- 1.4.1 There is no aboveground railway system in the vicinity of the Subject Site. The Subject Site is separated more than 300m from seashore so that marine traffic would unlikely be a concern of possible environmental noise.
- 1.4.2 The Subject Site is bounded by Sheung Heung Road and Ha Heung Road on 2 sides. In addition, there exists other major carriage with more traffic volume such as Kowloon City Road, To Kwa Wan Road and Eastern Kowloon Corridor. Typical of developments in urban area which is usually affected by road traffic, it is necessary to evaluate the potential road traffic noise impact. Chapter 2 includes an assessment of road traffic noise impact.
- 1.4.3 As discussed, there are industrial/commercial buildings concentrated in area bounded by Sheung Heung Road, To Kwa Wan Road and Kowloon City Road/East Kowloon Corridor. While these industrial/commercial developments fall within area zoned "R(E)" and are expected to be redeveloped in future, it is necessary to investigate whether there is any industrial/fixed noise impact during interim period on the proposed development. Chapter 3 includes an assessment of fixed/industrial noise impact.

Air Quality Impact

- 1.4.4 As discussed, there are industrial/commercial buildings nearby the Subject Site. Therefore, it is necessary to investigate if there are any industrial emission sources nearby and evaluate the potential air quality impact.
- 1.4.5 Similarly, there are carriageways in the surrounding which would result in vehicular emission.
- 1.4.6 The potential air quality impact needs to be evaluated and the assessment is presented in Chapter 4.

Sewerage Impact

- 1.4.7 Based on the redevelopment proposal, it may happen that wastewater discharge would increase. Therefore, the wastewater discharge needs to be evaluated and sewerage impact should be assessed in case of increased discharge. Chapter 5 contains a sewerage impact assessment.

Construction Phase Environmental Impact

- 1.4.8 Demolition and construction works will induce potential air quality impact. The works will also generate construction wastes. Individual environmental impacts during construction phase of the Application Site have been qualitatively discussed.

2. ROAD TRAFFIC NOISE IMPACT ASSESSMENT

2.1 Introduction

2.1.1 Potential noise impact arising from nearby existing and future road carriageways on the proposed residential development of the project at the Application Site has been assessed by using modelling in this assessment. Practicable environmental mitigation measures have been recommended, where necessary.

2.2 Assessment Criteria

2.2.1 Noise standards are recommended in the Hong Kong Planning Standards and Guidelines (HKPSG) for planning against noise impact from sources such as road traffic, railway, and aircraft etc.

2.2.2 The proposed development includes domestic dwellings at the proposed residential tower, as well as clubhouse and retail uses housed in podium building. The podium building will be provided with centralised air conditioning system so that the used inside would not rely on opened window for ventilation purpose. Glazing of at least 8mm thickness will be provided for insulation purpose.

2.2.3 Domestic dwellings will rely on opened window for ventilation. According to the guidelines, the maximum noise level from road traffic, measured in terms of $L_{10(1-hr)}$ is recommended to be 70 dB(A) at typical facades of new dwellings.

2.3 Assessment Methodology

2.3.1 The methodology involved the prediction of future noise impacts on Noise Sensitive Receivers (NSRs) arising from traffic flows on existing and future road carriageways situated in the vicinity of the subject site.

2.3.2 The U.K. Department of Transport's procedure "Calculation of Road Traffic Noise" was used to predict the hourly L_{10} noise levels generated from road traffic at selected representative NSRs. The predicted noise levels were then compared with the relevant HKPSG noise standards. Noise mitigation measures are recommended at situations when unacceptable noise impacts are predicted.

2.3.3 Based on the tentative completion date of the development (2027), traffic forecast for the year 2042 on the road carriageways situated in the vicinity of the proposed development was provided by LLA (the project traffic consultant) for prediction of the worst-case traffic noise impact within 15 years from the completion of the proposed development. The projected traffic flows and vehicle composition are shown in **Appendix 2-1**. Reply from Transport Department (TD) on the methodology adopted for the traffic forecast will be provided once available.

2.4 Noise Sensitive Receivers (NSRs)

2.4.1 NSRs were selected to represent the noise sensitive uses of the proposed development. Locations of the representative NSRs are shown in **Figure 2-1**. The assessment points have been taken to be situated at 1.2m above floor slabs and at 1m away from the external facade of windows of the residential unit.

2.5 Predicted Traffic Noise Levels under Base Scenario

2.5.1 Under the base scenario, building features such as the podium building has been incorporated. The predicted traffic noise level was shown in **Appendix 2-2**.

2.5.2 According to the result, there will be exceedance of the road traffic noise standard. The maximum predicted noise level is $L_{10(1-hr)}$ 74.4 dB(A).

2.6 Consideration of Noise Mitigation Measures

- 2.6.1 In consideration of the above, noise mitigation measures for domestic uses are duly considered below.

Use of Fixed Glazing with Maintenance Window

- Fixed glazing with maintenance window is designated at some locations for general maintenance (e.g. cleaning) and not for prescribed ventilation purpose. As discussed before, the sensitive façade (with opened window of habitable room for ventilation purpose) is facing Sheung Heung Road. Other glazing areas (facing Ha Heung Road) are fixed. Future residents will be informed of the fact that these maintenance windows are part of the noise mitigation measures, which are not for ventilation purpose and should be kept closed.

Baffle Type Acoustic Window and acoustic Balcony

- Provision of baffle type acoustic window and baffle type acoustic balcony at affected units at affected units by using Ex-North Point Estate Project. Since detailed design for proposed development is not available at this moment. The design of baffle type acoustic window/ balcony in the above-mentioned reference project has been adopted for affected units at typical floors. The location and extent of the proposed noise mitigation measures are indicated in **Appendix 2-3**.
- 2.6.2 Baffle type acoustic windows will be provided at the dwellings that are still affected after all other measures are applied. According to EPD's website regarding innovative noise mitigation design and measure (<http://www.epd.gov.hk/epd/Innovative/greeny/eng/index.html>), different balconies and special design window systems have been implemented in public rental housing, private residential and hostel developments. In King Tai Court project, baffle type acoustic window is adopted for the residential dwellings with road traffic noise sound attenuation of about 4 to 8 dB(A) (i.e. additional noise reduction indoors when compared with case using conventional window; or the relative insertion loss of baffle type acoustic window and conventional window).
- 2.6.3 In another residential development project such as Ex-North Point Estate redevelopment (reference project), baffle type acoustic window with sliding panel behind window and balcony openings has been employed. The sliding panel behind window opening(s) of bedroom is equipped with micro-perforated absorber (MPA) panel (1mm) which is sound absorptive. Therefore, sound propagating to indoor area will be mostly absorbed and the sound attenuation performance can be improved. In-situ test has been conducted after the building structure of the proposed development was completed. According to the test result, a road traffic noise sound attenuation of 8.8 dB(A) can be achieved for living room with baffle type acoustic balcony and 6.9 dB(A) for smaller bedroom with baffle type acoustic window with 1 window opening. Sound attenuation of the baffle type acoustic window/acoustic balcony adopted for the proposed development is estimated based on the reference project and presented in **Appendix 2-4**.
- 2.6.4 **Figure 2-2** shows the noise mitigation measures. A schedule of noise mitigation measures is tabulated in **Appendix 2-4**.

2.7 Predicted Traffic Noise Levels under Mitigated Scenario

- 2.7.1 The predicted traffic noise level after mitigation was shown in **Appendix 2-2**. Please note that the predicted mitigated noise level using baffle type acoustic window as shown in the table is not the actual noise level at the external façade after the application of acoustic windows. These predicted noise levels are the equivalent noise levels at 1m from the external façade after accounting the reduction in noise levels inside the flat offered by the proposed baffle type acoustic window.
- 2.7.2 According to the result, with all recommended noise mitigations in place, full compliance of road traffic noise standard (i.e., $L_{10(1-hr)}$ 70 dB(A)) can be achieved. No unacceptable road traffic noise impact is anticipated.

2.8 Conclusion

- 2.8.1 A road traffic noise impact assessment was conducted based on the worst-case scenario within 15 years from tentative completion year of the proposed development.
- 2.8.2 The result indicated that with a package of noise mitigation measures (i.e., Used of fixed glazing with maintenance window, Baffle type acoustic window) in place, there will be no unacceptable road traffic noise impact on the proposed development.

3. FIXED NOISE IMPACT ASSESSMENT

3.1 Introduction

- 3.1.1 The aim of this study is to assess potential noise impacts arising from nearby fixed noise source of the industrial buildings and activities on the proposed development.
- 3.1.2 Based on the assessment finding, practicable noise mitigation measures would be recommended, where necessary.

3.2 Assessment Criteria

- 3.2.1 In accordance with the Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (herein referred as TM), the area sensitive rating (ASR) depends on the type of area and the degree of impact that Influencing Factors (IFs) on the NSRs. The industrial area, major road with annual average daily traffic (AADT) over 30,000 vehicles per day or the area within the boundary of Hong Kong International Airport shall be considered to be an IF.
- 3.2.2 The Subject Site falls within urban area. In addition, Eastern Kowloon Corridor is aligned about 65m apart from the Subject Site. According to the Annual Traffic Census 2018, the AADT Eastern Kowloon Corridor is around 78,000 and well over 30,000 vehicles per day. Therefore, according to Table 1 of the TM, the Subject Site and the proposed development is considered within area type (iii) (i.e. Urban Area) and Directly Affected by IF so that ASR "C" is considered appropriate. In other words, the acceptable noise level (ANL) should be $L_{eq(30min)}$ 70dB(A) during 0700-2300 and $L_{eq(30min)}$ 60dB(A) during 2300-0700.

3.3 Fixed Noise Sources

Site Survey

- 3.3.1 Site surveys were conducted in Dec 2019 and Jan 2020 to identify the fixed noise sources and quantify the noise strength where practicable in the Subject Site and the neighbourhood.
- 3.3.2 As discussed before, existing industrial/commercial building including the Subject Site is on the northern side of Sheung Heung Road; and between Eastern Kowloon Corridor/Kowloon City Road and To Kwa Wan Road.
- 3.3.3 Based on survey, there is an electricity substation at junction of To Kwa Wan Road and Sheung Heung Road; 1 garage at Lun Fat Manson adjacent to the Subject Site, 5 garages and 1 metal cutting shop at another building at 27 Sheung Heung Road on the west side of the Subject Site (N.B. there is outdoor metal cutting work conducted based on observation), 1 garage at On Lok Factory Building facing Ha Heung Road, 7 garages & 1 recycling services shop along Cheung Ling Street. They are considered potential fixed noise sources.
- 3.3.4 The electricity substation is more than 80m apart and well shielded by Cheong Wah Factory Building at Sheung Heung Road without any direct line of sight with the proposed development at the subject site.
- 3.3.5 All identified garages along Sheung Heung Road are not facing the noise sensitive façade of the residential tower of the proposed development (i.e. all facing south). There is no car repair operation outside the garage (e.g. along street) based on observation.
- 3.3.6 However, the metal cutting shop with outdoor operation and another garage at Ha Heung Road would have direct line of sight with the subject site.

- 3.3.7 The garages and recycling services shop along Cheung Ling Street have no direct line of sight with the proposed development at the subject site.
- 3.3.8 As confirmed by the operators, the operating hours of all these potential fixed noise sources fall within day and evening time only (except for electricity substation which is an unmanned facility).
- 3.3.9 The refuse collection point at Cheung Ning Street is behind the proposed development and will operate during both daytime and night time as advised by the operator. As observed onsite, noise is generated from loading/unloading operation with refuse truck.

Noise Measurement

- 3.3.10 Among the garages, operation such as tyre replacement, cleaning can be observed. Noise measurements were carried out by using a calibrated Bruel & Kjaer (B&K) Precision Integration Sound Level Meter Type 2250L, which complies with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). The weather condition was fine with calm wind during measurements, which satisfied the required criteria. The equipment was properly calibrated immediately prior to and following each measurement by a B&K Sound Level Calibrator Type 4321.
- 3.3.11 Sound Power Levels (SWLs) of the noise activities are determined by direct measurement near to the source location and projected based on the measurement distance. Measurement locations and noise levels with respect to the fixed noise sources are shown in **Table 3-1** and **Appendix 3-1**.
- 3.3.12 **Table 3-1** below lists out the identified fixed noise sources and observation based on the findings of recent site surveys. Photo records of site investigation are shown in Appendix 4.3.
- 3.3.13 **Figure 3-1** illustrate the locations of the identified fixed noise sources surrounding the Subject Site.

Table 3-1 Noise Level Measured for Identified Fixed Noise Sources

Fixed Noise Source ID	Company	Site Measurement Data (dB(A)), Measurement Distance (m) and the Equivalent SWL (dB(A))	Description
G1	SUN HIP LEE LIMITED 新協利玻璃隔熱膜 ((car accessories)	SPL: 68.4 dB(A) at 18m SWL: 101.5 dB(A)	As advised by the operators, their working hours is from 1000 to 1930, which has also been confirmed during the site visit in Dec 2022. Major noisy industrial activities are the application of protective film with hand tools. No tonal characteristic activities as well as impulsiveness characteristic activities are observed during the site survey.
G2	HEMAN MOTORS LIMITED 浩駿汽車有限公司(car repair)	SPL: 68.4 dB(A) at 5m SWL: 90.4 dB(A)	The car repair workshop is totally enclosed. As advised by the operators, their working hours is from 0900 to 1900, which has also been confirmed during the site visit in Dec 2022. Major noisy industrial activities are the repairing of the private car with hand tools. No tonal characteristic activities as well as impulsiveness characteristic activities are observed during the site survey
G3	CHEUNG NING STREET REFUSE COLLECTION POINT	Day-time SPL: 69.3 dB(A) at 18m	As advised by the operators, their working hours is from 0630 to 2330, which has also been confirmed during

		SWL: 102.4 dB(A) Night-time SPL: 69.3dB(A) at 18m SWL: 102.4 dB(A)* *SWL- 102.4 dB(A) was adopted in the INIA calculation to represent the worst-case scenario	the site visit in Dec 2022 . Major noisy industrial activities involve refuse collection activities by specialized vehicles. No tonal characteristic activities as well as impulsiveness characteristic activities are observed during the site survey.
G4	SAM TAT ENGINEERING (DEVELOPMENT) LIMITED 三達防火玻璃工程有限公司 (glass door storage and packaging)	SPL: 64.3 dB(A) at 11m SWL: 93.1 dB(A)	As advised by the operators, their working hours is from 0830 to 1800, which has also been confirmed during the site visit in Dec 2022. The workshop is mainly for the storage of glass door. Major noisy activity is glass door packaging. No tonal characteristic activities as well as impulsiveness characteristic activities are observed.
G5	NEW UNIVERSAL ALUMINIUM CO. LIMITED 新環球鋁業有限公司 (aluminium products manufacturer)	SPL: 69.1 dB(A) at 15.6m SWL: 101 dB(A)	As advised by the operators, their working hours is from 0900 to 1800, which has also been confirmed during the site visit in Dec 2022. Major activity is aluminium cutting. No tonal characteristic activities as well as impulsiveness characteristic activities are observed.
G6	SIME DARBY MOTOR SERVICES LIMITED 森那美 汽車服務有限公司(car repair)	SPL: 63.5 dB(A) at 12m SWL: 93.1 dB(A)	The car repair workshop is totally enclosed. As advised by the operators, their working hours is from 0845 to 1815, which has also been confirmed during the site visit in Dec 2022. Major noisy industrial activities are the repairing of the private car with hand tools. No tonal characteristic activities as well as impulsiveness characteristic activities are observed during the site survey.
G7	TO KWA WAN SUBSTATION	Day-time SPL: 65.2 dB(A) at 3m SWL: 82.7 dB(A) Night-time SPL: 63.3 dB(A) at 3m SWL: 80.8 dB(A)	The substation is totally enclosed. Noise from the substation is insignificant during its operating hours (day-time and night-time). The environment is dominated by the traffic noise.
G8	KOON WAH MIRROR FACTORY LIMITED 冠華鏡廠有限公司(mirror storage and packaging)	SPL: 62.5 dB(A) at 13m SWL: 92.8 dB(A)	As advised by the operators, their working hours is from 0900 to 1800, which has also been confirmed during the site visit in Dec 2022. The workshop is mainly for the storage of mirrors. Major noisy activity is mirror packaging. No tonal characteristic activities as well as impulsiveness characteristic activities are observed.

3.4 Noise Sensitive Receivers

3.4.1 Representative NSRs of residential towers nearest to the identified noise sources have been selected for the assessment. **Figure 3-2** shows the locations of the representative NSRs. The assessment point is taken as 1m away from the ventilation opening (either window or balcony door) and at 1.2m above lowest residential floor slab.

3.5 Assessment Methodology

- 3.5.1 Standard acoustical principles were adopted for prediction of cumulative fixed noise impact.
- 3.5.2 Regarding the noise source, while the deduced SWL is based on some operations that would unlikely continue for 30 minutes or more, it is conservatively assumed that the generated SWL will be continuous for the purpose of assessment. In other words, no utilisation factor is considered.
- 3.5.3 All identified noise sources were assumed as point source for the purpose to determine attenuation due to distance separation. The sound power level of the identified noise sources are deduce: $SWL, dB(A) = SPL + 20 \times \log(\text{Measurement Distance}) + 8$.
- 3.5.4 Distance Attenuation Correction, $dB(A) = 20 \times \log(\text{Dist}) + 8$ where Dist = distance measured from noise source to NSR. The assessment accounts only the nearest horizontal separation distance between noise source and NSR to represent the worst case scenario.
- 3.5.5 In accordance with the "Technical Memorandum On Noise From Construction Work Other Than Percussive Piling", a -10dB shielding correction was adopted where the line of sight from the representative NSR would be completely blocked by buildings or barriers.
- 3.5.6 A façade correction of +3dB was assumed. Corrections for tonality, intermittency or impulsiveness shall be applied where necessary.

3.6 Noise Mitigation Measures

- 3.6.1 As mentioned before, the noise sensitive façade of the proposed development is facing Sheung Heung Road only. Yet, as the assessment point is located at 1m away from the ventilation opening, there is opportunity that some of the fixed noise sources (identified along Ha Heung Road) would have direct line of sight with it.
- 3.6.2 In order to minimise the noise impact, full height vertical fin of 1.5m is erected on the side of the opening facing Ha Heung Road so that the NSRs will be fully shielded. **Figure 3-1** shows the noise mitigation measures.

3.7 Assessment Result

- 3.7.1 A summary of predicted fixed noise levels at selected NSRs is tabulated in **Table 3-2**. Detailed calculations are shown in **Appendix 3-2**.
- 3.7.2 According to the assessment result, no exceedance of relevant noise standard ($L_{eq(30min)}$ 70dB(A)) is anticipated.

Table 3-2 Predicted Noise Level Measured for Identified Fixed Noise Sources

	N1 (Leq, dB(A))	N2 (Leq, dB(A))	N3 (Leq, dB(A))	N4 (Leq, dB(A))	N5 (Leq, dB(A))	N6 (Leq, dB(A))	N7 (Leq, dB(A))
Day and Evening Time (0700-2300)	60	60	60	61	62	62	60
Night Time (2300-0700)	54	55	55	56	56	56	56

	N8 (Leq, dB(A))	N9 (Leq, dB(A))	N10 (Leq, dB(A))	N11 (Leq, dB(A))	N12 (Leq, dB(A))	N13 (Leq, dB(A))	N14(Leq, dB(A))
Day and Evening Time (0700-2300)	61	52	52	52	52	52	52
Night Time (2300-0700)	57	47	47	47	47	47	47

3.8 Conclusion

- 3.8.1 The potential fixed noise impact due to the identified fixed noise sources have been quantitatively evaluated. According to the on-site noise measurement results, the sound power level was determined. According to the general acoustic principle and the TM, the fixed noise effect on the proposed development have been predicted and found to be in compliance with the standard under worst case situation.
- 3.8.2 The assessment confirms that there is no adverse fixed noise impact anticipated at the Subject Site.
- 3.8.3 In detailed design of the potentially noisy equipment onsite (e.g. AC system for podium building), the potential noise impact will be controlled in accordance with the standard under HKPSG (i.e. ANL-5dB(A) or prevailing background whichever is lower). There are practical noise mitigation measures such as selection of more quiet equipment, careful design of locations, enclosure or simply with the fixed noise source (e.g. pumps) housed indoors, use of silencer, acoustic louvre, etc. Adverse fixed noise impact from future operation of the proposed development is not anticipated.

4. AIR QUALITY IMPACT ASSESSMENT

4.1 Scope of Work

4.1.1 This assessment evaluates the potential air quality impact on the Proposed Development.

4.2 Air Pollution Sources in the Surrounding

4.2.1 According to the desktop review and onsite survey, it is noted that the subject site is bounded by Sheung Heung Road and Ha Heung Road on 2 sides. Other major carriageways further apart include East Kowloon Corridor and To Kwa Wan Road.

4.2.2 Table 3.1 in Chapter 9 of the Hong Kong Planning Standards and Guidelines (HKPSG) specifies the horizontal buffer separation distance with respect to, informing the provision of air quality mitigation measures to ensure future residents are not exposed to unacceptable levels of poor air. The assessment considers surrounding emissions from nearby i) chimneys, ii) portal emission and iii) traffic emissions from road networks, within 500m of the site boundary.

4.3 Recommendations in HKPSG

4.3.1 Table 3.1 in Chapter 9 of the Hong Kong Planning Standards and Guidelines (HKPSG) specifies the horizontal buffer separation distance with respect to different pollution sources. The recommendation is summarised in **Table 4-1** below. The subject site would be potentially affected by emission from road and industrial operation. The following horizontal separation should be satisfied in order to avoid any adverse impact.

Table 4-1 Horizontal Separation Requirement

Pollution Sources	Type of Road / Difference in Height between Industrial Chimney Exit and the Site	Minimum Horizontal Buffer Distance
Road and Highways	Trunk Road and Primary Distributor	20m
	District Distributor	10m
	Local Distributor	5m
Industrial Areas	<20m	200m
	20m – 30m	100m
	30m – 40m	50m
	>40m	10m

4.3.2 Appropriate mitigation measures will be recommended if exceedances of AQOs are identified.

4.4 Evaluation of Air Quality Impact due to Emission from Road and Highways

4.4.1 Annual Traffic Census (ATC) 2018 has included road carriageways with classification ranging from LD (local distributor) to RR (rural road), DD (district distributor), PD (Primary distributor), UT (urban trunk road), RT (Rural Trunk Road) and EX (Expressway).

4.4.2 According to the same (also see **Appendix 4-1**), To Kwa Wan Road is classified as DD; East Kowloon Corridor (Flyover) is classified as UT. The road carriageways covered in the ATC is however not exhaustive. Road carriageways of less importance such as local access road is generally not included. It is reasonable to assume that road carriageway not mentioned in the ATC is of road classification of local distributor or

lower. Therefore, Sheung Heung Road and Ha Heung Road, plus Cheung Ning Street are considered as LD.

- 4.4.3 Based on the above, the recommended minimum buffer distance with respect to individual road carriageways in the vicinity is determined. The horizontal separation distance measured from kerb side of adjacent road and major carriageways in the surrounding to the ventilation opening of the proposed development is tabulated below and compared to the recommended minimum buffer distance (also see **Figure 4-1**). According to the comparison, the horizontal buffer distance provided can satisfy the recommendations. No adverse air quality impact due to emission from road and highway is expected. Regarding the podium building that rely on centralised fresh air intake, the air intake point will be located at podium level and near to the northeast side so that adequate horizontal separation from road carriageways can be maintained as well.

Table 4-2 Horizontal Separation from Road Carriageways

Road Carriageway	Horizontal Buffer Distance*	Recommended Minimum Buffer Distance
Sheung Heung Road	9m	5m
Ha Heung Road	6m	5m
Cheung Ning Street	30m	5m
East Kowloon Corridor (Flyover)	60m	20m
To Kwa Wan Road	110m	10m

*Measured from road kerb side to the nearby ventilation opening of the proposed development

4.5 Evaluation of Air Quality Impact due to Emission from Industrial Operation

- 4.5.1 The surrounding area within 200m from the subject site is dominated by residential uses (mainly on southern side of Sheung Heung Road, western side of East Kowloon Corridor, eastern side of To Kwa Wan Road), commercial/industrial uses (mainly bounded by Sheung Heung Road, East Kowloon Corridor and To Kwa Wan Road) and open space (to the north of the subject site) (also see **Figure 4-2**).
- 4.5.2 According to the observation in site survey in December 2022, there is no chimney stack identified within 200m from the subject site. The existing commercial/industrial uses mainly cater for office, storage, etc. and with street shops as well.
- 4.5.3 While there is a single-storey refuse collection point to the north of the subject site, the building does not have any opening or exhaust facing the subject site. There is no odorous smell from refuse collection point observed at the subject site and at locations on the east and west side just outside the refuse collection point.
- 4.5.4 As such, it is considered that the buffer distance requirement (at most 200m) recommended under the HKPSG is well complied with. There is no odorous smell as well as other emission observed onsite and in the surrounding.
- 4.5.5 No adverse air quality impact due to industrial emission and any other emission from fixed sources is expected.

4.6 Construction Phase Air Quality Impact

- 4.6.1 Demolition and construction work will induce potential fugitive dust impact. The use of mechanical equipment powered by diesel will lead to emission as well. Individual environmental impacts during construction (including demolition) of the project have been qualitatively addressed in this section.

Fugitive Dust and Exhaust Emission

- 4.6.2 The major air quality impact of concern during the construction phase will be the potential fugitive dust emission and exhaust emission. The major dust emission sources during the construction phase of the Proposed Development are expected to arise from construction activities during site formation stage such as:
- Site formation resulting in exposed ground vulnerable to air erosion;
 - Earth moving, loading and unloading of excavated material;
 - Wind effect on material stockpiling; and
 - Vehicle movements over the construction site.
- 4.6.3 There will be potential impacts from the criteria pollutants (e.g. nitrogen oxides (NO_x), sulphur dioxide (SO₂), and carbon monoxide (CO)) from exhaust emission. Emission from diesel trucks for the haulage of materials and construction plants will contain high percentage of smoke particulate and unburned hydrocarbons in comparison with petrol driven vehicles. However, given the small scale of the Proposed Development, the anticipated number of construction plants that result from the construction works will unlikely be high. Ultra-low sulphur diesel (ULSD) with sulphur content not exceeding 0.005% by weight will be used as fuel to minimize SO₂ emission. Impact on the existing air quality is considered limited. In all circumstances, the contractor will be required to observed all relevant regulations and maintain all equipment in good condition to avoid any excessive emission. Under the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, only approved or exempted non-road mobile machineries (including mobile generator, air compressor, excavator, crawler crane, bulldozer and etc.) with a proper label are allowed to be used in the construction site.

Air Sensitive Receivers

- 4.6.4 There are a number of existing or planned residential developments and recreation ground located within close proximity to the Application Site, which are considered as Representative Air Sensitive Receivers (ASRs). These ASRs are identified at the existing (i) Wah King Mansion, (ii) Yick Fu Building, (iii) Merry Mansion, (iv) Honour Building, and (v) U PLACE the planned residential development at (vi) Kowloon Inland Lot. 11246, Sheung Heung Road. Furthermore, (vii) To Kwa Wan Recreation Ground is also considered as ASR.
- 4.6.5 The table below shows the representative existing and planned ASRs. The locations of the representative ASRs are shown in **Figure 4-3** Location of Representative Air Sensitive Receivers for Construction Dust Impact Assessment.

Table 4-3 Representative Air Sensitive Receivers

Ref.	Air Sensitive Receiver	Type	Shortest Distance from the Application Site (m)
Existing ASR			
A1	Yick Fu Building	Residential	28
A2	Wah King Mansion	Residential	21
A3	Merry Mansion	Residential	21

A4	Honour Building	Residential	56
A5	To Kwa Wan Recreation Ground	Recreational	24
A6	U PLACE	Residential	52

Mitigation Measures for Fugitive Dust Emission

- 4.6.6 With the implementation of sufficient dust suppression measures as stipulated under the APCO, Air Pollution Control (Construction Dust) Regulation (Cap 311R) and Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Cap 311Z), use of Ultra-low sulphur diesel (ULSD) with sulphur content not exceeding 0.005% by weight to minimize SO₂ emission, etc., fugitive dust and exhaust emission arising from the demolition works, earthworks, etc. can be effectively suppressed through contractual clauses and close enforcement of the resident engineers. The Contractor(s) shall be required to follow the requirements of the Air Pollution Control (Construction Dust) Regulation which requires notification before carrying out demolition works or construction works and to adopt dust reduction measures while carrying out demolition activities or construction activities. Under the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, only approved or exempted non-road mobile machineries (including mobile generator, air compressor, excavator, crawler crane, bulldozer and etc.) with a proper label are allowed to be used in the construction site.
- 4.6.7 Apart from the dust suppression measures stated in Cap 311R and Cap 311Z, non-blasting method (e.g., jack hammer, hydraulic breaker, hydraulic crusher) and top-down deconstruction approach will be adopted during demolition of the existing building to further minimize dust emissions.
- 4.6.8 By adopting good practices, it is expected that construction fugitive dust and exhaust emission can be minimized and kept to an acceptable level for the existing ASRs. Moreover, with the adoption of good practices, it is expected that the construction phase air quality impact would also be kept to an acceptable level as well.

4.7 Operation Phase Air Quality Impact

- 4.7.1 The proposed development site is not considered environmentally polluting in nature. There will be no chimney stack planned within the development site. No significant air quality impact on surrounding air sensitive uses is anticipated during its operation. For the future car parks within the proposed development, the applicant will observe and follow EPD's ProPECC PN2/96 on Control of Air Pollution in Car Parks for the design and operation of the car parks. Car parks will be designed such that the air quality guidelines set out in the PN are met under all condition.

4.8 Conclusion

- 4.8.1 Based on onsite survey, there is no odorous smell, or any other kind of emission observed at the subject site and in the immediate surrounding.
- 4.8.2 In addition, there is no industrial emission identified within 200m from the subject site, which meets the buffer distance requirement under the HKPSG.
- 4.8.3 The fresh air intake point of podium building and ventilation openings of the residential tower will be designed so as to meet the buffer distance requirement under the HKPSG as well.

- 4.8.4 Relevant fugitive dust and emission mitigation measures stipulated under relevant regulations will be followed to minimize emissions.
- 4.8.5 Therefore, no adverse air quality impact on the proposed development is anticipated.

5. SEWERAGE IMPACT ASSESSMENT

5.1 Scope of Work

- 5.1.1 The aim of this SIA is to assess whether the capacity of the existing sewerage network serving the Application Site is sufficient to cope with the sewage flow from the proposed development.

5.2 Existing Sewerage System

- 5.2.1 According to the Drainage Record obtained from DSD, there is a Ø300mm sewer pipe running along Sheung Heung Road. The existing sewers in the vicinity of the Application Site are shown in **Figure 5-1**.
- 5.2.2 There was a sewer upgrading works at Sheung Heung Road between FMH4025642 and FMH4025643, from 300mm to 450mm. The completion record is shown in **Appendix 5.3**.
- 5.2.3 A new terminal manhole TFMH-01 (S0) will be constructed at the proposed development to collect sewage from the proposed development. The existing manhole on site will be demolished and the existing sewer will not be used. A new Ø200mm polyethylene pipe will be proposed to connect the proposed development and the existing manhole FMH4025672 (S1).
- 5.2.4 Invert levels and pipe size of the proposed terminal manhole and new manhole are shown in **Figure 5-2**.

5.3 Assessment Criteria and Methodology

- 5.3.1 The Commercial and Industrial Floor Space Utilization Survey (CIFSUS) conducted by the Planning Department has been used to determine the worker density for various economic activities and planned usage types.
- 5.3.2 Environmental Protection Department's (EPD's) Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning, Version 1 (GESF) has been referred to for the purposes of estimating the quantity of the sewage generated from the Proposed Development and the existing catchment area. Sewage flow parameters and global peaking factors in this document have been adopted for this SIA.
- 5.3.3 According to the GESF, the overall unit flow is composed of flows due to employees and the associated activities. The following unit flow factors have been adopted in the SIA calculation in accordance with Tables T-1, T-2 and T-3 of the GESF:
- Residential housing: 0.27m³/day (Private R2)
 - Community, Social & Personal Services: 0.28m³/day (Commercial Employee and J11 – Community, Social & Personal Services)
 - Business/Office: 0.28m³/day (Commercial Employee and J6 Finance, Insurance, Real Estate & Business Services)
 - Wholesale & Retail: 0.28m³/day (Commercial Employee and J4 – Wholesale & Retail)
 - Storage: 0.18m³/day (Commercial Employee and J3 Transport, Storage & Communication)
 - Manufacturing: 0.63m³/day (Industrial employee and J1 Manufacturing – Central Kowloon)
- 5.3.4 The catchment inflow factor, PCIF of 1.0 (Central Kowloon), is adopted in catchment calculations.

5.4 Assessment of Sewerage Impact

- 5.4.1 Sewage generated from the Application Site will be discharged via the terminal manhole to the existing manhole FMH4025672 (S1) via a polyethene pipe. Catchments in the vicinity of the Application Site are shown in **Figure 5-2**.
- 5.4.2 The estimated sewage flow from the Application Site and the existing catchments have been compared with the capacity of the existing sewerage system as shown in **Appendix 5.1**.
- 5.4.3 In accordance with Section 5.11 of the Sewerage Manual, should the existing sewage system be under-capacity, the following shall be satisfied to demonstrate that no adverse sewerage impact will arise as a result of the proposed development:
- Minimum freeboard of 1m at peak flow;
 - A minimum factor of safety against overflowing of 1.15, i.e. overflow will not occur at a flow rate of (1.15 times peak flow).
- 5.4.4 The sewage generated by the Application Site will be contributed by the residential units and shops on the ground to Second floors.
- 5.4.5 Detailed calculation of sewage generation from the proposed development is given in **Table 5-1** below.

Table 5-1 Estimated Peak Flow of the Proposed Residential Development

Calculation of Sewage Generation Rate of the Proposed Development			
Proposed Residential Development			Remarks
1 Residential			
1a.	Total number of residential units	= 76	units
1b.	Total number of residents	= 205	residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
1c.	Design flow	= 270	litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
1d.	Sewage Generation rate	= 55.4	m ³ /day
2 Clubhouse (4/F)			
2a.	Gross Floor Area	= 44	m ²
2b.	Assumed floor area per employee	= 30.3	m ² per employee -- (refer to Table 8 of CIFSUS - Community, Social & Personal Services)
2c.	Total number of employees	= 1	employees
2d.	Design flow	= 280	litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
2e.	Sewage generation rate	= 0.4	m ³ /day
3 Retail (G/F to 2/F)			
3a.	Assumed used area	= 531	m ²
3b.	Assumed floor area per employee	= 28.6	m ² per employee -- (refer to Table 8 of CIFSUS - Retail Trade)
3c.	Total number of employees	= 19	employees
3d.	Design flow	= 280	litre/employee/day -- (refer to Table T-2 of GESF - J4 Wholesale & Retail)
3e.	Sewage generation rate	= 5.2	m ³ /day
Total Flow from the Proposed Development			
	Flow Rate	= 61.0	m ³ /day
	Flow rate with P _{CIF} (Central Kowloon - 1.0)	= 61.0	m ³ /day (refer to Table T-4 of GESF - Central Kowloon - 1.0)

Contributing Population	=	226	people (average unit flow factor of all typical residents plus employees)
Peaking factor	=	8	(refer to Table T-5 of GESF for a population of less than 1000 incl. stormwater allowance)
Peak Flow	=	<u>5.7</u>	litre/sec

5.5 Discussion

- 5.5.1 According to the calculation results presented in **Appendix 5.1**, the sewage generated from the Application Site does not exceed the capacity of the existing sewerage network.
- 5.5.2 Therefore, it can be said that the capacity of existing sewerage system will be sufficient to cater for the sewage generated from the proposed development.

5.6 Conclusion

- 5.6.1 The potential sewerage impact arising from the Application Site has been quantitatively assessed by comparing the estimated sewage flow from the proposed development and the capacity of the existing sewerage system in the vicinity.
- 5.6.2 Based on the results of sewerage impact assessment, as shown in **Appendix 5.1**, unacceptable sewerage impact resulting from the Proposed Development is not anticipated at the downstream sewerage system. Hence, no upgrading will be required.
- 5.6.3 This SIA confirms the feasibility of the proposed development in terms of its sewerage impact.

6. WASTE MANAGEMENT

6.1 Introduction

6.1.1 This section reviews the types and quantities of potential sources of waste that will arise during the construction and operation of the proposed development. Potential environmental impacts associated with the handling and disposal of waste have been identified. Options for avoidance, minimization, reuse, recycling, treatment, storage, collection, transport, and disposal of such wastes are examined.

6.2 Environmental Legislation, Policies, Standards and Criteria and other Relevant Guidelines

6.2.1 There are various types of waste which may arise during construction works. The various types of waste may require a different approach for management according to their specific characteristics. The regulations and requirements regarding waste management (collection, storage, transfer and disposal) of the various waste streams are summarised below.

6.2.2 The principal legislation controlling waste materials in Hong Kong which are relevant to this proposed development are:

- Waste Disposal Ordinance (WDO) (Cap. 354);
- Waste Disposal (Chemical Waste) (General) Regulation;
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation.

6.2.3 Other key relevant guidelines published by various Government Departments and Bureaux include:

1. Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes;
2. Works Branch Technical Circular No. 2/93 "Public Dumps";
3. DB Technical Circular (Works) No. 6/2010 Trip Ticket System for Disposal of Construction & Demolition Materials;
4. ETWB Technical Circular (Works) No. 19/2005 Environmental Management on construction Sites.

6.3 Identification and Evaluation of Potential Impacts

Construction Phase

6.3.1 The construction activities to be carried out for the proposed development would generate a variety of wastes that can be divided into distinct categories based on their composition and ultimate method of disposal. The identified waste types include:

- Site clearance waste;
- Construction and demolition (C&D) materials;
- General refuse
- Chemical wastes

6.3.2 The nature of each type of waste arising is described in the following sections, together with an evaluation of the potential environmental impacts associated with these wastes.

6.3.3 The general waste management strategy is to avoid waste generation in the first place. If that is unavoidable, source reduction and segregation should be exercised as far as

practicable and at the same time, recycling and reuse should be adopted to salvage as much as possible all the recyclable and reusable materials.

- 6.3.4 The proposed development is a designated project under the EIAO. A detailed account on type of waste to be generated and their amount will be provided in EIA study when details of proposed development and construction method is available. The following paragraphs provide a general waste management approach as well as good practices for waste management.

Site Clearance Waste

- 6.3.5 Clearance concrete building, steel etc is required. Clearance and demolition would also generate inert and non-inert C&D waste. Inert C&D materials would be delivered off-site for reuse in other construction contractors or to designated public fill reception facilities. Construction and Demolition (C&D) Materials
- 6.3.6 C&D materials are categorized to "inert C&D materials" and "non-inert C&D materials". C&D materials that are wholly inert, namely public fill, should not be disposed of to landfill, but taken to public filling areas, which usually form part of reclamation schemes. The Land (Miscellaneous Provisions) Ordinance requires that dumping licences be obtained by individuals or companies who deliver public fill to public filling areas. The Civil Engineering & Development Department (CEDD) issues the licences under delegated powers from the Director of Lands.
- 6.3.7 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 for disposal must consist entirely of inert material.
- 6.3.8 Inert C&D materials would be delivered off-site for reuse in other construction contractors or to designated public fill reception facilities. The Contractor should timely notify the estimated volumes of excavated materials to be generated and make an agreement with the PFC on the handling of the inert C&D materials. Inert C&D materials should be segregated from other wastes to avoid contamination and to ensure acceptability at public fill reception facilities and other construction sites. All inert C&D materials will need to be carefully stockpiled if it cannot be removed directly to avoid dust and other nuisance impacts. The inert C&D materials to be delivered to public filling reception facilities shall be materials consisting of soil, concrete, etc. The materials shall be free from plastics, chemical waste, industrial metals and other materials that are considered as C&D wastes. A designated temporary storage area of inert C&D materials shall be provided on site.
- 6.3.9 Non-inert C&D materials comprise materials including mixture of topsoil and dead vegetative materials, timber, glass, steel and plastics, etc. arising from construction and demolition that are not suitable for backfilling. Non-inert C&D materials would be segregated on site to facilitate recycling as far as possible by designating specific areas/bins for the temporary storage of the segregated material. Disposal of non-inert C&D material at designated landfills will be the last resort.
- 6.3.10 The Contractor should separate non-inert C&D materials from inert C&D materials on-site. All segregated recyclable materials (e.g. metal) should be collected by reputable licensed recyclers. The remaining non-inert C&D materials should be disposed of at designated landfill by dump trucks.

General Refuse

- 6.3.11 Throughout the construction stage, the workforce would generate general refuse comprising food scraps, wastepaper, empty containers, etc. Release of general refuse

into the nearby storm drain should not be permitted. Effective collection of site wastes would be required to prevent waste materials being blown around by wind, flushed or leached into the surrounding environment.

- 6.3.12 Recyclable materials (i.e. paper, plastic bottles and aluminium cans) will be separated for recycling, in order to reduce the amount of general refuse to be disposed of at landfill. Adequate number of enclosed waste containers will be provided to avoid over-spillage of waste. The non-recyclable refuse will be placed in bags, stored in enclosed containers, and disposed of at designated landfill on a daily basis.
- 6.3.13 With the implementation of the recommended waste management practices on site, adverse environmental impacts would not arise from the storage, handling and transportation of general refuse.

Chemical Waste

- 6.3.14 The maintenance and servicing of construction plant and equipment may generate chemical wastes such as cleaning fluids, solvents, lubrication oil and fuel. Maintenance of vehicles may also involve the use of a variety of chemicals, oil and lubricants. The amount of chemical waste generated will be small, in the order of a few cubic metres per month. For the disposal of chemical wastes, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the requirements stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Chemical waste should be collected by a licensed collector and to be disposed of at a licensed chemical waste treatment and disposal facility.
- 6.3.15 Provided that the handling, storage, and disposal of chemical wastes are in accordance with these requirements, adverse environmental impacts are not expected.
- 6.3.16 With the implementation of the good practices and appropriate mitigation measures, no adverse waste management impact is envisaged.

Operation phase

- 6.3.17 It is anticipated that general refuse will be generated during operation of the proposed development. General refuse, such as food waste, packaging materials, etc., will be generated by residents during the operation of the proposed development.
- 6.3.18 With the domestic nature and scale of development, small amount of general refuse will be generated during operation phase. Standard approach that is widely adopted in other parts of Hong Kong will be adopted for the handling and disposal of this small quantity of waste. Proper refuse collection points will be provided, and collection of waste will be arranged by a licensed contractor on regular basis.

7. LAND CONDITION REVIEW

7.1 The land contamination review has been conducted in accordance with the following legislation, standard and guidelines:

- EPD Guidance Note for Contaminated Land Assessment and Remediation.
- EPD Practice Guide for Investigation and Remediation of Contaminated Land.
- Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land

7.2 Background and Site Description

7.2.1 With respect to this Land Contamination Review (LCR), a desktop review (including reviewing of historical land uses, information collected from relevant government departments) and a site visit were conducted.

7.2.2 According to the information from the Applicant, the original use of the Subject Site is an industrial building. According to the Building Records Access and Viewing On-line (BRAVO) of Building Departments (BD). At present, the Subject Site is an industrial building

7.3 Review of Historical Land Use

7.3.1 Aerial photographic records for the site between 1963 and 2020 were reviewed to evaluate the likelihood of potential contamination associated with past uses of the Site.

7.3.2 The historical land uses identified from the review are summarised in **Table 7.1** and selected aerial photographs are provided in **Appendix 7-1**

7.3.3 These records revealed that the Site is an industrial building from 1963 until now(i.e.2020).

7.3.4 With reference to the BRAVO, there is one building records about the Subject Site. Given that there is a motor car repair shop in the G/F from 1962 until now there are no further change about land of use.

Table 7.1 Land Use Summary on Subject Site

Year	Land Use	Photo No.
1963	Industrial Building Structure	1963-4938
1973	Industrial Building Structure	CN00565
1982	Industrial Building Structure	4228
1989	Industrial Building Structure	A17963
1994	Industrial Building Structure	A38099
1997	Industrial Building Structure	CN18965
2009	Industrial Building Structure	CW84238
2013	Industrial Building Structure	CW103726

2014	Industrial Building Structure	CW108925
2015	Industrial Building Structure	CW114670
2017	Industrial Building Structure	E030950
2020	Industrial Building Structure	E099612C

7.4 Acquisition of Local Authority Records

7.4.1 Apart from the historic aerial photos, the following Hong Kong Special Administration Region (HKSAR) Government Departments have been enquired on the latest update on the availability of land use status and records of land contamination and/or spillage of the Application Site. The summary of correspondence is tabulated in **Table 7.2** below. Copy of letters which the Consultant sent to various Government Departments and relevant replies are shown in **Appendix 7-2** for reference.

Table 7.2 Enquiries and Responses on Land Contamination Related Records for the Schemes

Consultant's Letter Ref.	Department	Response Letter Ref.	Date	Summary
RCLSHR33EI01_0_0001L.22	The Environmental Protection Department	() in EP650/P7/1	25/11/22	According to the EPD replied, there was no chemical waste spillage accident record onsite. As advised by EPD, the Consultant reviewed the registry records of chemical waste producers maintained at the Territorial Control Office of the EPD on 29 November 2022. With reference to the EPD provided, There are 23 CWPs (19 valid and 4 invalid) are found near /at the site.
RCLSHR33EI01_0_0002L.22	Fire Service Department	(145) in FSD GR 6-5/4 R Pt.44	19/12/2022	There are neither records of dangerous good license, fire incidents nor incidents of spillage / leakage of dangerous goods were found in the site location.
RCLSHR33EI01_0_0003L.22	Hong Kong Police Force	(88) in CP OPS EOD 6-20/1 Pt.5	22/11/2022	There was no explosive incident in EOD's database.
RCLSHR33EI01_0_0004L.22	Planning Department	() in K-R/PUB/1	9/11/2022	The subject site falls within an area zoned "Resident" on the draft Ma Tau Kok Outline Zoning

				Plan (OZP) No.S/K10/29. There does not have information relating to land contamination issues of the subject site.
RCLSHR33EI01_0_0005L.22	Lands Department	(191)in DLOKW 4/1741/53	29/11/ 2022	DLO has no related records of past land use and contamination information of the subject site.

7.5 Site Observation

- 7.5.1 Site visit was conducted on 18 November 2022. At present, the site is industrial building.
- 7.5.2 According to the site visit of the site visit, the ground floor of the site is currently a car repairing workshop, hardware store. There were no aboveground/underground oil storage tanks, chemical and dangerous goods observed to be stored on site during the site visit.

7.6 Discussion

- 7.6.1 It is observed that the site has been an industrial building since 1962s. Based on the aerial photos and building record (BRAVO) in 1962, the site has been used by manufacturing industries (car repair workshops and office use), the current buildings have remained since its erection from 1963.
- 7.6.2 Based on the observation during site visit, the ground floor of the site is currently a car repair workshop, car hardware shop, while the upper floors are for office use. Since car repairing workshops may have leakage of petrol/diesel and lubricant from vehicles during vehicle and equipment maintenance/repair, potential land contamination is present at the site.

7.7 Recommendations

- 7.7.1 Further site appraisal and soil sampling may be required to determine whether the site is contaminated, and if so, the extent of the potential contamination. Nevertheless, the consequent Contamination Assessment Plan (CAP) will be prepared to cover the Schemes. A Contamination Assessment Plan (CAP) and subsequently, Contamination Assessment Report (CAR), and Remediation Action Plan (RAP) will be prepared in later stages to identify the potential land contamination issues in the Schemes.
- 7.7.2 Further land contamination assessment and/or remediation works will be completed before commencement of any construction works for the development, in accordance with relevant guidelines issued by government departments.

8. CONCLUSION

- 8.1.1 The potential environmental noise, air quality and sewerage impacts arising from the proposed development at the subject site zoned "R(E)" have been assessed either quantitatively or qualitatively.

Road Traffic Noise Impact

- 8.1.2 A road traffic noise impact assessment has been conducted based on the worst case scenario within 15 years from tentative completion year of the proposed development.
- 8.1.3 The results indicated that with a package of noise mitigation measures (i.e. baffle type acoustic window) in place, there will be no unacceptable road traffic noise impact on the proposed development.

Fixed Noise Impact

- 8.1.4 The potential fixed noise impact due to the identified fixed noise sources have been quantitatively evaluated. According to the on-site noise measurement results, the sound power level was determined. According to the general acoustic principle and the TM, the fixed noise effect on the proposed development have been predicted and found to be in compliance with the standard under worst case situation.
- 8.1.5 The assessment confirms that there is no adverse fixed noise impact anticipated at the Subject Site.
- 8.1.6 In detailed design of the potentially noisy equipment onsite (e.g. AC system for podium building), the potential noise impact will be controlled in accordance with the standard under HKPSG (i.e. ANL-5dB(A) or prevailing background whichever is lower). There are practical noise mitigation measures such as selection of more quiet equipment, careful design of locations, enclosure or simply with the fixed noise source (e.g. pumps) housed indoors, use of silencer, acoustic louvre, etc. Adverse fixed noise impact from future operation of the proposed development is not anticipated.

Air Quality Impact

- 8.1.7 Based on onsite survey, there is no odorous smell, or any other kind of emission observed at the subject site and in the immediate surrounding.
- 8.1.8 In addition, there is no industrial emission identified within 200m from the subject site, which meets the buffer distance requirement under the HKPSG.
- 8.1.9 The fresh air intake point of podium building and ventilation openings of the residential tower will be designed so as to meet the buffer distance requirement under the HKPSG as well.
- 8.1.10 Therefore, no adverse air quality impact on the proposed development is anticipated.

Sewerage Impact

- 8.1.11 Based on the results of sewerage impact assessment, as shown in **Appendix 5.1**, unacceptable sewerage impact resulting from the Proposed Development is not anticipated at the downstream sewerage system. Hence, no upgrading will be required.

Construction Phase Environmental Impact

- 8.1.12 For construction phase air quality impact, best management practice and relevant environmental mitigation measures will be adopted to minimize potential environmental impact during construction of the Application Site.

8.1.13 In conclusion, no insurmountable environmental impact is anticipated with the recommended environmental mitigation measures or management practice in place.

Figures

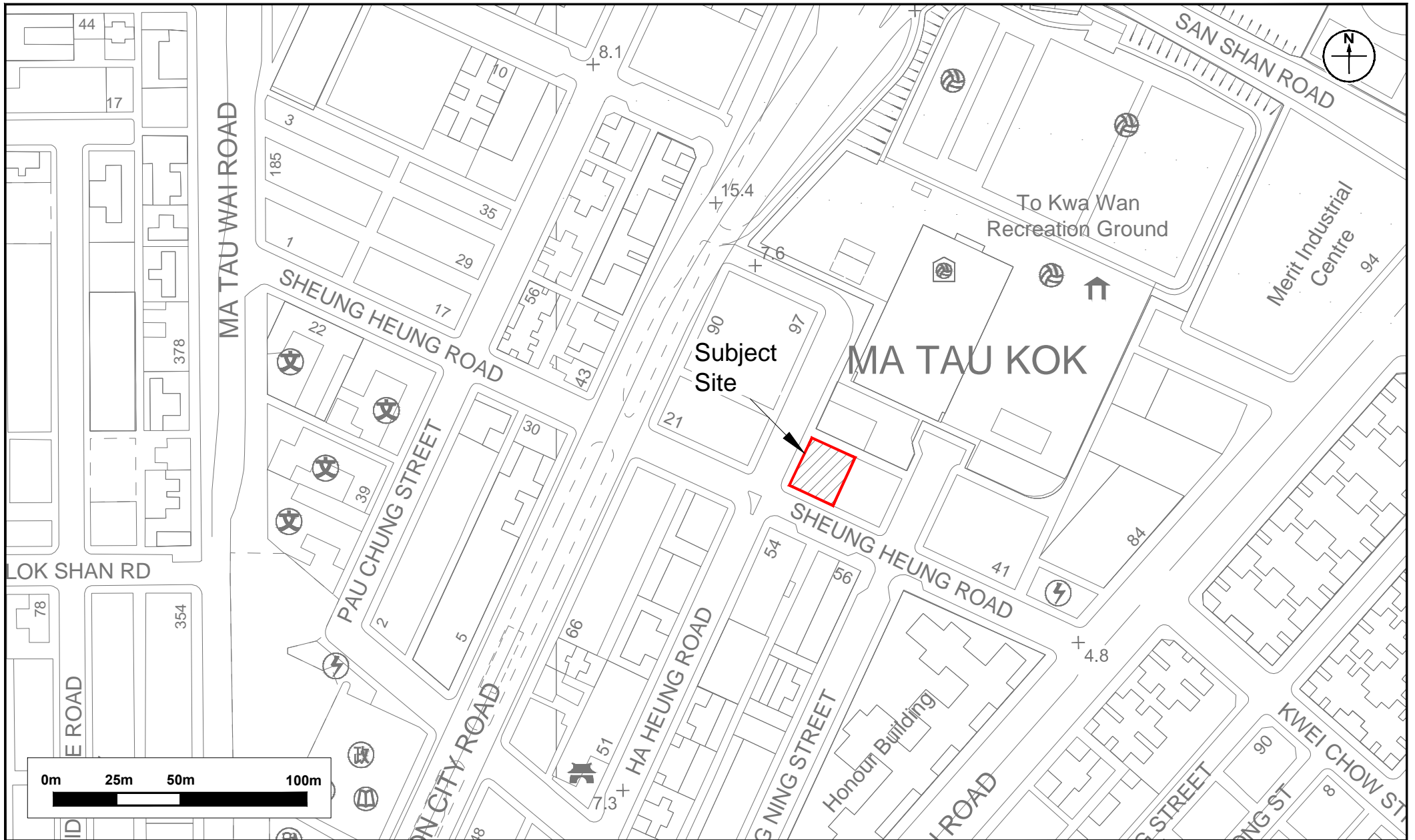


Figure: 1-1

Title: Location of the Subject Site and its Environs

Project: Environmental Assessment for Proposed Residential Building At 33 Sheung Heung Road, Kowloon

RAMBOLL

Drawn by: JC

Checked by: BT

Rev.: 1.0

Date: Mar 2023

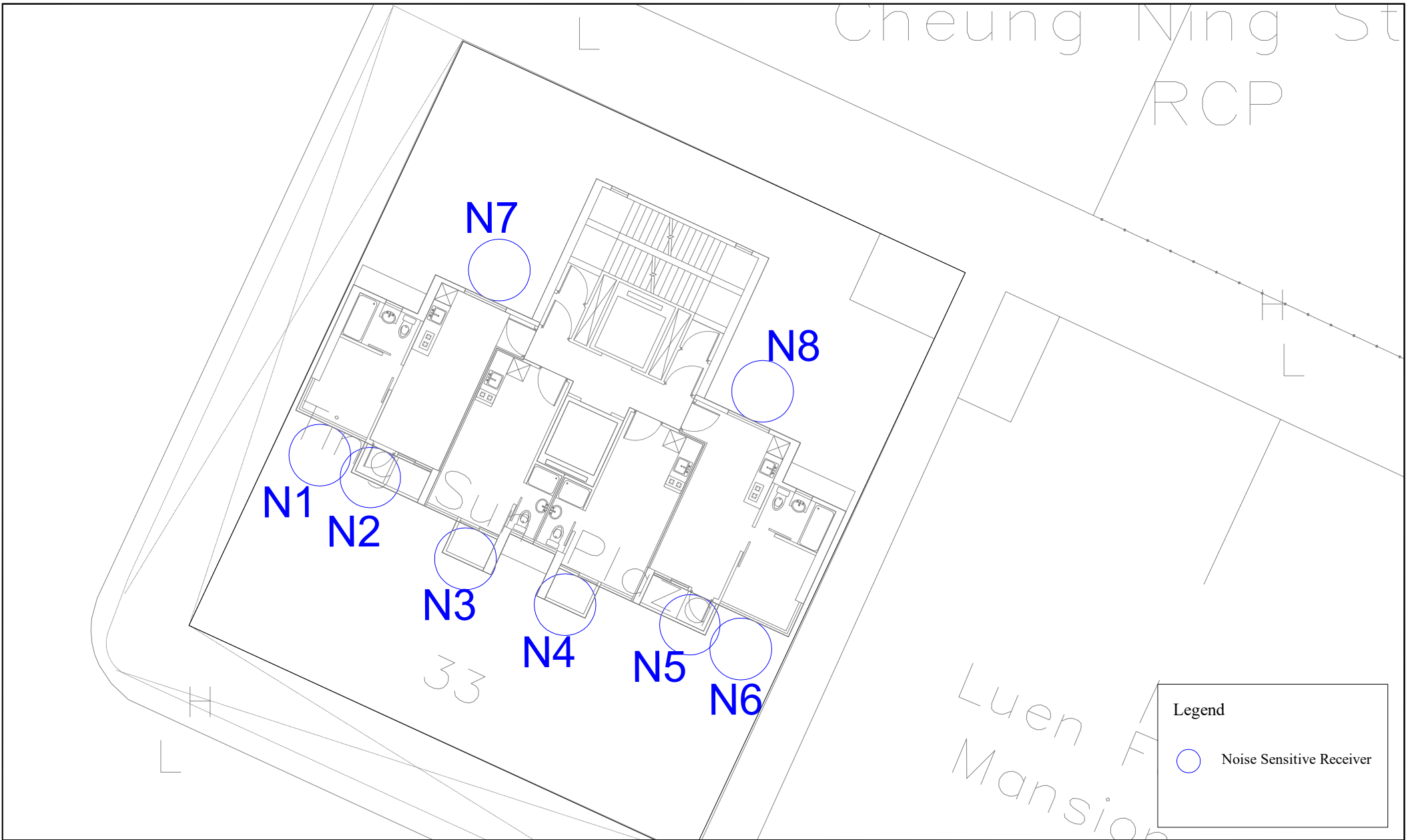


Figure: 2-1a

Title: Noise Sensitive Receivers selected for Road Traffic Noise Impact Assessment(6/F-23/F)

Project: Environmental Assessment for Proposed Residential Building At 33 Sheung Heung Road, Kowloon

RAMBOLL

Drawn by: SC

Checked by: BT

Rev.: 1.0

Date: Sep 2023

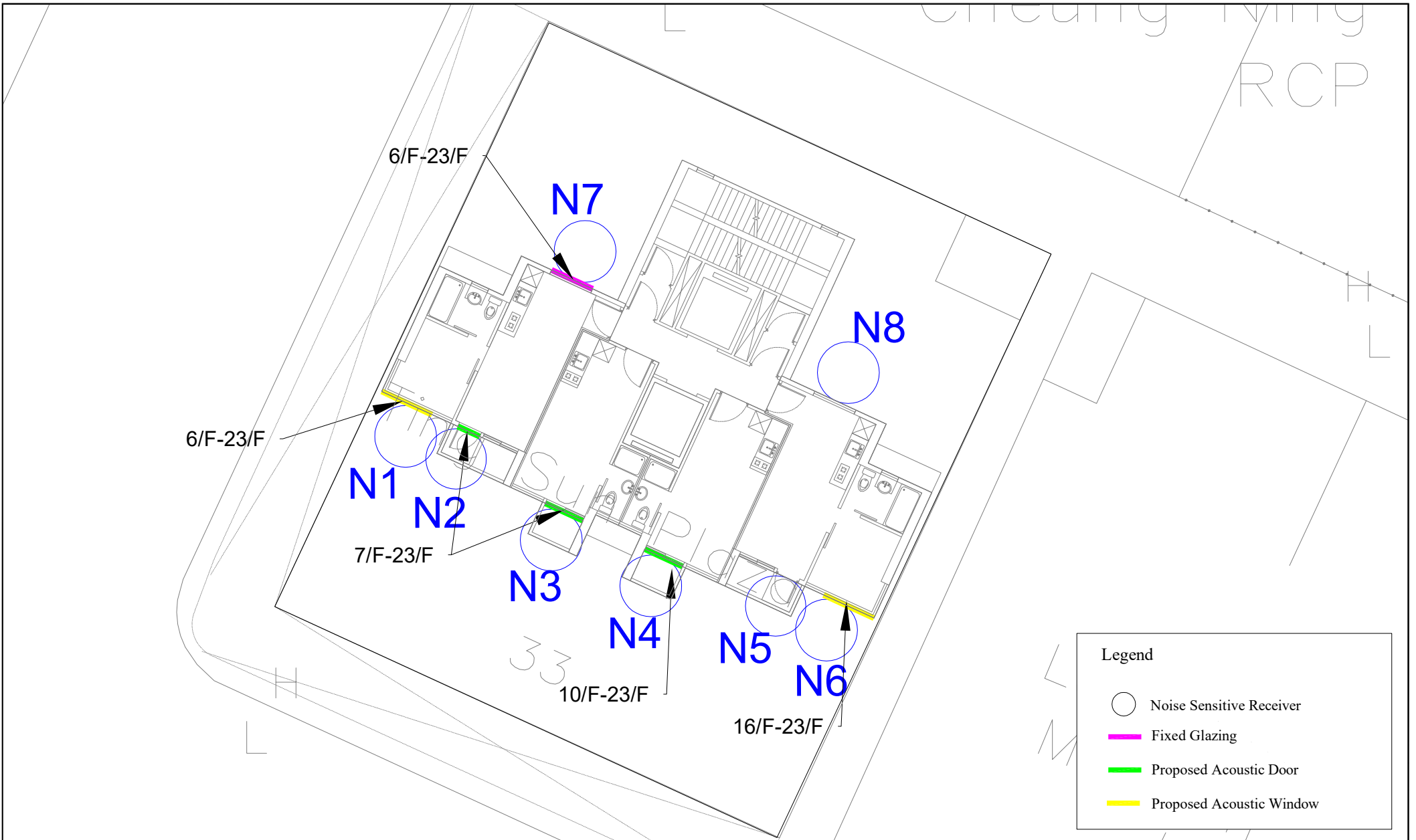


Figure: 2-2a

Title: Proposed Noise Mitigation Measures for Road Traffic Noise Impact Assessment(6/F-23/F)

Project: Environmental Assessment for Proposed Residential Building At 33 Sheung Heung Road, Kowloon

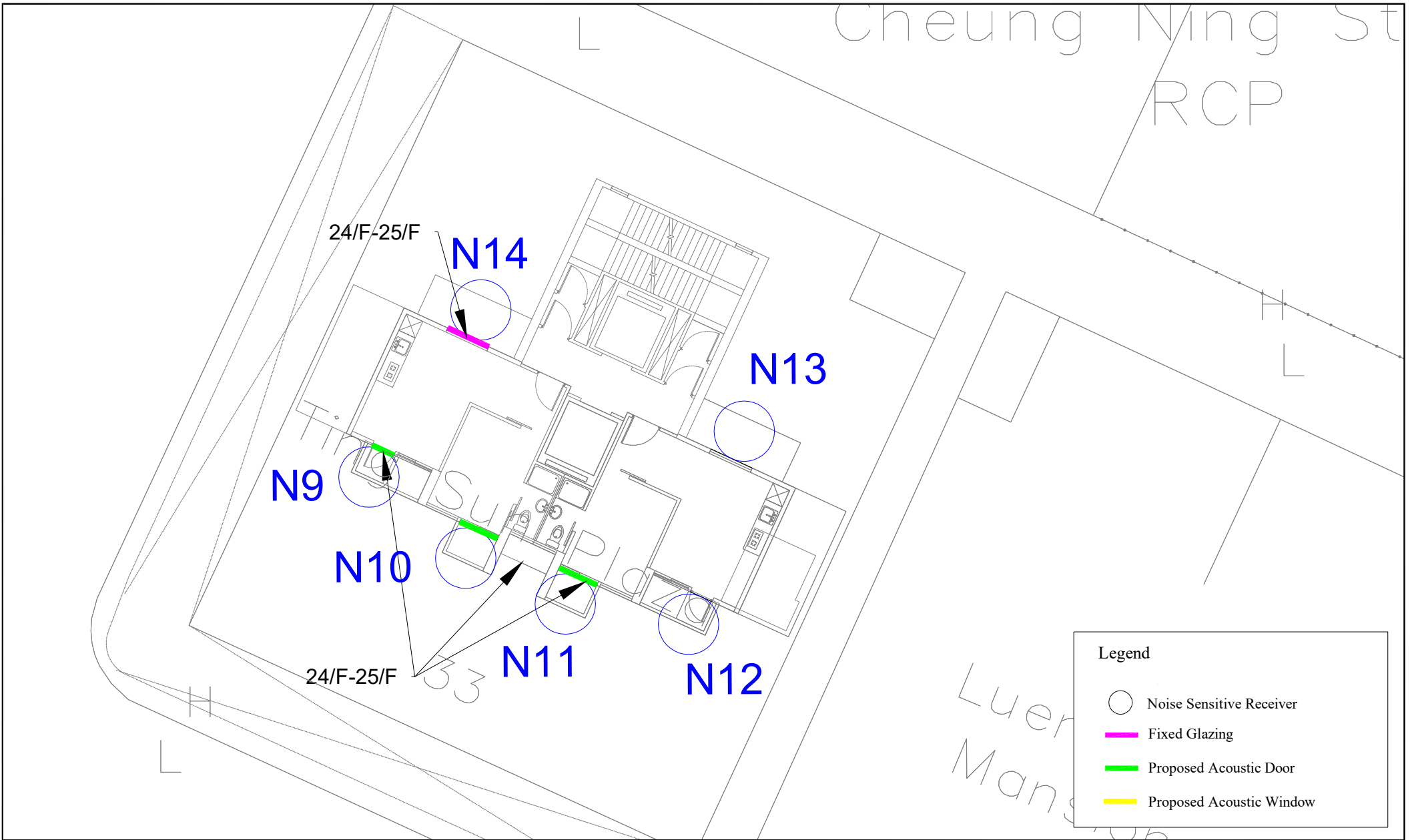
RAMBOLL

Drawn by: SC

Checked by: BT

Rev.: 1.0

Date: Sep 2023



Legend

- Noise Sensitive Receiver
- Fixed Glazing
- Proposed Acoustic Door
- Proposed Acoustic Window

Figure: 2-2b	Title: Proposed Noise Mitigation Measures for Road Traffic Noise Impact Assessment(24/F-25/F)	RAMBOLL
		Drawn by: SC
Project: Environmental Assessment for Proposed Residential Building At 33 Sheung Heung Road, Kowloon		Checked by: BT
		Rev.: 1.0
		Date: Sep 2023

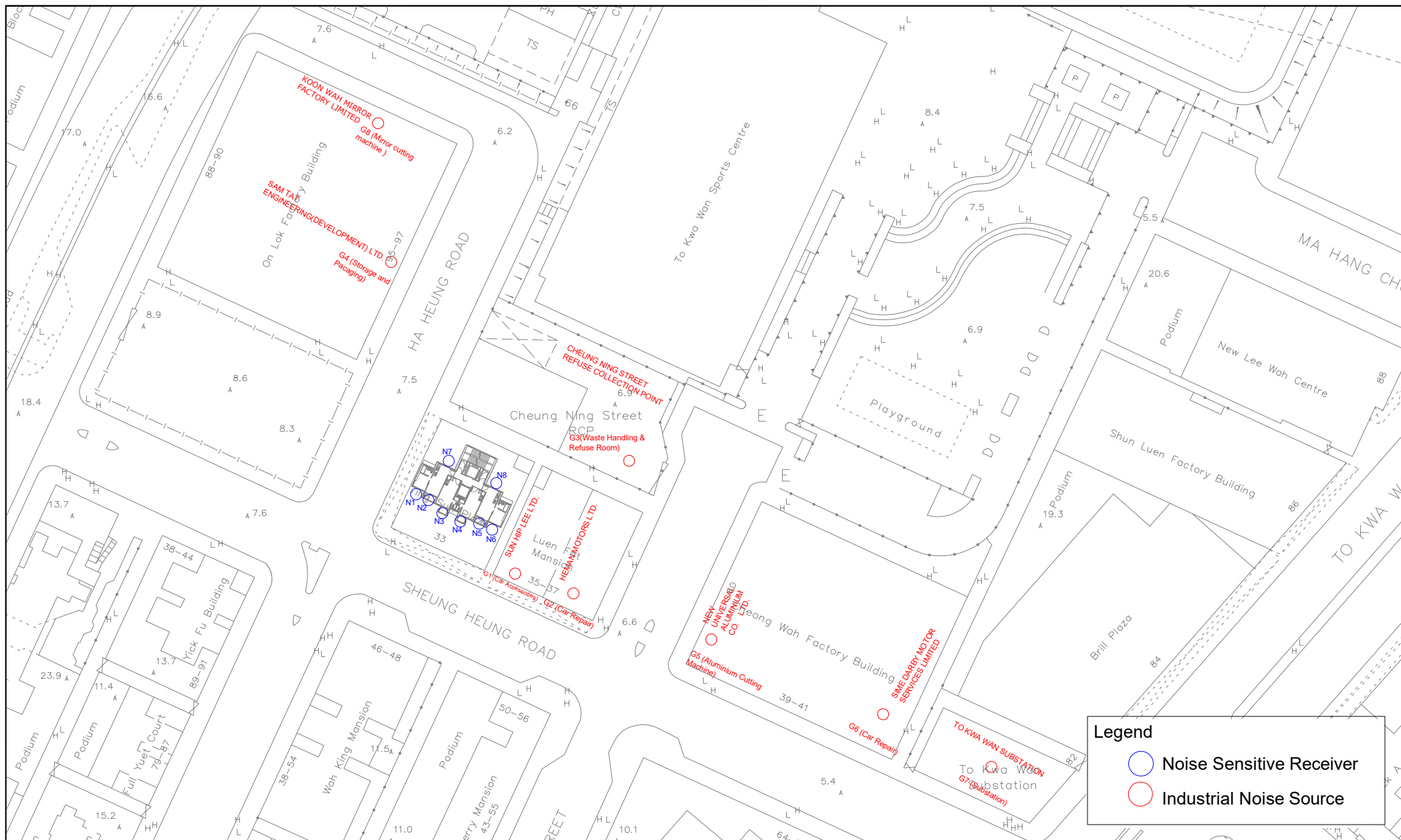


Figure: 3-1

Title: Identified Fixed Noise Sources and Representative Noise Sensitive Receivers selected for Fixed Noise Impact Assessment

Project: Environmental Assessment for Proposed Residential Building At 33 Sheung Heung Road, Kowloon

RAMBOLL

Drawn by: SC

Checked by: BT

Rev.: 1.0

Date: Mar 2023

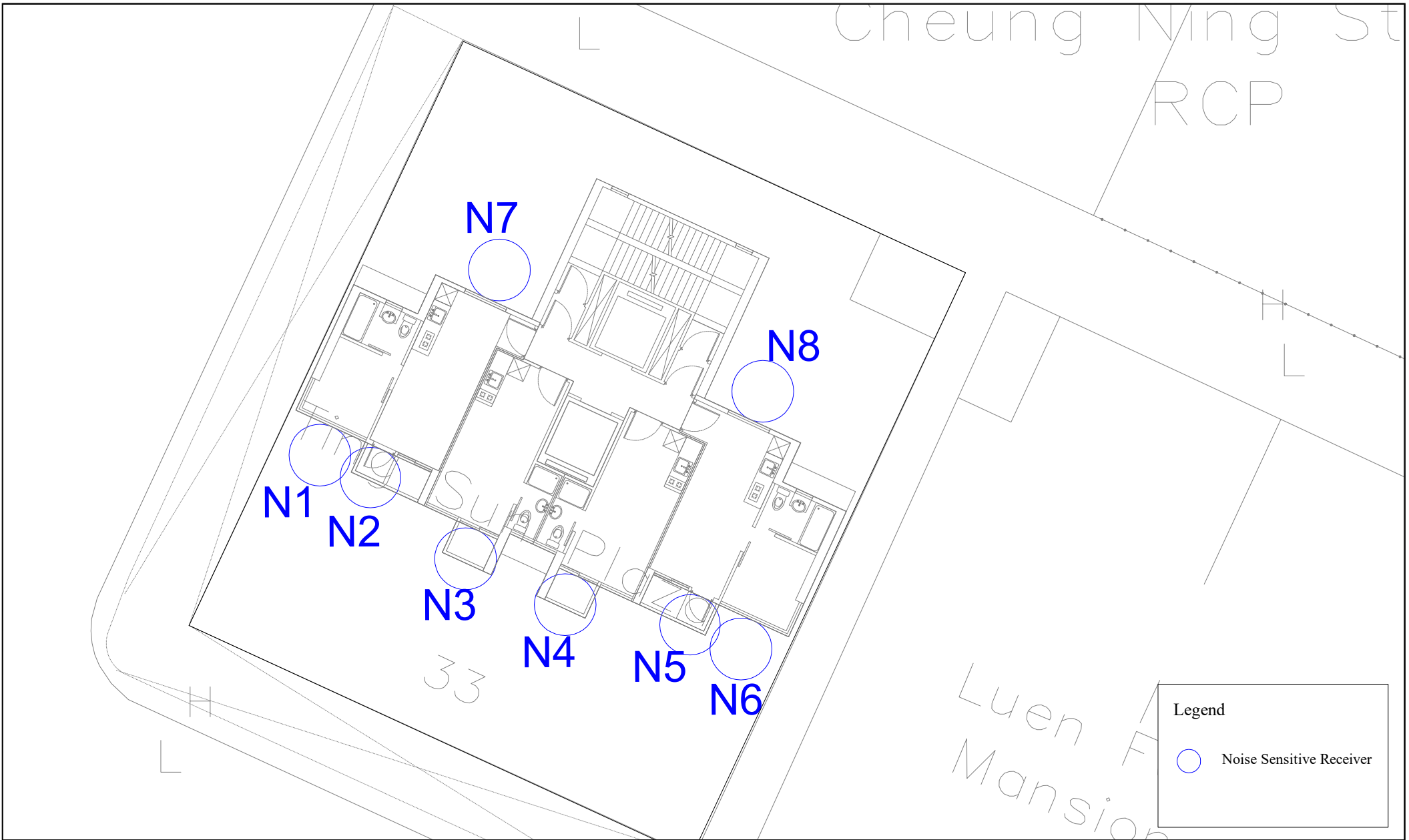


Figure: 3-2a

Title: Noise Sensitive Receivers Location (6/F-25/F)

Project: Environmental Assessment for Proposed Residential Building At 33 Sheung Heung Road, Kowloon

RAMBOLL

Drawn by: SC

Checked by: BT

Rev.: 1.0

Date: Sep 2023

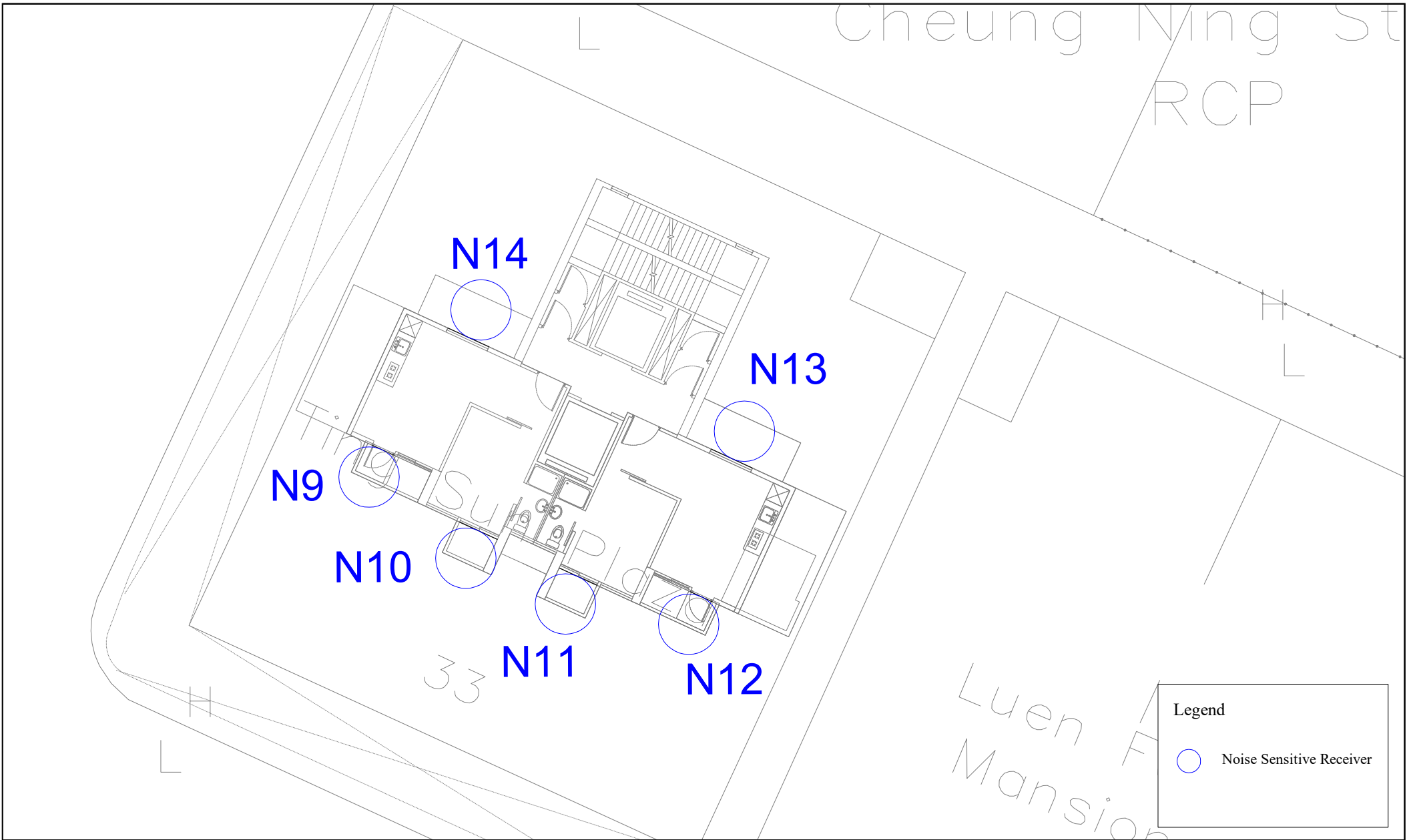


Figure: 3-2b

Title: Noise Sensitive Receivers Location (24/F-25/F)

Project: Environmental Assessment for Proposed Residential Building At 33 Sheung Heung Road, Kowloon

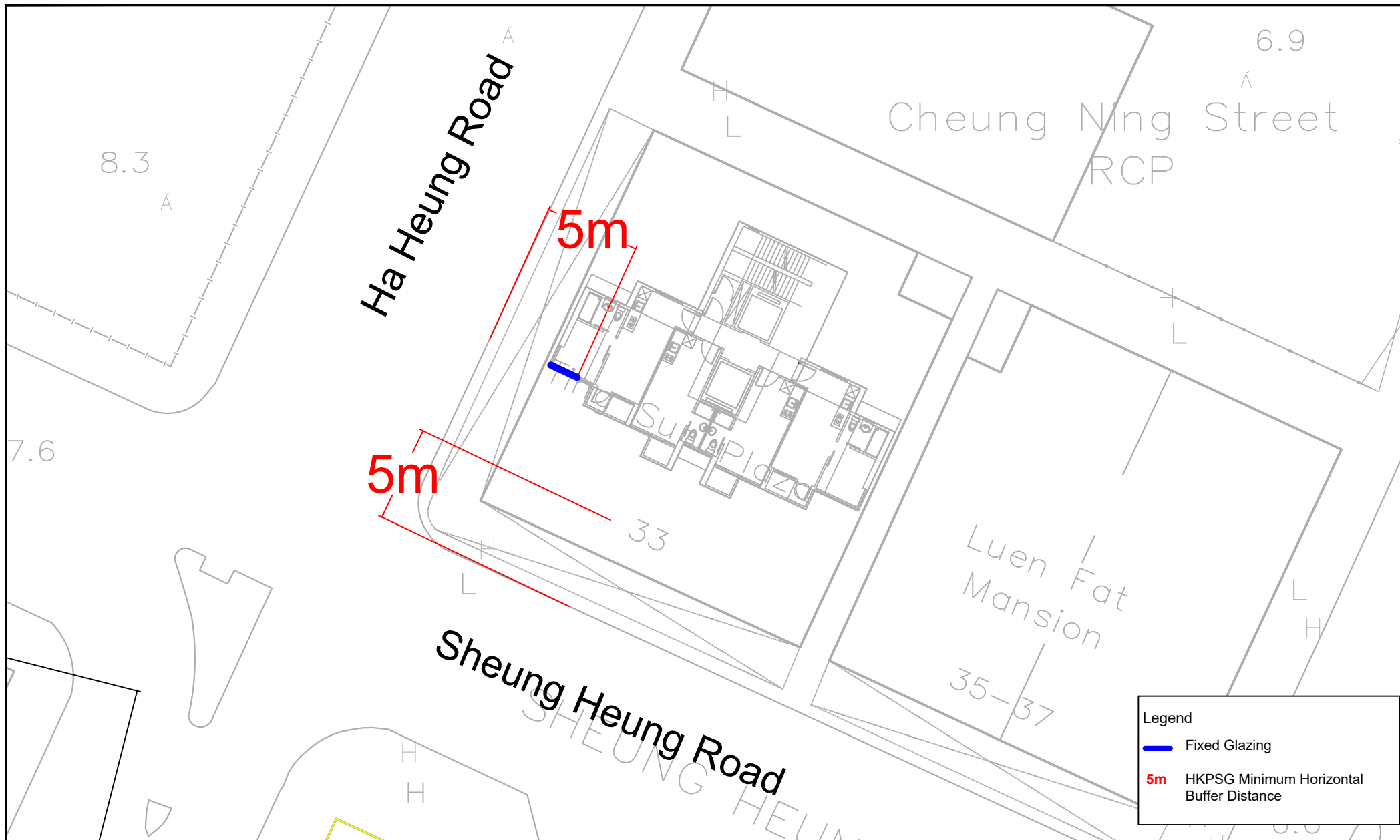
RAMBOLL

Drawn by: SC

Checked by: BT

Rev.: 1.0

Date: Sep 2023





Legend	
	Fixed Glazing
	5m HKPSG Minimum Horizontal Buffer Distance

Figure: 4-1

Title: Horizontal Separation Distance between Road Kerb Side and Prescribed Ventilation Opening/ Fresh Air Intake Location

Project: Environmental Assessment for Proposed Residential Building At 33 Sheung Heung Road, Kowloon

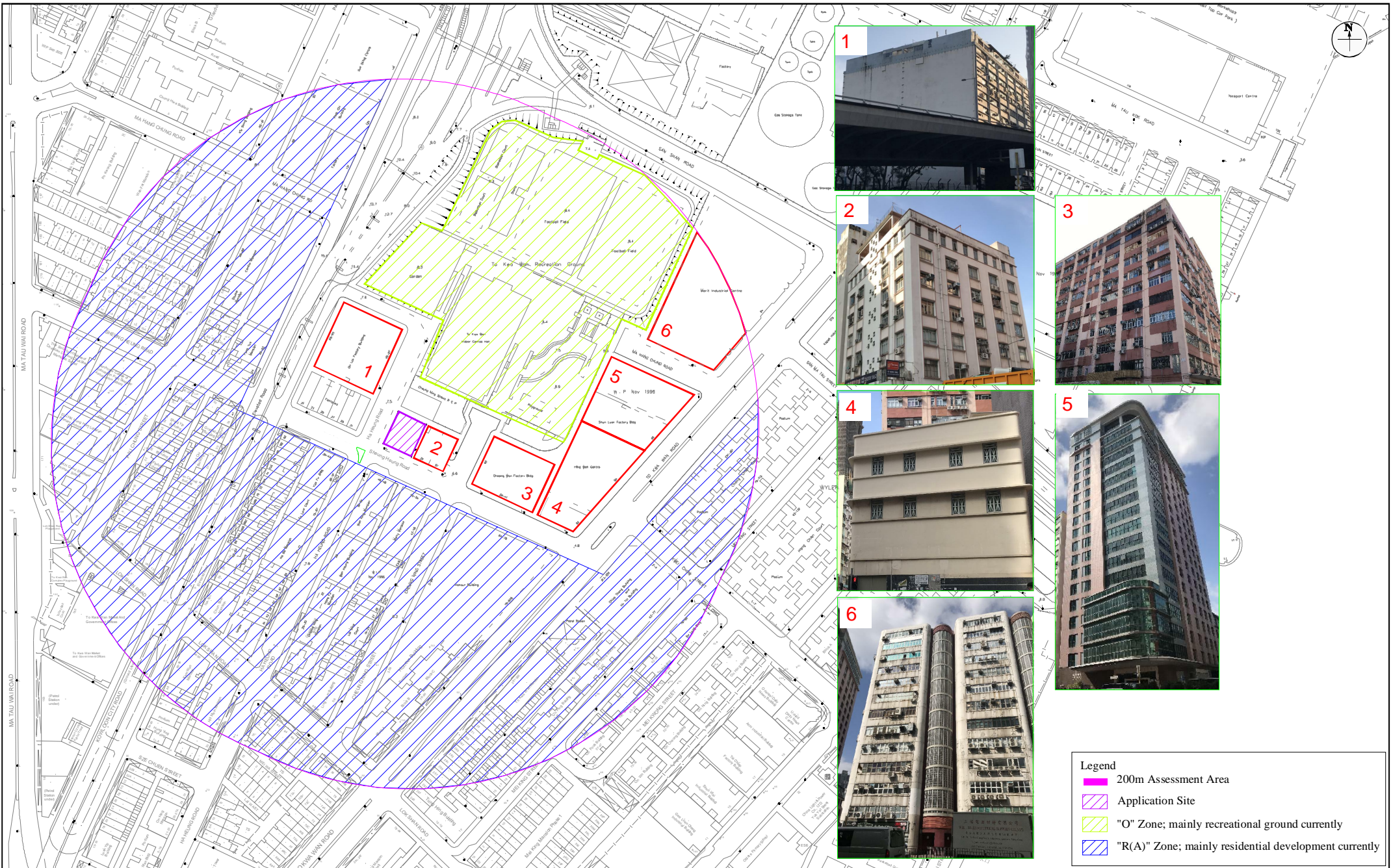
RAMBOLL

Drawn by: SC

Checked by: BT

Rev.: 1.0

Date: Mar 2023



Legend	
	200m Assessment Area
	Application Site
	"O" Zone; mainly recreational ground currently
	"R(A)" Zone; mainly residential development currently

Figure: 4-2	RAMBOLL
Title: Surrounding Context within 200m from the Subject Site	
Project: Environmental Assessment for Proposed Residential Building At 33 Sheung Heung Road, Kowloon	Drawn by: JC Checked by: BT Rev.: 1.0 Date: Sep 2023

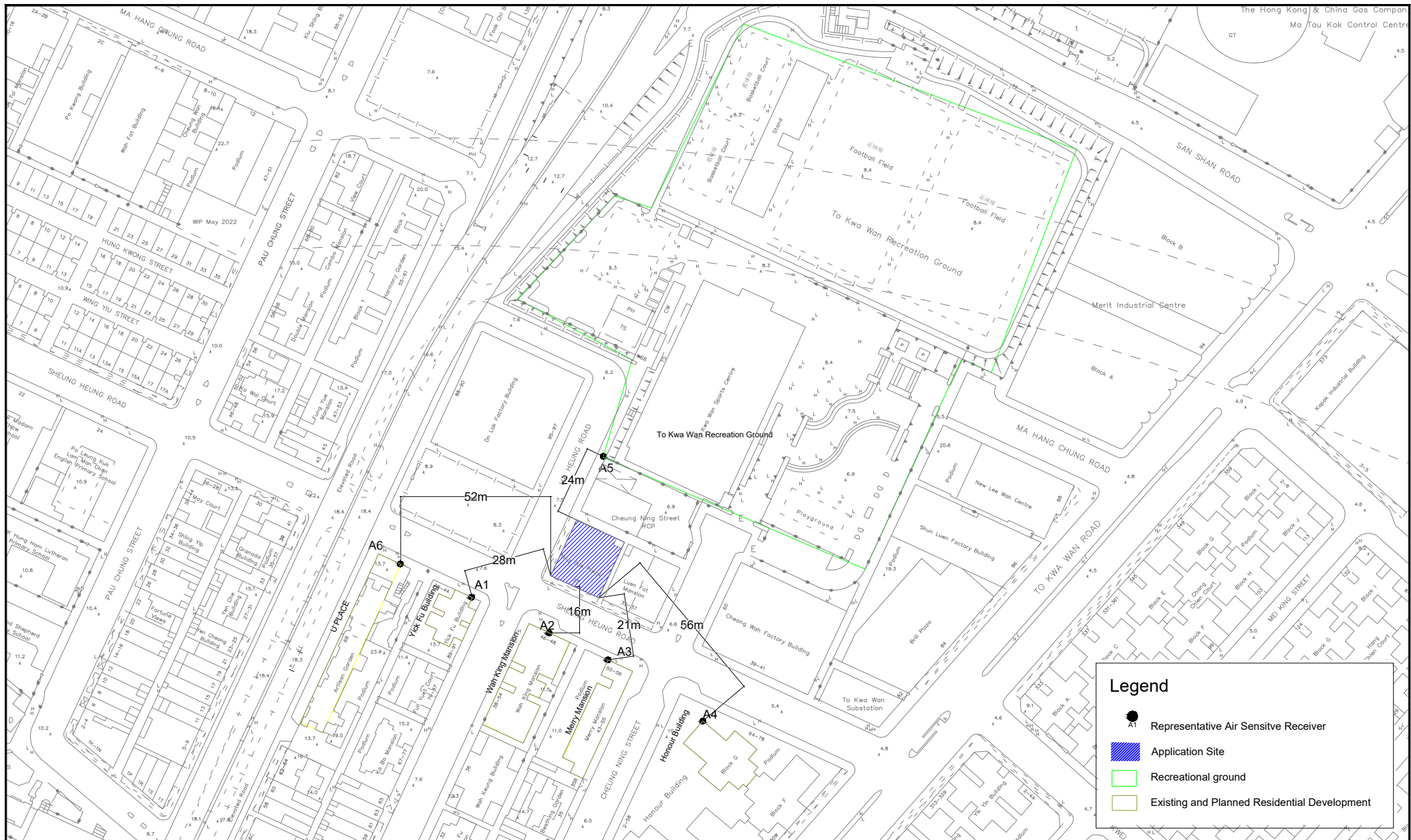


Figure: 4.3

Title: Representative Air Sensitive Receivers

Project: Planning Application for a Proposed Residential Building at 33 Sheung Heung Road, Kowloon

RAMBOLL

Drawn by: SC

Checked by: RL

Rev.: 1.0

Date: Jan 2023

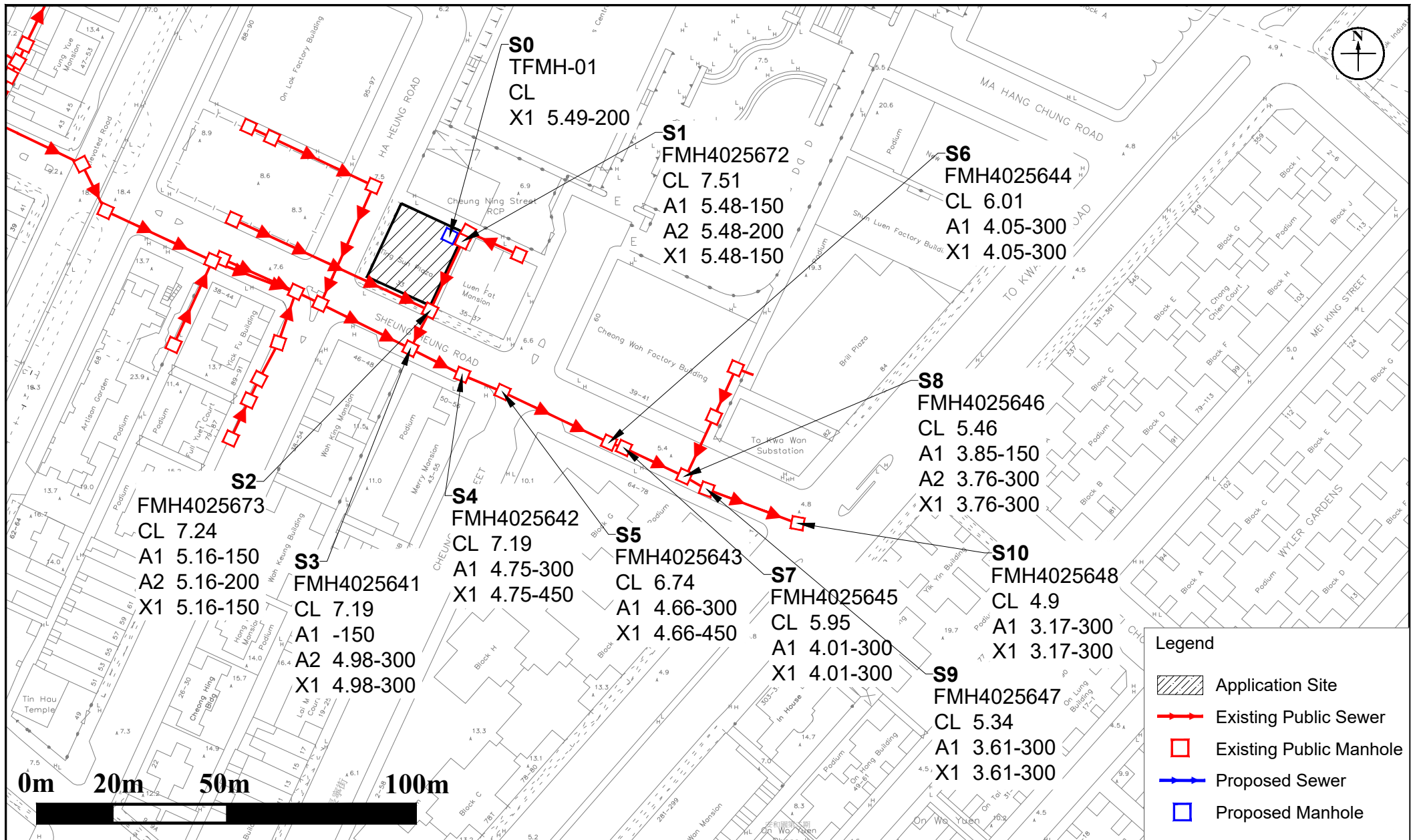


Figure: 5.1

Title: Existing Sewerage System in the Vicinity of the Application Site

Project: Proposed Residential Development at 33 Sheung heung Road, Kowloon

RAMBOLL

Drawn by: CC

Checked by: BT

Rev.: 1.0

Date: Mar 2023

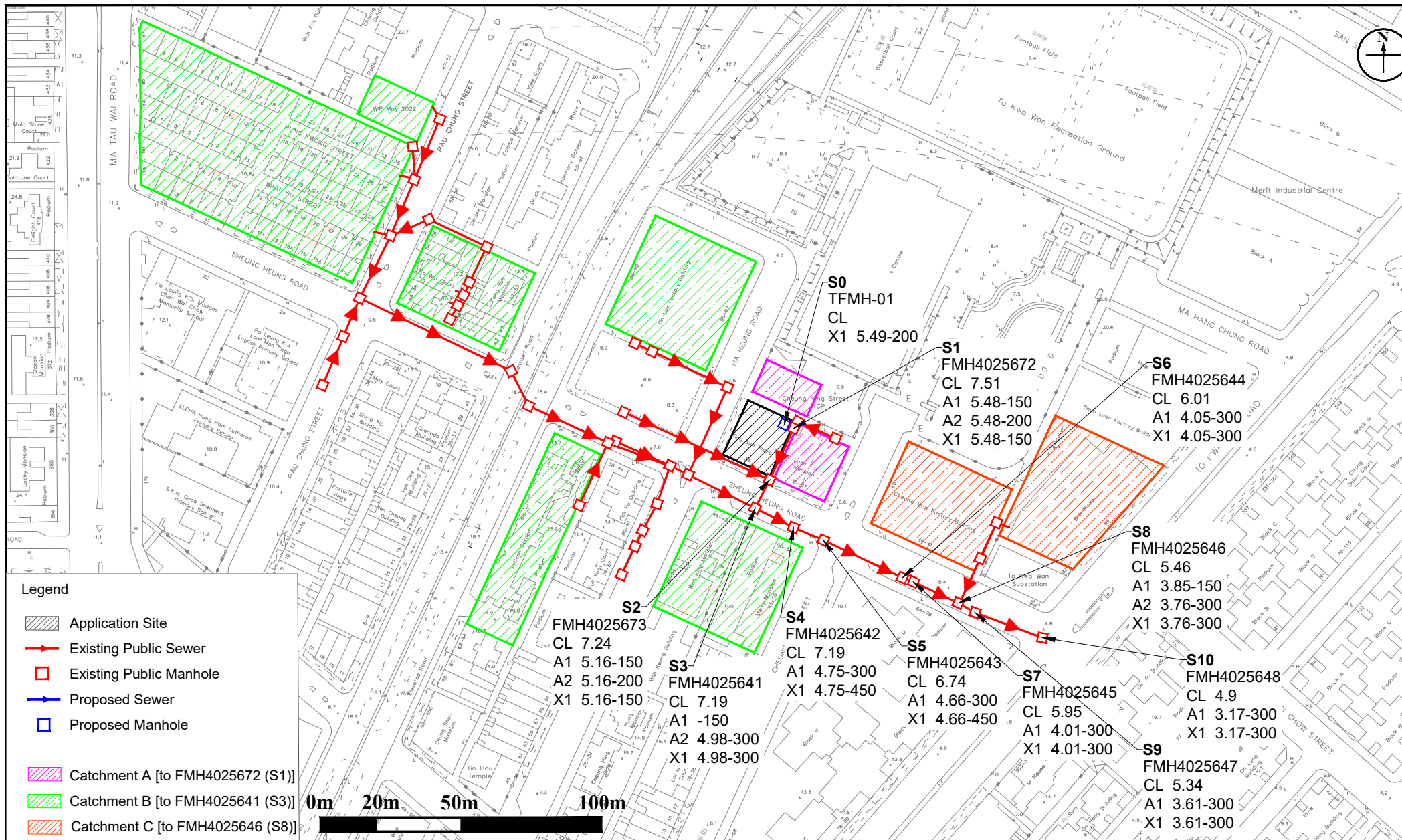


Figure: 5.2

Title: Existing Sewerage System and Catchment Area in the Vicinity of the Application Site

Project: Proposed Residential Development at 33 Sheung Heung Road, Kowloon

RAMBOLL

Drawn by: VW

Checked by: BT

Rev.: 1.1

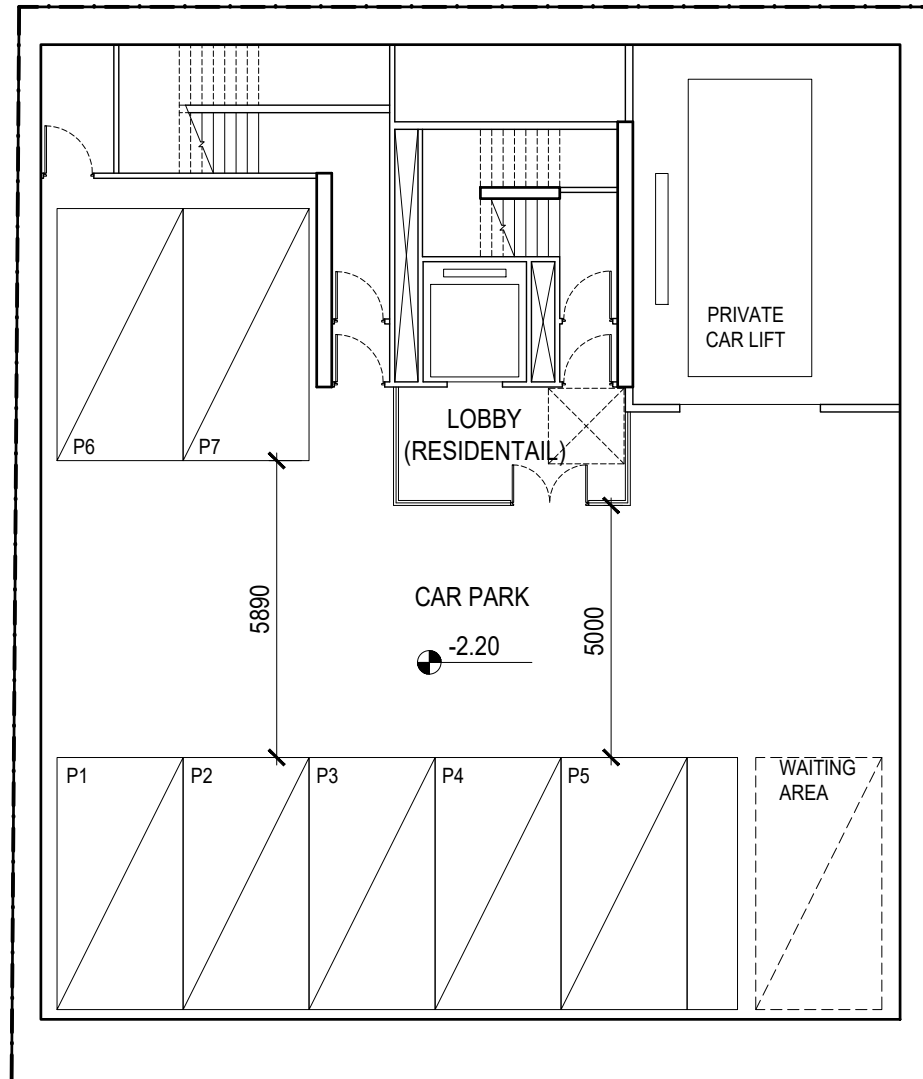
Date: Sep 2023

Appendix 1-1

Layout and Floor Plans of the Proposed Development



<p>Job Title</p> <p>PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON</p>	<p>Drawing No.</p> <p>SK001.1</p>
<p>Drawing Title</p> <p>MASTER LAYOUT PLAN</p>	<p>Scale</p> <p>1:1000@A3</p> <p>Plot Date</p> <p>20-Dec-22</p>



PRIVATE PARKING SPACES : 7 NOS.

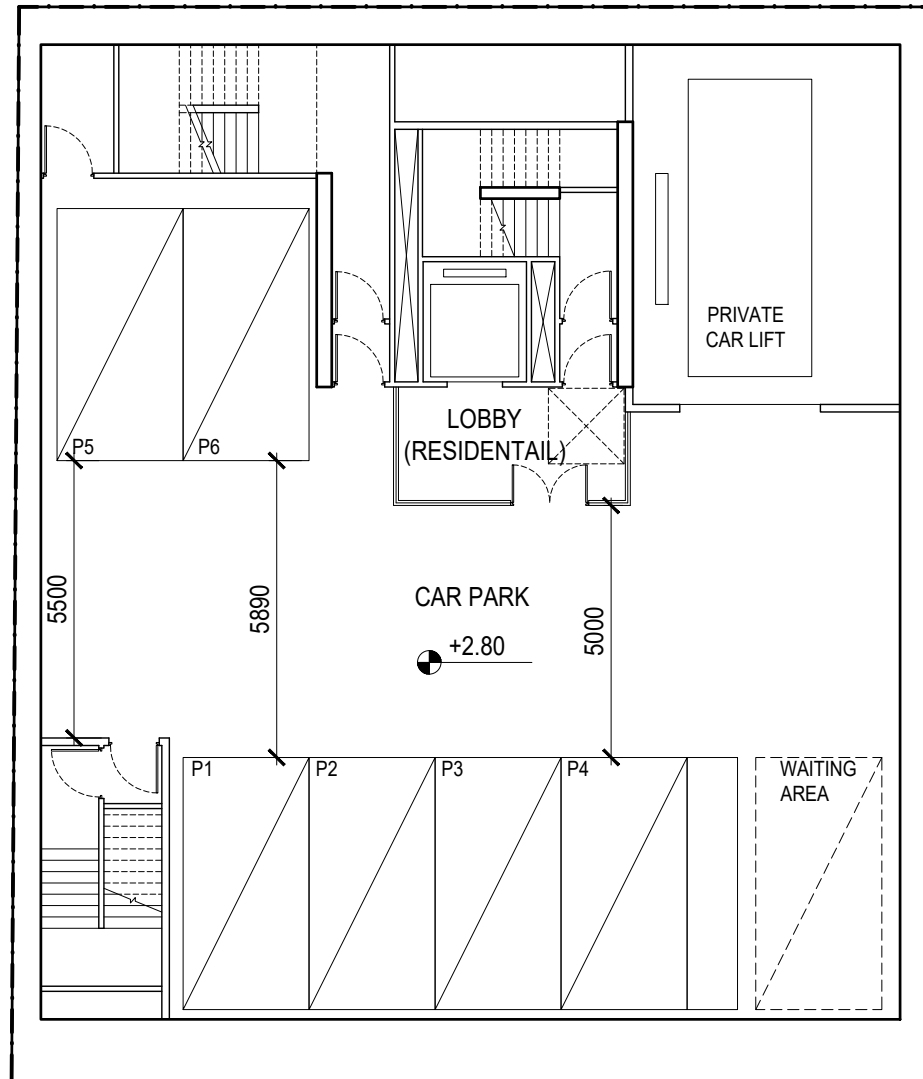
Job Title
PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON

Drawing No.
SK001.2

Drawing Title
BASEMENT 2 LAYOUT PLAN

Scale
1:150@A3

Plot Date
20-Dec-22



PRIVATE PARKING SPACES : 6 NOS.

Job Title
PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON

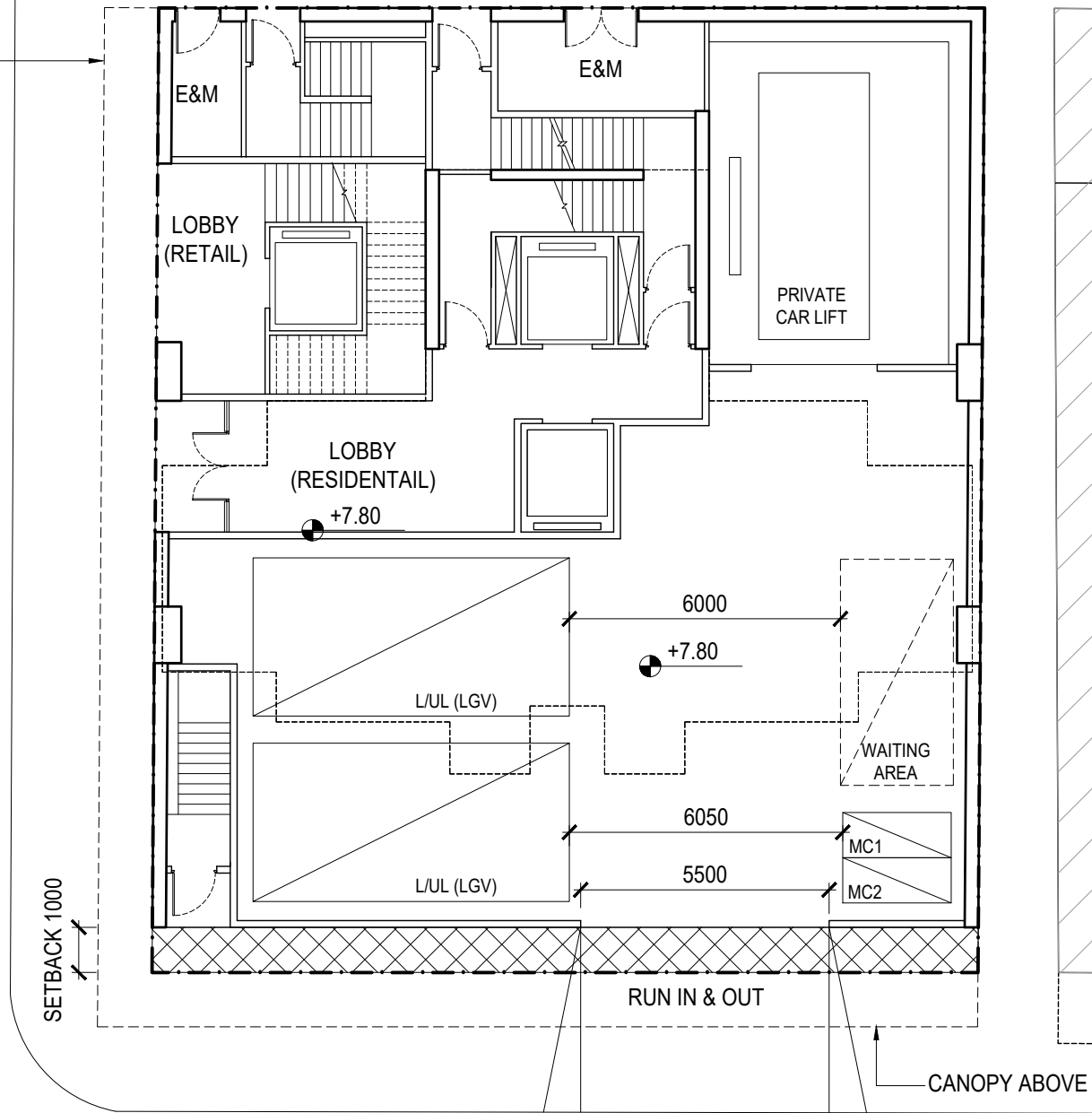
Drawing No.
SK001.3

Drawing Title
BASEMENT 1 LAYOUT PLAN

Scale
1:150@A3

Plot Date
20-Dec-22

CANOPY ABOVE



LIGHT GOODS VEHICLES: 2 NOS.
MOTORCYCLE 2 NOS.

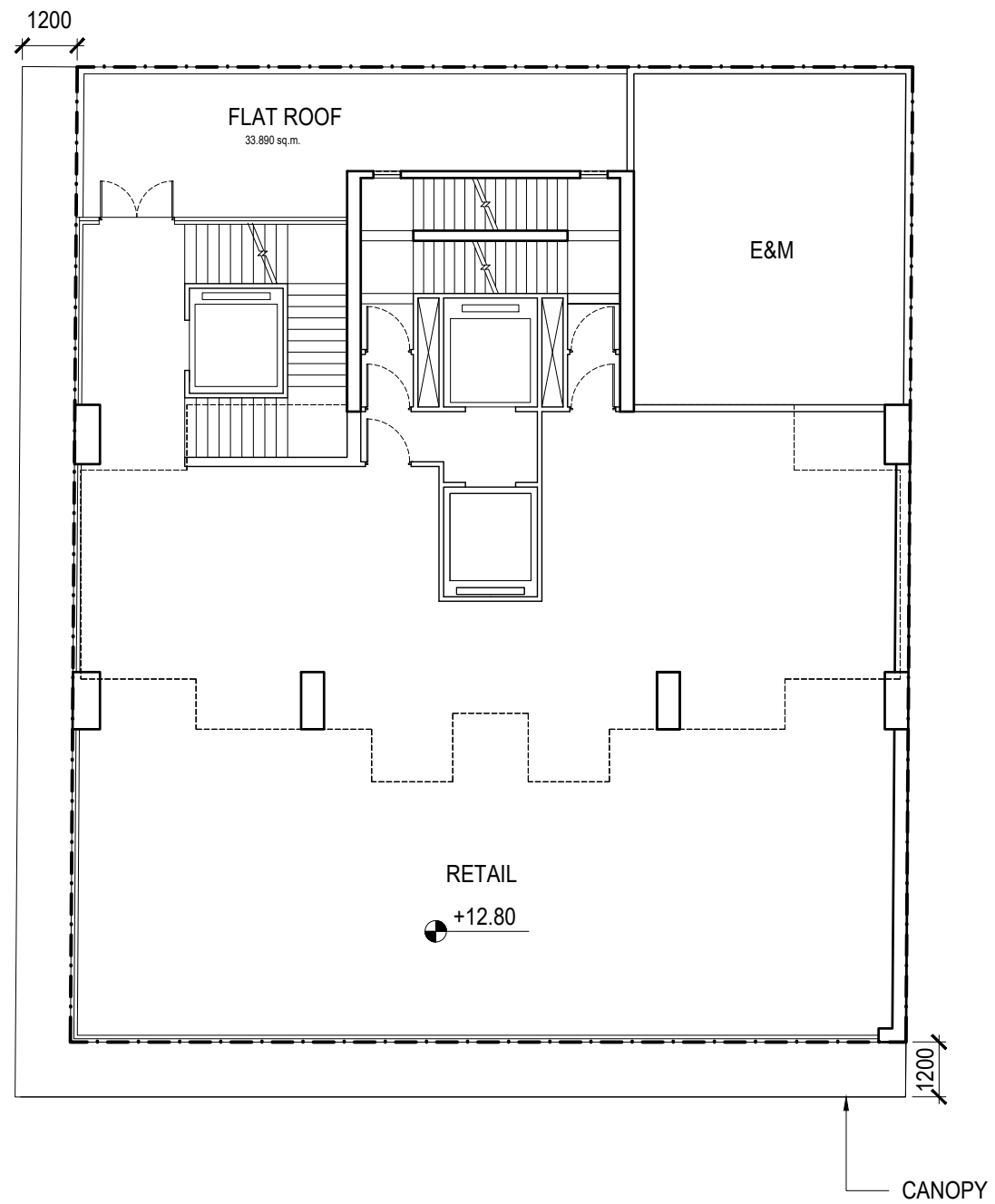
Job Title
PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON

Drawing Title
GROUND FLOOR LAYOUT PLAN

Drawing No.
SK001.4

Scale
1:150@A3

Plot Date
20-Dec-22



GROSS FLOOR AREA : 311.48 s.m.
 SITE COVERAGE : 100%
 SALEABLE FLOOR AREA : 203.324 s.m.
 PLANNING EFFICIENCY : 65.28%

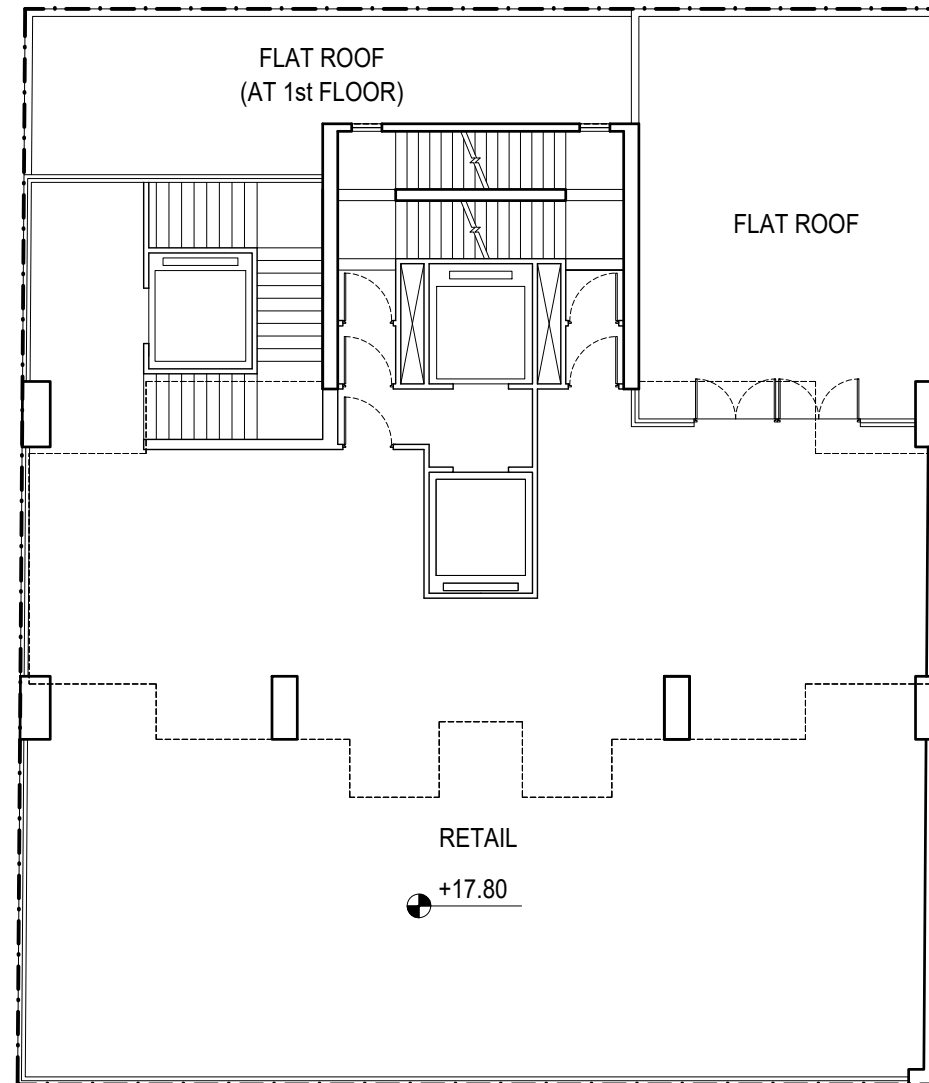
Job Title
 PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON

Drawing No.
 SK001.5

Drawing Title
 FIRST FLOOR LAYOUT PLAN

Scale
 1:150@A3

Plot Date
 20-Dec-22



GROSS FLOOR AREA : 303.67 s.m.
 SITE COVERAGE : 97.54%
 SALEABLE FLOOR AREA : 198.05 s.m.
 PLANNING EFFICIENCY : 65.22%

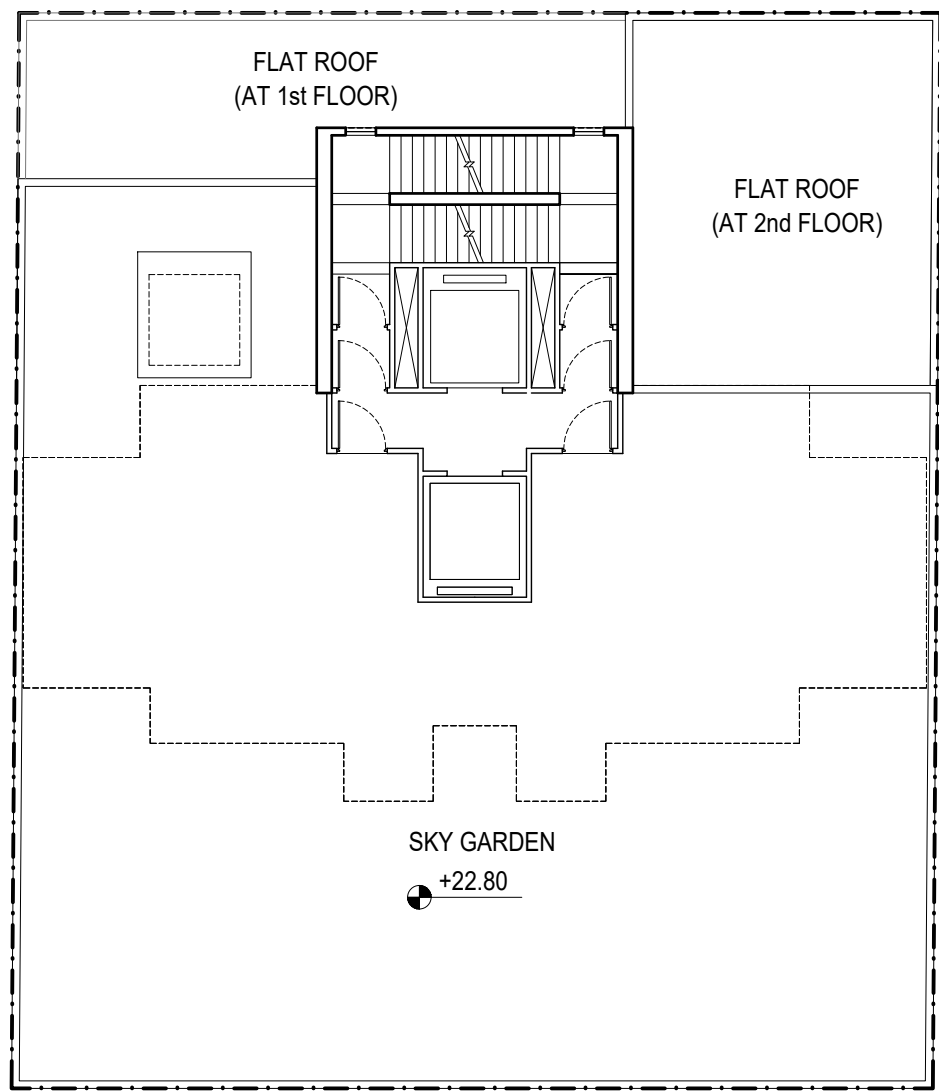
Job Title
 PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON

Drawing No.
 SK001.6

Drawing Title
 SECOND FLOOR LAYOUT PLAN

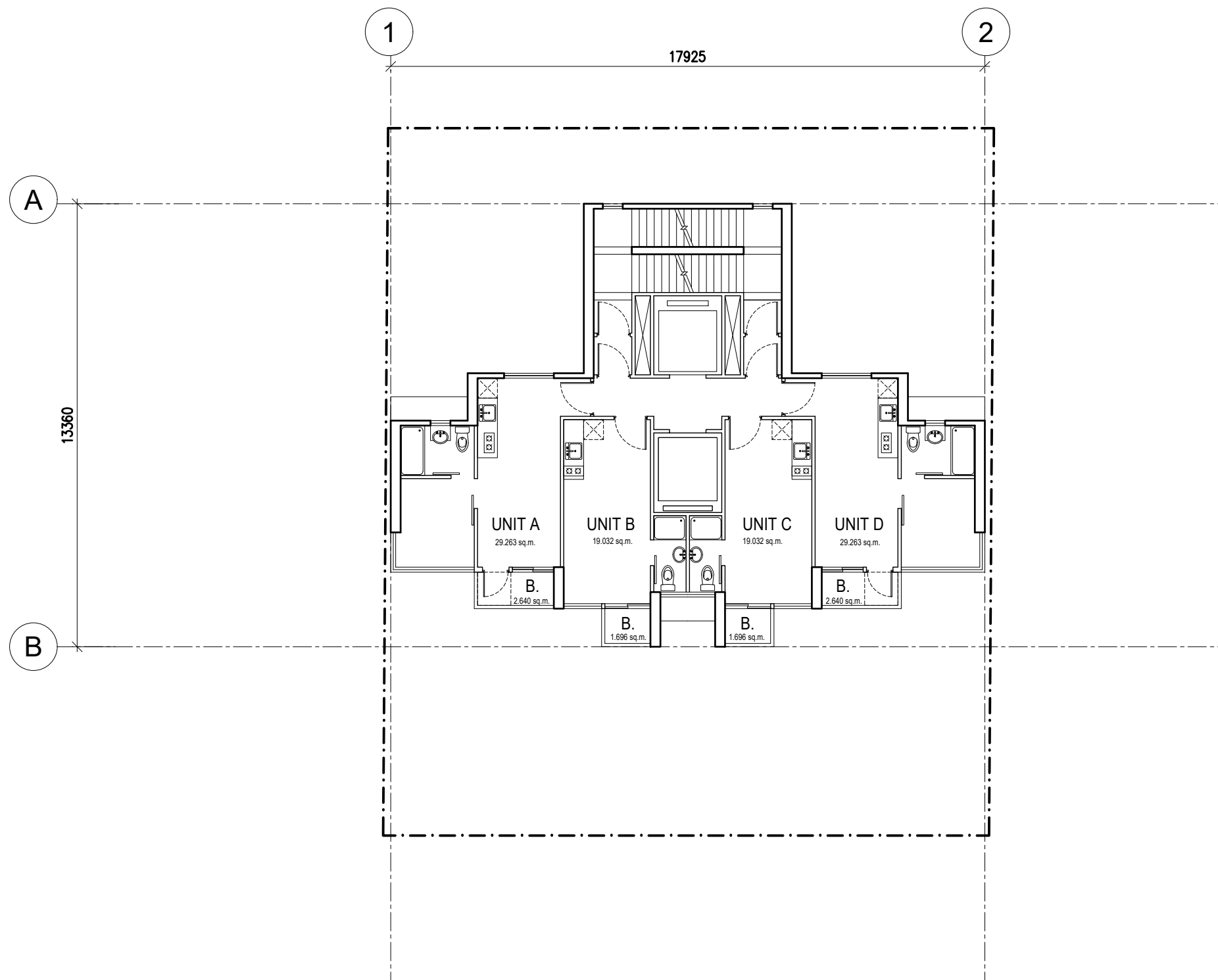
Scale
 1:150@A3

Plot Date
 20-Dec-22



GROSS FLOOR AREA : 44.49 s.m.

<p>Job Title PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON</p>	<p>Drawing No. SK001.7</p>
<p>Drawing Title THIRD FLOOR LAYOUT PLAN (SKY GARDEN)</p>	<p>Scale 1:150@A3</p>
	<p>Plot Date 20-Dec-22</p>



GROSS FLOOR AREA : 138.862 s.m.
 SITE COVERAGE : 37.5%
 SALEABLE FLOOR AREA : 105.271 s.m.
 PLANNING EFFICIENCY : 75.81%

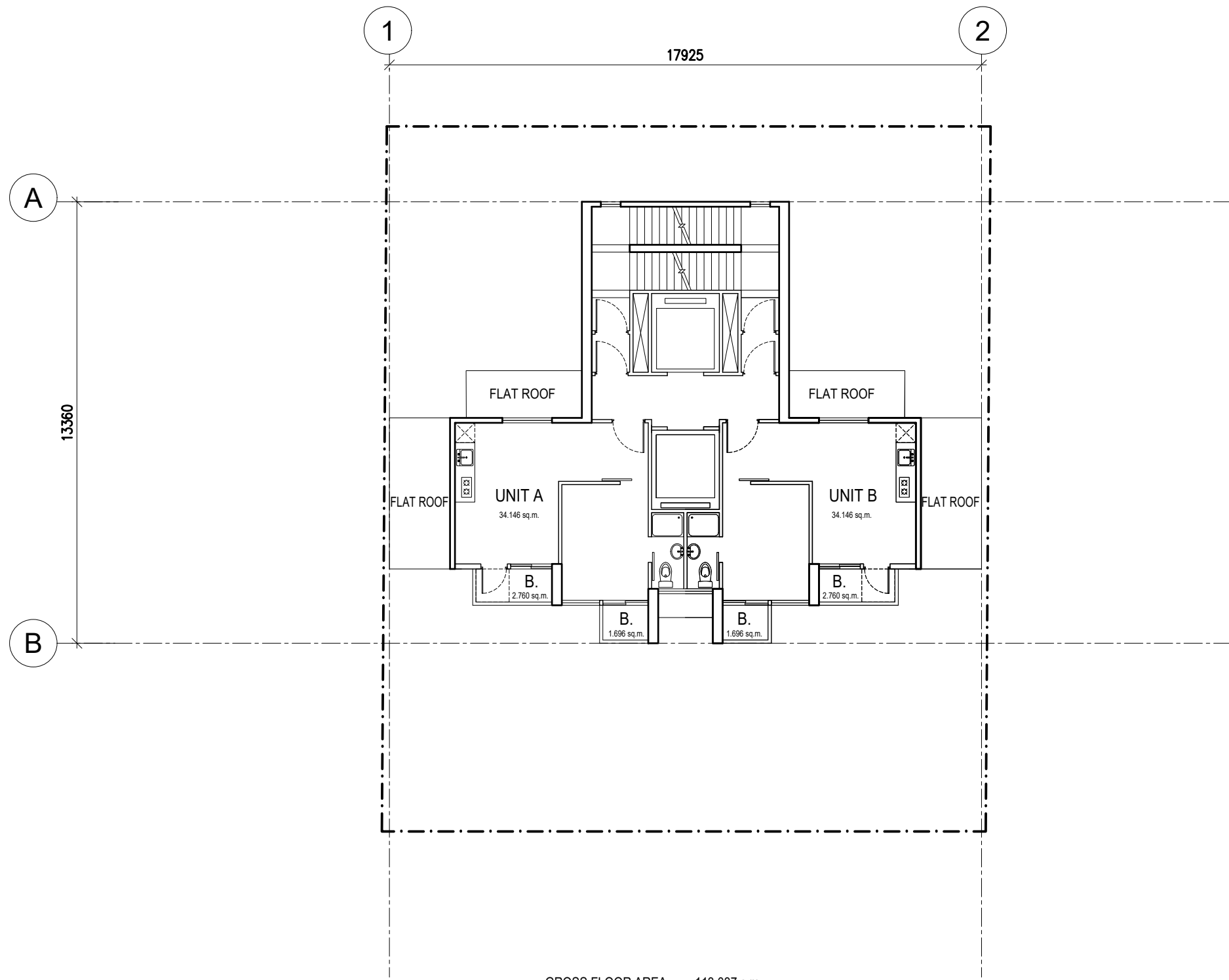
Job Title
 PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON

Drawing No.
 SK001.8

Drawing Title
 TYPICAL LAYOUT PLAN (6th - 23th FLOOR)

Scale
 1:150@A3

Plot Date
 20-Dec-22



GROSS FLOOR AREA : 113.037 s.m.
 SITE COVERAGE : 28.969%
 SALEABLE FLOOR AREA : 76.964 s.m.
 PLANNING EFFICIENCY : 68.087%

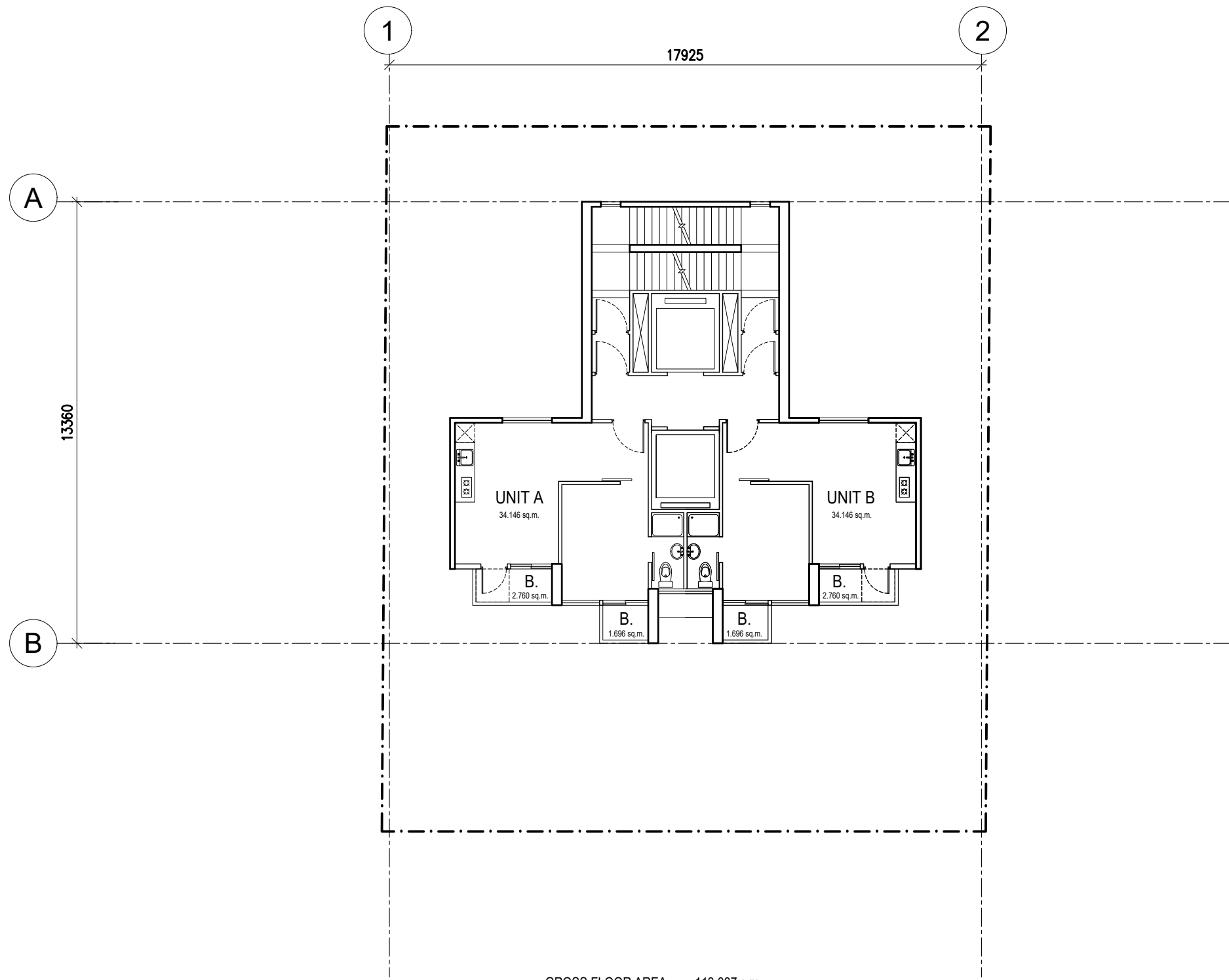
Job Title
 PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON

Drawing No.
 SK001.9

Drawing Title
 24th FLOOR LAYOUT PLAN

Scale
 1:150@A3

Plot Date
 20-Dec-22



GROSS FLOOR AREA : 113.037 s.m.
 SITE COVERAGE : 28.969%
 SALEABLE FLOOR AREA : 76.964 s.m.
 PLANNING EFFICIENCY : 68.087%

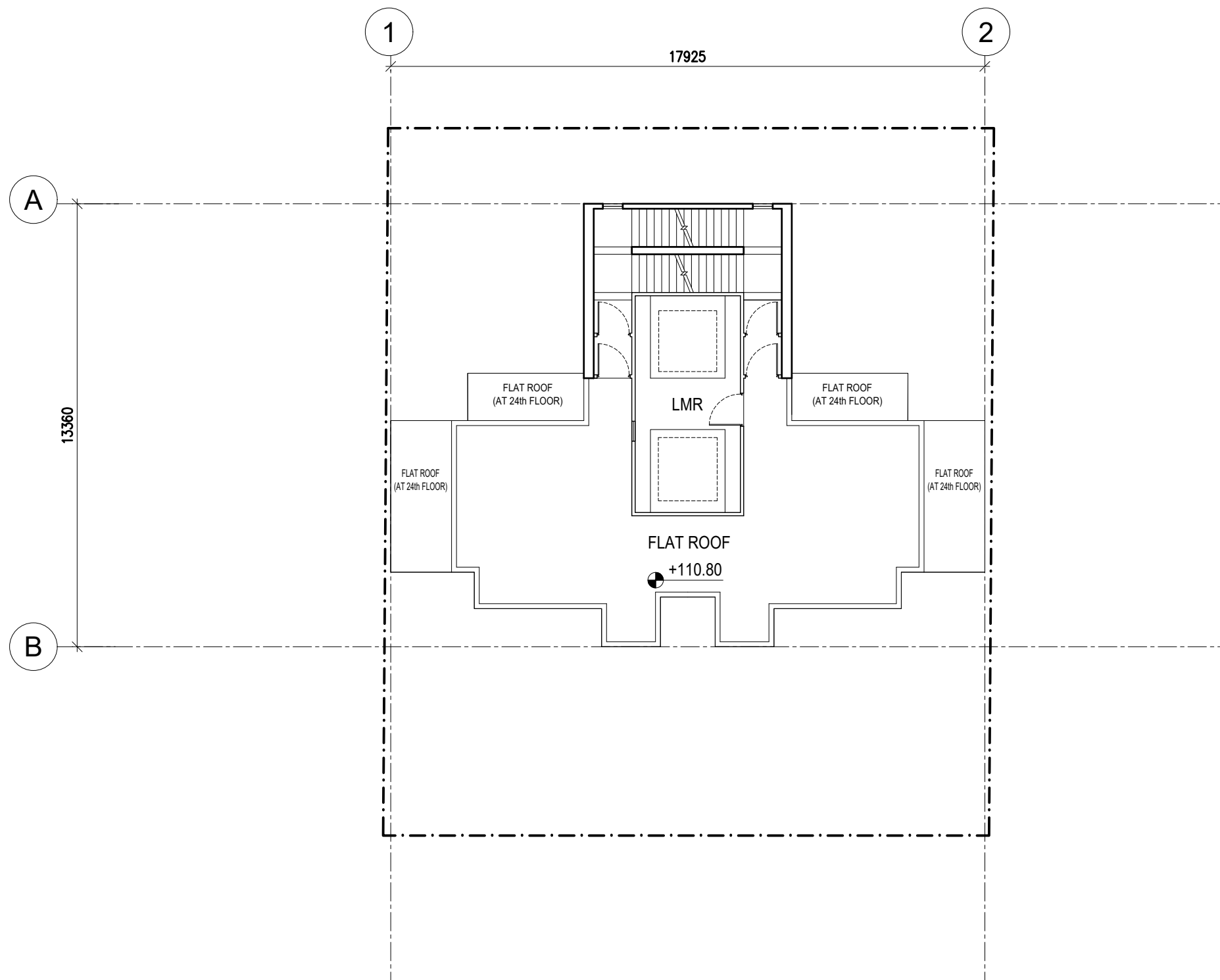
Job Title
 PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON

Drawing No.
 SK001.10

Drawing Title
 25th FLOOR LAYOUT PLAN

Scale
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Plot Date
 20-Dec-22



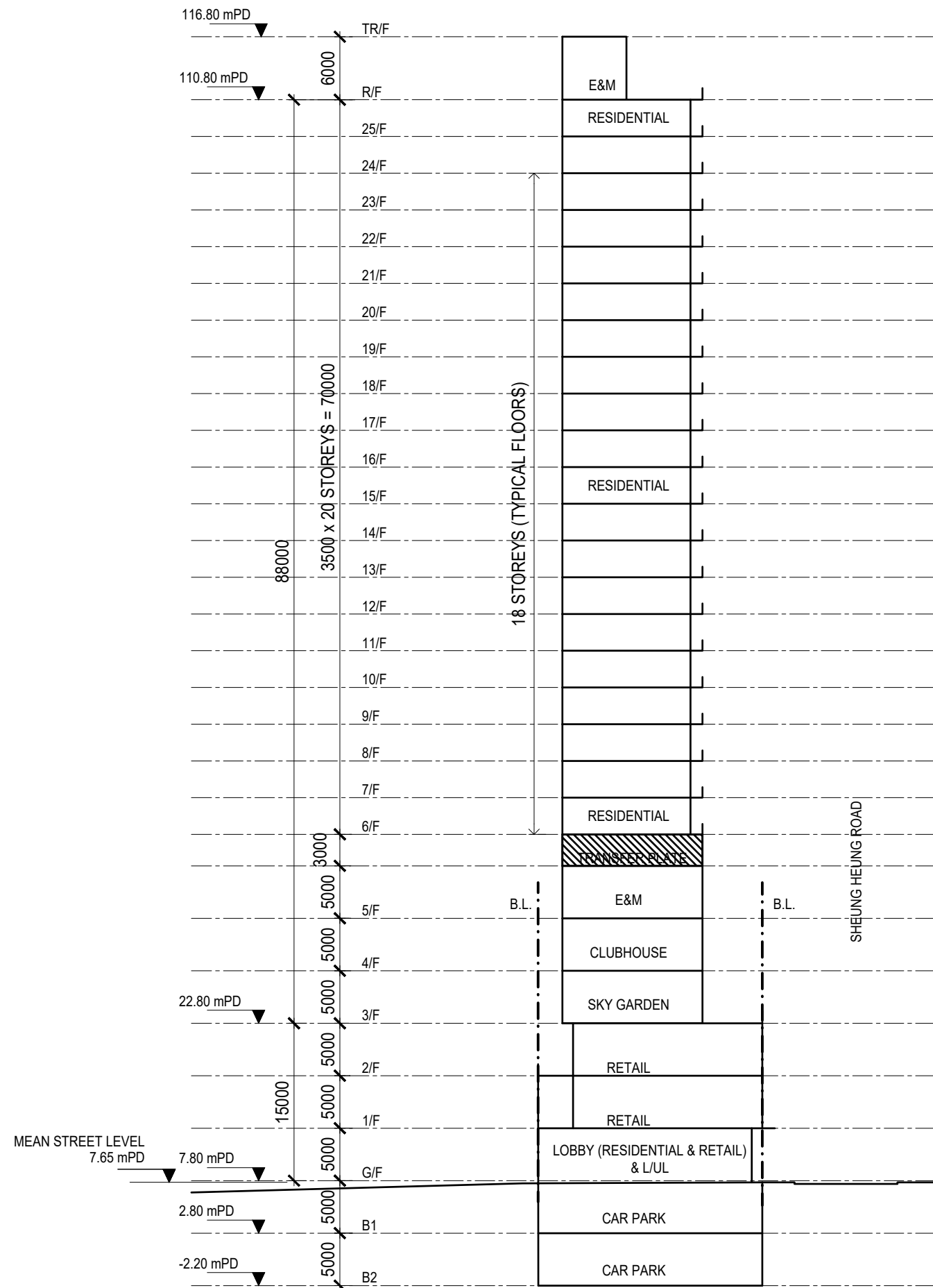
Job Title
PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON

Drawing No.
SK001.11

Drawing Title
ROOF LAYOUT PLAN

Scale
1:150@A3

Plot Date
20-Dec-22



SITE AREA	s.m.	:	390.192
CLASS OF SITE		:	B
PLOT RATIO (UNDER OZP) NOT EXCEEDING TOTAL PLOT RATIO OF 9.0 (NOT EXCEED 7.5 FOR DOMESTIC PART OF THE BUILDING)		:	
-DOMESTIC		:	7.5
-NON-DOMESTIC		:	9.0 - 7.5 = 1.5
PERMITTED GFA DOMESTIC (A)	s.m.	:	2,926.44
PERMITTED GFA NON-DOMESTIC (B)	s.m.	:	585.288
PERMITTED SITE COVERAGE	%	:	37.5
HEIGHT LIMIT(UNDER OZP)	mPD	:	120
MEAN STREET LEVEL	mPD	:	7.65
MAX. HEIGHT OF BUILDING	m.	:	112.35
TOTAL PERMITTED GFA (A+B)	s.m.	:	3,511.728

TOTAL PERMITTED PLOT RATIO : 14.820

DEVELOPMENT SUMMARY		
NO. OF STOREYS	podium :	3
	sky garden :	1
	mech./f :	1
	tower :	21
FLOOR HEIGHT (m.)	podium :	5
	sky garden :	5
	mech./f :	5
	tower :	5 & 3.5
BUILDING HEIGHT	mPD :	110.80
	m. :	103.0
DOMESTIC SITE COVERAGE	% :	37.5
TOTAL ACTUAL DOMESTIC GFA (G/F (LOBBY), 4/F-23/F)	s.m. :	2,926.44
TOTAL ACTUAL NON-DOMESTIC GFA (G/F - 1/F)	s.m. :	585.280
ACTUAL PLOT RATIO FOR DOMESTIC	:	7.5
ACTUAL PLOT RATIO FOR NON-DOMESTIC	:	1.5

Job Title
PROPOSED DEVELOPMENT AT 33 SHEUNG HEUNG ROAD, KOWLOON

Drawing No.
SK001.12

Drawing Title
DEVELOPMENT SUMMARY

Scale
1:500@A3

Date
20-Dec-22

Appendix 2-1

Traffic Forecast for Year 2042 provided by LLA

Table 2 2042 Traffic Forecast – AM Peak Hour

No.	Road	Direction	Speed Limit	2042 Project Traffic Flows (veh/hr)	Modal Split (%)											% of Heavies
					MC	PC	Taxi	Private LB	PLB	LGV	MHG	Non. Fran	SD	DD	Total	
A1-EB	Sheung Heung Road	EB	50	400	3%	48%	17%	4%	9%	13%	6%	1%	0%	0%	100%	32%
A1-WB	Sheung Heung Road	WB	50	150	9%	44%	12%	0%	1%	22%	12%	0%	0%	0%	100%	35%
A2-EB	Sheung Heung Road	EB	50	400	3%	28%	19%	2%	16%	25%	3%	4%	0%	0%	100%	51%
A2-WB	Sheung Heung Road	WB	50	100	5%	39%	15%	3%	0%	29%	5%	3%	0%	0%	100%	41%
A3-EB	Sheung Heung Road	EB	50	300	1%	39%	18%	1%	23%	11%	6%	1%	0%	0%	100%	42%
A3-WB	Sheung Heung Road	WB	50	500	1%	46%	22%	0%	21%	2%	7%	1%	0%	0%	100%	31%
A4	Sheung Heung Road	EB	50	350	1%	39%	18%	3%	18%	10%	5%	6%	0%	0%	100%	43%
A5	Sheung Heung Road	EB	50	500	6%	32%	22%	5%	8%	19%	7%	1%	0%	0%	100%	40%
B1-NB	Cheung Ning Street	NB	50	100	0%	46%	7%	11%	0%	25%	11%	0%	0%	0%	100%	46%
B1-SB	Cheung Ning Street	SB	50	100	0%	42%	8%	8%	0%	25%	17%	0%	0%	0%	100%	50%
B2	Cheung Ning Street	NB	50	250	11%	76%	6%	0%	0%	7%	0%	0%	0%	0%	100%	7%
C1	To Kwan Wan Road	NB	50	300	5%	42%	15%	4%	8%	11%	13%	2%	0%	29%	129%	68%
C2	To Kwan Wan Road	SB	50	1,000	3%	42%	29%	5%	3%	12%	6%	0%	0%	21%	121%	47%
C3	To Kwan Wan Road	NB	50	1,000	6%	41%	19%	4%	1%	13%	14%	2%	0%	37%	137%	71%
C4	To Kwan Wan Road	SB	50	1,000	4%	40%	27%	6%	3%	13%	6%	0%	0%	18%	118%	47%
C5	To Kwan Wan Road	NB	50	1,000	4%	39%	21%	4%	3%	21%	7%	1%	0%	17%	117%	53%
C6	To Kwan Wan Road	SB	50	1,000	3%	48%	27%	3%	1%	3%	13%	2%	0%	19%	119%	41%
C7	To Kwan Wan Road	NB	50	1,000	4%	37%	25%	4%	3%	21%	5%	1%	0%	10%	110%	44%
C8	To Kwan Wan Road	SB	50	1,000	3%	51%	26%	2%	0%	0%	15%	2%	0%	22%	122%	41%
C9	To Kwan Wan Road	NB	50	1,000	4%	37%	24%	4%	3%	21%	6%	1%	0%	10%	110%	45%
C10	To Kwan Wan Road	NB	50	300	4%	38%	25%	4%	2%	20%	7%	1%	0%	11%	111%	45%
C11	To Kwan Wan Road	SB	50	300	3%	47%	24%	3%	0%	10%	11%	2%	0%	13%	113%	38%
D1	Ha Heung Road	NB	50	100	13%	70%	6%	0%	0%	8%	4%	0%	0%	0%	100%	11%
D2	Ha Heung Road	NB	50	550	3%	48%	18%	2%	14%	4%	6%	5%	0%	0%	100%	31%
D3	Ha Heung Road	NB	50	300	5%	53%	18%	2%	0%	11%	7%	4%	0%	0%	100%	24%
D4	Ha Heung Road	NB	50	300	5%	53%	18%	2%	0%	11%	7%	4%	0%	0%	100%	24%
E1-EB	Ma Hang Chung Road	EB	50	100	9%	26%	5%	0%	0%	32%	29%	0%	0%	0%	100%	61%
E1-WB	Ma Hang Chung Road	WB	50	50	19%	30%	0%	0%	0%	32%	19%	0%	0%	0%	100%	51%
E2	Ma Hang Chung Road	WB	50	100	2%	33%	13%	15%	19%	10%	2%	6%	0%	4%	104%	56%
E3	Ma Hang Chung Road	WB	50	500	4%	33%	13%	15%	19%	10%	2%	5%	0%	4%	104%	55%
F1	Mei King Street	NB	50	250	0%	54%	12%	0%	0%	0%	33%	1%	0%	0%	100%	34%
F2	Mei King Street	SB	50	200	1%	41%	24%	1%	0%	29%	1%	2%	0%	0%	100%	34%
F3	Mei King Street	SB	50	100	1%	44%	42%	0%	0%	8%	1%	3%	0%	0%	100%	13%
G1	Wai King Street	SB	50	450	3%	41%	25%	3%	5%	14%	7%	1%	0%	0%	100%	31%
G3	Mei Kwong Street	NB	50	100	1%	38%	6%	0%	0%	51%	0%	4%	0%	0%	100%	55%
H1	Kwei Chow Street	WB	50	750	3%	34%	30%	5%	3%	22%	3%	0%	0%	0%	100%	33%
H2	Kwei Chow Street	WB	50	750	2%	30%	29%	4%	2%	22%	2%	9%	0%	0%	100%	39%
H3	Kwei Chow Street	WB	50	450	2%	32%	32%	5%	0%	17%	2%	11%	0%	0%	100%	34%
J1	Lok Shan Road	WB	50	200	3%	43%	19%	2%	2%	18%	13%	1%	0%	0%	100%	35%
J2	Lok Shan Road	WB	50	550	4%	34%	19%	7%	6%	22%	7%	1%	0%	0%	100%	43%
J3	Lok Shan Road	WB	50	700	6%	35%	18%	5%	8%	17%	11%	0%	0%	0%	100%	40%
J4	Lok Shan Road	WB	50	550	7%	34%	25%	2%	0%	17%	14%	0%	0%	0%	100%	33%
J5	Lok Shan Road	WB	50	400	6%	31%	8%	3%	0%	41%	3%	9%	0%	0%	100%	55%
J6	Lok Shan Road	EB	50	250	11%	43%	19%	0%	0%	22%	4%	2%	0%	0%	100%	28%
L2	San Ma Tau Street	WB	50	900	3%	38%	21%	4%	3%	25%	5%	1%	0%	0%	100%	37%
L3	San Ma Tau Street	WB	50	1,150	3%	42%	19%	3%	2%	19%	11%	1%	0%	0%	100%	37%
M1-NB	Kowloon City Road	NB	50	100	2%	49%	7%	2%	0%	29%	2%	8%	0%	0%	100%	42%
M1-SB	Kowloon City Road	SB	50	100	2%	49%	7%	2%	0%	29%	2%	8%	0%	0%	100%	42%
M2-NB	Kowloon City Road	NB	50	100	2%	49%	7%	2%	0%	29%	2%	8%	0%	0%	100%	42%
M2-SB	Kowloon City Road	SB	50	100	2%	49%	7%	2%	0%	29%	2%	8%	0%	0%	100%	42%
M3-NB	Kowloon City Road	NB	50	250	4%	44%	12%	2%	0%	30%	2%	5%	0%	0%	100%	39%
M3-SB	Kowloon City Road	SB	50	50	0%	44%	15%	0%	0%	26%	6%	9%	0%	0%	100%	41%
M4	Kowloon City Road	NB	50	600	5%	40%	17%	1%	10%	21%	3%	4%	0%	0%	100%	38%
M5	Kowloon City Road	NB	50	600	3%	42%	16%	5%	8%	24%	2%	0%	0%	2%	102%	41%
M6	Kowloon City Road	NB	50	650	3%	40%	18%	3%	9%	25%	2%	0%	0%	3%	103%	41%
N1	East Kowloon Corridor	SB	70	3,950	7%	48%	16%	1%	2%	18%	5%	2%	0%	3%	103%	32%
N2	East Kowloon Corridor	NB	70	6,750	4%	51%	20%	2%	6%	9%	6%	1%	0%	3%	103%	28%
N3	East Kowloon Corridor	WB	70	650	10%	31%	18%	2%	1%	24%	15%	0%	0%	1%	101%	42%
N4	East Kowloon Corridor	EB	70	1,400	3%	48%	27%	2%	0%	12%	6%	1%	0%	3%	103%	25%
N5	East Kowloon Corridor	SB	70	3,350	7%	51%	16%	1%	3%	17%	3%	3%	0%	4%	104%	30%
N6	East Kowloon Corridor	NB	70	6,450	4%	51%	20%	2%	6%	9%	6%	1%	0%	4%	104%	29%
N7	East Kowloon Corridor	NB	50	350	6%	48%	22%	3%	8%	13%	0%	1%	0%	0%	100%	23%
N8	East Kowloon Corridor	SB	70	4,750	6%	50%	19%	1%	2%	16%	4%	2%	0%	4%	104%	29%
P1-NB	Pau Chung Street	NB	50	150	2%	38%	16%	0%	0%	36%	6%	3%	0%	0%	100%	45%
P1-SB	Pau Chung Street	SB	50	100	5%	48%	8%	0%	0%	37%	0%	1%	0%	0%	100%	39%
P2	Pau Chung Street	NB	50	200	3%	34%	24%	2%	0%	33%	2%	2%	0%	0%	100%	39%
P3	Pau Chung Street	SB	50	150	9%	39%	16%	2%	0%	26%	3%	5%	0%	0%	100%	36%
P4	Pau Chung Street	NB	50	50	8%	46%	23%	0%	0%	23%	0%	0%	0%	0%	100%	23%
P5	Pau Chung Street	SB	50	200	5%	45%	18%	10%	12%	9%	0%	1%	0%	1%	101%	34%
Q-EB	Sze Chuen Street	EB	50	50	0%	88%	6%	0%	0%	6%	0%	0%	0%	0%	100%	6%
Q-WB	Sze Chuen Street	WB	50	50	0%	83%	0%	0%	0%	17%	0%	0%	0%	0%	100%	17%
R	Pak Tai Street	NB	50	200	6%	54%	21%	0%	0%	16%	0%	3%	0%	3%	103%	22%
S1	Ma Tau Wai Road	NB	50	650	5%	47%	25%	1%	10%	5%	5%	0%	0%	14%	114%	36%
S2	Ma Tau Wai Road	SB	50	1,500	8%	46%	19%	2%	6%	13%	6%	0%	0%	9%	109%	36%
S3	Ma Tau Wai Road	NB	50	650	5%	47%	25%	1%	10%	5%	5%	0%	0%	14%	114%	36%
S4	Ma Tau Wai Road	SB	50	1,300	8%	47%	19%	2%	6%	13%	6%	0%	0%	10%	110%	37%
S5	Ma Tau Wai Road	SB	50	1,550	6%	47%	19%	3%	7%	12%	6%	0%	0%	8%	108%	36%
T1	Maidstone Road	SB	50	200	3%	40%	11%	1%	10%	24%	6%	4%	0%	0%	100%	46%
T2	Maidstone Road	SB	50	150	9%	45%	7%	0%	15%	21%	2%	2%	0%	0%	100%	40%
U1	San Shan Road	EB	50	1,400	3%	48%	27%	2%	0%	12%	6%	1%	0%	3%	103%	25%
U2	San Shan Road	WB	50	650	10%	31%	18%	2%	1%	24%	15%	0%	0%	1%	101%	42%
U3	San Shan Road	WB	50	50	3%	55%	3%	17%	0%	21%	0%	0%	0%	0%	100%	38%
U4	San Shan Road	EB	50	50	11%	11%	11%	0%	0%	22%	11%	33%	0%	22%	122%	89%

Table 3 2042 Traffic Forecast – PM Peak Hour

No.	Road	Direction	Speed Limit	2042 Project Traffic Flows (veh/hr)	Modal Split (%)											% of Heavies
					MC	PC	Taxi	Private LB	PLB	LGV	MHG	Non. Fran	SD	DD	Total	
A1-EB	Sheung Heung Road	EB	50	400	8%	43%	22%	2%	7%	13%	6%	0%	0%	0%	100%	28%
A1-WB	Sheung Heung Road	WB	50	200	9%	55%	17%	1%	0%	11%	6%	0%	0%	0%	100%	19%
A2-EB	Sheung Heung Road	EB	50	400	3%	28%	19%	2%	16%	25%	3%	4%	0%	0%	100%	51%
A2-WB	Sheung Heung Road	WB	50	100	5%	39%	15%	3%	0%	29%	5%	3%	0%	0%	100%	41%
A3-EB	Sheung Heung Road	EB	50	250	1%	39%	18%	1%	23%	11%	6%	1%	0%	0%	100%	42%
A3-WB	Sheung Heung Road	WB	50	550	1%	46%	22%	0%	21%	2%	7%	1%	0%	0%	100%	31%
A4	Sheung Heung Road	EB	50	350	1%	39%	18%	3%	18%	10%	5%	6%	0%	0%	100%	43%
A5	Sheung Heung Road	EB	50	500	8%	34%	28%	1%	8%	12%	9%	1%	0%	0%	100%	31%
B1-NB	Cheung Ning Street	NB	50	50	0%	42%	12%	0%	0%	31%	15%	0%	0%	0%	100%	46%
B1-SB	Cheung Ning Street	SB	50	50	8%	31%	12%	4%	0%	35%	12%	0%	0%	0%	100%	50%
B2	Cheung Ning Street	NB	50	200	11%	76%	6%	0%	0%	7%	0%	0%	0%	0%	100%	7%
C1	To Kwan Wan Road	NB	50	350	6%	45%	18%	2%	8%	15%	6%	0%	0%	22%	122%	53%
C2	To Kwan Wan Road	SB	50	850	6%	40%	28%	1%	4%	14%	8%	0%	0%	13%	113%	40%
C3	To Kwan Wan Road	NB	50	850	9%	51%	13%	2%	0%	17%	7%	0%	0%	30%	130%	56%
C4	To Kwan Wan Road	SB	50	850	6%	40%	28%	1%	4%	14%	7%	0%	0%	12%	112%	38%
C5	To Kwan Wan Road	NB	50	850	9%	42%	24%	1%	2%	18%	3%	0%	0%	13%	113%	37%
C6	To Kwan Wan Road	SB	50	850	7%	54%	24%	1%	0%	3%	11%	1%	0%	14%	114%	30%
C7	To Kwan Wan Road	NB	50	850	9%	43%	25%	1%	2%	18%	2%	0%	0%	8%	108%	32%
C8	To Kwan Wan Road	SB	50	850	6%	58%	20%	1%	0%	1%	13%	1%	0%	17%	117%	32%
C9	To Kwan Wan Road	NB	50	850	9%	43%	24%	1%	2%	18%	3%	0%	0%	8%	108%	32%
C10	To Kwan Wan Road	NB	50	350	9%	45%	24%	1%	1%	17%	3%	0%	0%	10%	110%	33%
C11	To Kwan Wan Road	SB	50	350	6%	51%	23%	1%	0%	8%	10%	1%	0%	10%	110%	30%
D1	Ha Heung Road	NB	50	100	13%	70%	6%	0%	0%	8%	4%	0%	0%	0%	100%	11%
D2	Ha Heung Road	NB	50	550	3%	48%	18%	2%	14%	4%	6%	5%	0%	0%	100%	31%
D3	Ha Heung Road	NB	50	300	5%	53%	18%	2%	0%	11%	7%	4%	0%	0%	100%	24%
D4	Ha Heung Road	NB	50	300	5%	53%	18%	2%	0%	11%	7%	4%	0%	0%	100%	24%
E1-EB	Ma Hang Chung Road	EB	50	150	7%	54%	2%	1%	0%	24%	12%	0%	0%	0%	100%	37%
E1-WB	Ma Hang Chung Road	WB	50	100	13%	50%	4%	2%	0%	27%	5%	0%	0%	0%	100%	34%
E2	Ma Hang Chung Road	WB	50	100	8%	43%	16%	10%	12%	8%	0%	2%	0%	2%	102%	35%
E3	Ma Hang Chung Road	WB	50	400	5%	44%	17%	10%	13%	8%	0%	3%	0%	2%	102%	37%
F1	Mei King Street	NB	50	300	6%	62%	3%	2%	0%	0%	28%	0%	0%	0%	100%	29%
F2	Mei King Street	SB	50	250	1%	41%	24%	1%	0%	29%	1%	2%	0%	0%	100%	34%
F3	Mei King Street	SB	50	100	1%	44%	42%	0%	0%	8%	1%	3%	0%	0%	100%	13%
G1	Wai King Street	SB	50	550	6%	48%	27%	2%	3%	9%	3%	0%	0%	0%	100%	18%
G3	Mei Kwong Street	NB	50	100	1%	38%	6%	0%	0%	51%	0%	4%	0%	0%	100%	55%
H1	Kwei Chow Street	WB	50	800	9%	40%	30%	1%	2%	16%	1%	0%	0%	0%	100%	21%
H2	Kwei Chow Street	WB	50	750	2%	30%	29%	4%	2%	22%	2%	9%	0%	0%	100%	39%
H3	Kwei Chow Street	WB	50	550	3%	33%	30%	5%	0%	17%	2%	10%	0%	0%	100%	34%
J1	Lok Shan Road	WB	50	300	9%	49%	19%	0%	0%	16%	7%	0%	0%	0%	100%	23%
J2	Lok Shan Road	WB	50	700	8%	37%	23%	0%	6%	20%	5%	0%	0%	0%	100%	32%
J3	Lok Shan Road	WB	50	850	8%	39%	23%	0%	7%	16%	7%	0%	0%	0%	100%	30%
J4	Lok Shan Road	WB	50	650	12%	41%	20%	0%	0%	18%	9%	0%	0%	0%	100%	27%
J5	Lok Shan Road	WB	50	400	6%	31%	8%	3%	0%	41%	3%	9%	0%	0%	100%	55%
J6	Lok Shan Road	EB	50	400	11%	43%	19%	0%	0%	22%	4%	2%	0%	0%	100%	28%
L2	San Ma Tau Street	WB	50	1,000	6%	39%	27%	2%	2%	20%	4%	0%	0%	0%	100%	28%
L3	San Ma Tau Street	WB	50	1,250	6%	44%	22%	2%	1%	16%	9%	0%	0%	0%	100%	28%
M1-NB	Kowloon City Road	NB	50	100	2%	49%	7%	2%	0%	29%	2%	8%	0%	0%	100%	42%
M1-SB	Kowloon City Road	SB	50	100	2%	49%	7%	2%	0%	29%	2%	8%	0%	0%	100%	42%
M2-NB	Kowloon City Road	NB	50	100	2%	49%	7%	2%	0%	29%	2%	8%	0%	0%	100%	42%
M2-SB	Kowloon City Road	SB	50	100	2%	49%	7%	2%	0%	29%	2%	8%	0%	0%	100%	42%
M3-NB	Kowloon City Road	NB	50	250	4%	44%	12%	2%	0%	30%	2%	5%	0%	0%	100%	39%
M3-SB	Kowloon City Road	SB	50	50	0%	44%	15%	0%	0%	26%	6%	9%	0%	0%	100%	41%
M4	Kowloon City Road	NB	50	600	5%	40%	17%	1%	10%	21%	3%	4%	0%	0%	100%	38%
M5	Kowloon City Road	NB	50	700	13%	56%	10%	1%	3%	16%	1%	0%	0%	0%	100%	21%
M6	Kowloon City Road	NB	50	800	13%	55%	10%	1%	4%	17%	1%	0%	0%	0%	100%	22%
N1	East Kowloon Corridor	SB	70	3,550	8%	61%	16%	1%	1%	11%	2%	1%	0%	4%	104%	19%
N2	East Kowloon Corridor	NB	70	7,250	7%	55%	18%	1%	2%	12%	4%	1%	0%	2%	102%	22%
N3	East Kowloon Corridor	WB	70	450	12%	48%	10%	1%	0%	20%	8%	0%	0%	1%	101%	31%
N4	East Kowloon Corridor	EB	70	1,450	5%	55%	20%	1%	0%	10%	8%	1%	0%	3%	103%	23%
N5	East Kowloon Corridor	SB	70	3,100	7%	62%	17%	0%	1%	10%	1%	1%	0%	4%	104%	17%
N6	East Kowloon Corridor	NB	70	6,850	7%	54%	18%	1%	2%	12%	5%	1%	0%	2%	102%	22%
N7	East Kowloon Corridor	NB	50	450	10%	56%	18%	1%	2%	11%	1%	0%	0%	0%	100%	15%
N8	East Kowloon Corridor	SB	70	4,550	7%	60%	18%	0%	1%	10%	3%	1%	0%	4%	104%	19%
P1-NB	Pau Chung Street	NB	50	150	2%	38%	16%	0%	0%	36%	6%	3%	0%	0%	100%	45%
P1-SB	Pau Chung Street	SB	50	100	5%	48%	8%	0%	0%	37%	0%	1%	0%	0%	100%	39%
P2	Pau Chung Street	NB	50	250	3%	34%	24%	2%	0%	33%	2%	2%	0%	0%	100%	39%
P3	Pau Chung Street	SB	50	150	9%	39%	16%	2%	0%	26%	3%	5%	0%	0%	100%	36%
P4	Pau Chung Street	NB	50	200	6%	51%	20%	0%	0%	18%	4%	1%	0%	1%	101%	24%
P5	Pau Chung Street	SB	50	200	8%	46%	23%	8%	8%	8%	0%	0%	0%	0%	100%	23%
Q-EB	Sze Chuen Street	EB	50	50	0%	88%	6%	0%	0%	6%	0%	0%	0%	0%	100%	6%
Q-WB	Sze Chuen Street	WB	50	50	0%	83%	0%	0%	0%	17%	0%	0%	0%	0%	100%	17%
R	Pak Tai Street	NB	50	150	5%	50%	19%	0%	0%	25%	0%	1%	0%	1%	101%	27%
S1	Ma Tau Wai Road	NB	50	900	7%	50%	20%	2%	6%	8%	6%	0%	0%	0%	117%	40%
S2	Ma Tau Wai Road	SB	50	1,300	9%	48%	18%	1%	4%	15%	5%	1%	0%	11%	111%	37%
S3	Ma Tau Wai Road	NB	50	900	7%	50%	20%	2%	6%	8%	6%	0%	0%	17%	117%	40%
S4	Ma Tau Wai Road	SB	50	1,000	9%	48%	17%	1%	5%	14%	5%	1%	0%	12%	112%	37%
S5	Ma Tau Wai Road	SB	50	1,150	8%	45%	19%	1%	6%	14%	5%	1%	0%	9%	109%	37%
T1	Maidstone Road	SB	50	200	3%	40%	11%	1%	10%	24%	6%	4%	0%	0%	100%	46%
T2	Maidstone Road	SB	50	150	9%	45%	7%	0%	15%	21%	2%	2%	0%	0%	100%	40%
U1	San Shan Road	EB	50	1,450	5%	55%	20%	1%	0%	10%	8%	1%	0%	3%	103%	23%
U2	San Shan Road	WB	50	450	12%	48%	10%	1%	0%	20%	8%	0%	0%	1%	101%	31%
U3	San Shan Road	WB	50	100	13%	60%	11%	1%	1%	12%	1%	0%	0%	0%	100%	16%
U4	San Shan Road	EB	50	50	14%	50%	21%	0%	0%	14%	0%	0%	0%	0%	100%	14%

Appendix 2-2

Result of Road Traffic Noise Impact Assessment (Base and Mitigated Scenarios)

Predicted Road Traffic Noise at Selected Sensitive Receivers (Base Case - AM)

Floor	mPD	TYP_N01	TYP_N02	TYP_N03	TYP_N04	TYP_N05	TYP_N06	TYP_N07	TYP_N08	TYP_N09	TYP_N10	TYP_N11	TYP_N12	TYP_N13	TYP_N14
Noise Criteria dB(A)		70													
6/F	42	72.6	68.1	64.8	60.3	57.1	59.1	70.8	65.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
7/F	45.5	74.1	73.0	72.4	67.5	61.7	63.7	74.2	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
8/F	49	74.4	73.3	73.0	69.4	64.7	67.3	74.1	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
9/F	52.5	74.4	73.5	73.3	70.1	66.2	68.5	74.1	68.7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/F	56	74.4	73.6	73.4	70.5	67.0	69.0	74.0	68.7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/F	59.5	74.3	73.6	73.5	70.8	67.5	69.3	73.9	68.7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
12/F	63	74.3	73.6	73.6	71.0	68.0	69.7	73.9	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
13/F	66.5	74.3	73.6	73.7	71.2	68.5	70.0	73.9	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
14/F	70	74.2	73.6	73.7	71.4	68.8	70.2	73.9	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
15/F	73.5	74.2	73.6	73.8	71.5	69.1	70.4	74.0	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
16/F	77	74.1	73.6	73.7	71.5	69.3	70.5	74.0	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
17/F	80.5	74.1	73.6	73.7	71.5	69.5	70.6	74.0	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
18/F	84	74.0	73.5	73.6	71.5	69.5	70.6	74.0	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
19/F	87.5	74.0	73.4	73.6	71.5	69.6	70.6	74.0	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
20/F	91	73.9	73.4	73.5	71.5	69.6	70.7	74.1	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
21/F	94.5	73.8	73.3	73.4	71.5	69.7	70.7	74.1	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
22/F	98	73.8	73.2	73.4	71.5	69.7	70.7	74.1	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
23/F	101.5	73.7	73.2	73.4	71.5	69.8	70.8	74.0	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
24/F	105	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	73.4	73.3	71.5	70.3	64.9	70.6
25/F	108.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	73.4	73.3	71.5	70.4	66.6	72.8
No. of Exceedance		18	17	17	13	0	7	18	0	2	2	2	0	0	2

Total no. of units:	156
Total no. of Exceedances:	90
Predicted Max. Noise Level:	74.4
Percentage of Compliance:	42%

Noted:

70 Noise level exceed standard of 70 dB(A)

Predicted Road Traffic Noise at Selected Sensitive Receivers (Mitigated Case)

Floor	mPD	TYP_N01	TYP_N02	TYP_N03	TYP_N04	TYP_N05	TYP_N06	TYP_N07	TYP_N08	TYP_N09	TYP_N10	TYP_N11	TYP_N12	TYP_N13	TYP_N14
Noise Criteria dB(A)		70													
6/F	42	68.3	68.1	64.8	60.3	57.1	59.1	FG	65.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
7/F	45.5	69.8	68.2	67.8	67.5	61.7	63.7	FG	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
8/F	49	70.1	68.5	68.4	69.4	64.7	67.3	FG	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
9/F	52.5	70.1	68.7	68.7	70.1	66.2	68.5	FG	68.7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/F	56	70.1	68.8	68.8	65.9	67.0	69.0	FG	68.7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/F	59.5	70.0	68.8	68.9	66.2	67.5	69.3	FG	68.7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
12/F	63	70.0	68.8	69.0	66.4	68.0	69.7	FG	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
13/F	66.5	70.0	68.8	69.1	66.6	68.5	70.0	FG	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
14/F	70	69.9	68.8	69.1	66.8	68.8	70.2	FG	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
15/F	73.5	69.9	68.8	69.2	66.9	69.1	70.4	FG	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
16/F	77	69.8	68.8	69.1	66.9	69.3	66.2	FG	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
17/F	80.5	69.8	68.8	69.1	66.9	69.5	66.3	FG	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
18/F	84	69.7	68.7	69.0	66.9	69.5	66.3	FG	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
19/F	87.5	69.7	68.6	69.0	66.9	69.6	66.3	FG	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
20/F	91	69.6	68.6	68.9	66.9	69.6	66.4	FG	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
21/F	94.5	69.5	68.5	68.8	66.9	69.7	66.4	FG	68.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
22/F	98	69.5	68.4	68.8	66.9	69.7	66.4	FG	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
23/F	101.5	69.4	68.4	68.8	66.9	69.8	66.5	FG	68.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
24/F	105	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	67.8	67.7	68.9	70.3	64.9	FG
25/F	108.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	67.8	67.7	68.9	70.4	66.6	FG
No. of Exceedance		0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maximum Noise Level	70
Total No. Exceedances	0
Total No. of Units	156
Percentage of Compliance	100%

Noted:

- Acoustic Window
- Acoustic Door
- FG Fixed Glazing (with or without maintenance window)

Predicted Road Traffic Noise at Selected Sensitive Receivers (Base Case - PM)

Floor	mPD	TYP_N01	TYP_N02	TYP_N03	TYP_N04	TYP_N05	TYP_N06	TYP_N07	TYP_N08	TYP_N09	TYP_N10	TYP_N11	TYP_N12	TYP_N13	TYP_N14
Noise Criteria dB(A)		70													
6/F	42	71.8	67.3	64.0	59.6	56.3	58.2	69.8	64.2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
7/F	45.5	73.4	72.2	71.5	66.7	60.9	62.9	73.2	67.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
8/F	49	73.7	72.5	72.2	68.7	64.0	66.6	73.2	67.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
9/F	52.5	73.8	72.8	72.5	69.5	65.6	67.9	73.1	67.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/F	56	73.8	72.9	72.7	69.9	66.4	68.4	73.1	67.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/F	59.5	73.7	72.9	72.8	70.2	67.0	68.8	73.0	67.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
12/F	63	73.7	73.0	72.9	70.4	67.5	69.1	73.0	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
13/F	66.5	73.6	73.0	73.0	70.6	68.0	69.4	72.9	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
14/F	70	73.6	73.0	73.1	70.8	68.3	69.6	72.9	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
15/F	73.5	73.5	73.0	73.1	70.9	68.6	69.8	73.1	67.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
16/F	77	73.5	73.0	73.1	70.9	68.8	69.9	73.1	67.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
17/F	80.5	73.4	73.0	73.0	71.0	69.0	70.0	73.1	67.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
18/F	84	73.4	72.9	73.0	70.9	69.0	70.0	73.1	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
19/F	87.5	73.3	72.8	72.9	70.9	69.1	70.1	73.1	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
20/F	91	73.2	72.7	72.9	70.9	69.1	70.1	73.2	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
21/F	94.5	73.1	72.7	72.8	70.9	69.2	70.1	73.2	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
22/F	98	73.1	72.6	72.8	70.9	69.2	70.1	73.2	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
23/F	101.5	73.0	72.6	72.7	70.9	69.3	70.2	73.1	67.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
24/F	105	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	72.8	72.6	70.9	69.7	63.9	69.6
25/F	108.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	72.8	72.6	70.9	69.8	65.4	71.9
No. of Exceedance		18	17	17	11	0	0	17	0	2	2	2	0	0	1

Total no. of units:	156
Total no. of Exceedances:	80
Predicted Max. Noise Level:	73.8
Percentage of Compliance:	49%

Noted:

 Noise level exceed standard of 70 dB(A)

Predicted Road Traffic Noise at Selected Sensitive Receivers (Mitigated Case)

Floor	mPD	TYP_N01	TYP_N02	TYP_N03	TYP_N04	TYP_N05	TYP_N06	TYP_N07	TYP_N08	TYP_N09	TYP_N10	TYP_N11	TYP_N12	TYP_N13	TYP_N14
Noise Criteria dB(A)		70													
6/F	42	67.5	67.3	64.0	59.6	56.3	58.2	FG	64.2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
7/F	45.5	69.1	67.4	66.9	66.7	60.9	62.9	FG	67.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
8/F	49	69.4	67.7	67.6	68.7	64.0	66.6	FG	67.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
9/F	52.5	69.5	68.0	67.9	69.5	65.6	67.9	FG	67.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/F	56	69.5	68.1	68.1	65.3	66.4	68.4	FG	67.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/F	59.5	69.4	68.1	68.2	65.6	67.0	68.8	FG	67.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
12/F	63	69.4	68.2	68.3	65.8	67.5	69.1	FG	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
13/F	66.5	69.3	68.2	68.4	66.0	68.0	69.4	FG	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
14/F	70	69.3	68.2	68.5	66.2	68.3	69.6	FG	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
15/F	73.5	69.2	68.2	68.5	66.3	68.6	69.8	FG	67.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
16/F	77	69.2	68.2	68.5	66.3	68.8	65.6	FG	67.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
17/F	80.5	69.1	68.2	68.4	66.4	69.0	65.7	FG	67.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
18/F	84	69.1	68.1	68.4	66.3	69.0	65.7	FG	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
19/F	87.5	69.0	68.0	68.3	66.3	69.1	65.8	FG	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
20/F	91	68.9	67.9	68.3	66.3	69.1	65.8	FG	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
21/F	94.5	68.8	67.9	68.2	66.3	69.2	65.8	FG	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
22/F	98	68.8	67.8	68.2	66.3	69.2	65.8	FG	67.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
23/F	101.5	68.7	67.8	68.1	66.3	69.3	65.9	FG	67.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
24/F	105	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	67.2	67.0	68.3	69.7	63.9	FG
25/F	108.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	67.2	67.0	68.3	69.8	65.4	FG
No. of Exceedance		0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maximum Noise Level	70
Total No. Exceedances	0
Total No. of Units	156
Percentage of Compliance	100%

Noted:

- Acoustic Window
- Acoustic Door
- FG Fixed Glazing (with or without maintenance window)

Appendix 2-3

Estimation of Maximum Allowed Sound Attenuation of Baffle Type Acoustic Window

Road Traffic Noise Impact Assessment

Table of Major Parameters and Room Size of Proposed Case and Corresponding Reference Case, and Sound Attenuation Adjustment

Flat Type	Room	Rep. NSR	Baffle Type Window/ Door	Subject Site						Reference Case										Adjustment: 10xlog(RA / RAREf) (adjust downward only), dB(A)	Adjusted sound attenuation, dB(A)	
				Outer opening width, mm	Outer opening height, mm	Outer opening area, m ²	Air gap, mm	Overlapping length, mm	Room area (RA)*, m ²	Outer opening width, m	Outer opening height, m	Outer opening area, m ²	Inner opening width, m	Inner opening height, m	Inner opening area, m ²	Air gap, mm	Overlapping length, mm	With MPA? (Yes (Y)/ No (N))	Room area (RAREf), m ²			Ref. sound attenuation of baffle type acoustic window/door, dB(A)
Unit A(6/F-24/F)	BR	N01	Window	600	1165	0.70	100	253	6.1	600	1165	0.70	1397	2400	3.35	100	253	N	6.6	4.6	-0.3	4.3
	LIV/DIN	N02	Door	1275	2535	3.23	100	275	15.4	1275	2535	3.23	1480	2535	3.75	100	275	N	38.3	8.8	-4.0	4.8
Unit B	LIV/DIN	N03	Door	1275	2535	3.23	100	275	14.6	1275	2535	3.23	1480	2535	3.75	100	275	N	38.3	8.8	-4.2	4.6
Unit C	LIV/DIN	N04	Door	1275	2535	3.23	100	275	14.6	1275	2535	3.23	1480	2535	3.75	100	275	N	38.3	8.8	-4.2	4.6
	BR	N06	Window	600	1165	0.70	100	253	6.1	600	1165	0.70	1397	2400	3.35	100	253	N	6.6	4.6	-0.3	4.3
Unit D(24/F-25/F)	LIV/DIN	N09	Door	1275	2535	3.23	100	275	18.2	1275	2535	3.23	1480	2535	3.75	100	275	N	38.3	8.8	-3.2	5.6
	BR	N10	Door	1275	2535	3.23	100	275	18.2	1275	2535	3.23	1480	2535	3.75	100	275	N	38.3	8.8	-3.2	5.6
Unit E(24/F-25/F)	BR	N11	Door	1275	2535	3.23	100	275	9.1	1275	2535	3.23	1480	2535	3.75	100	275	N	38.3	8.8	-6.2	2.6

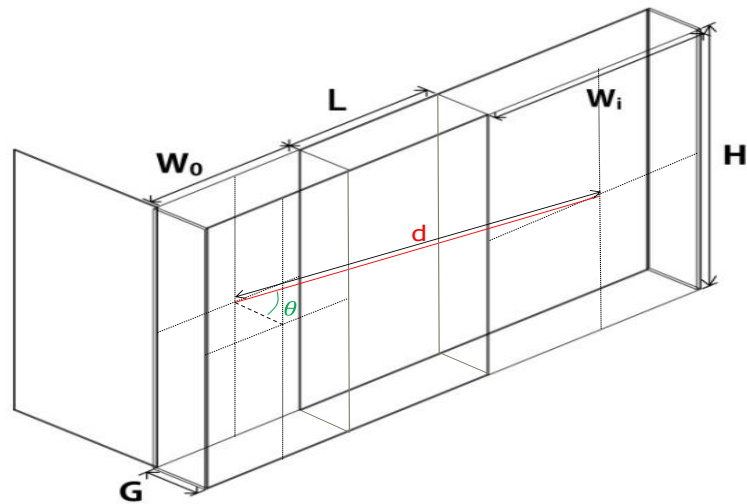
Note:
 -For each Flat Type, the smallest room has been adopted to represent the worst-case scenario.
 -For the room size of Project Case which is greater than the Reference Case, the efficacy of acoustic window is expected to be greater in the Project Case as compared to Reference Case.

Appendix 2-4

Design of the Acoustic Balcony and Acoustic Window

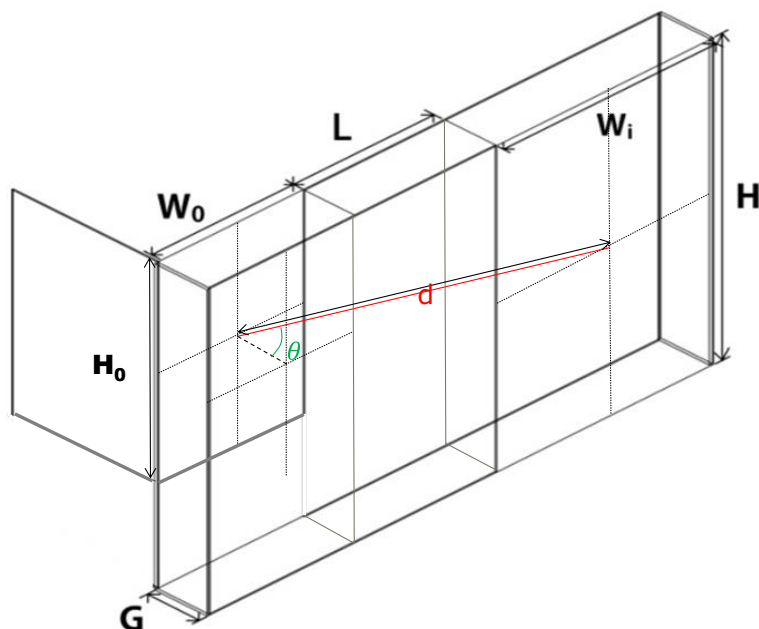
Justification on Road Traffic Noise Reduction Performance of Baffle Type Acoustic Window/Balcony

1. The Consultant was involved in a previous study to develop innovative noise mitigation measures in terms of baffle type acoustic window /balcony and applied to habitable rooms (e.g. for ex-North Point Estate redevelopment) for the purpose to mitigate road traffic noise impact. The schematic diagram of baffle type acoustic window is shown below. The baffle type acoustic balcony differs from baffle type acoustic window that the outer opening is the door opening to the balcony.



3D view (1)

(for case that inlet (outer) and outlet (inner) opening heights are the same, applicable to living room door with sliding panel behind (baffle type acoustic Window) for the proposed development)



3D view (2)

(for case that inlet (outer) opening height is different from outlet (inner) opening height, applicable to window with sliding panel behind (baffle type acoustic Window) for the proposed development)

2. In the previous study, it was attempted to increase the noise reduction performance of the system by adding micro-perforated absorber (MPA) panel system at the front of the sliding panel (i.e. the side facing the outer window for baffle type acoustic window and door opening for baffle type acoustic balcony).
3. The sound attenuation of baffle type acoustic window /balcony actually refers to the additional insertion loss (difference of noise level outdoors and indoors after propagating through the window/balcony system) of the window/balcony system when compared with the insertion loss of the corresponding conventional case.
4. Onsite noise measurement is generally considered with highest accuracy to reflect the actual performance of the baffle type acoustic window/balcony and preferred over other methods such as mock-up test, laboratory test or computer simulation. Onsite noise measurement was conducted after the building structure of the proposed residential development has been constructed in 2016.
5. According to the onsite noise measurement result, the sound attenuation of baffle type acoustic window /balcony would be 6.9 dB(A) for small bedroom with use of MPA panel system for the sliding panel behind; and 8.8 dB(A) for living room with balcony without use of MPA panel.
6. It is understood that the insertion loss performance of baffle type acoustic window/balcony depends on the configuration (key parameters and use of sound absorption material). Regarding the key parameters of the baffle type acoustic window/balcony, the smaller the gap width (between outer glazing or façade and inner sliding panel)/ outer window area/ inner window area, the higher will be the insertion loss (less sound energy can enter to indoor area). Similarly, the larger the overlapping length (i.e. the overlapped portion of inner sliding panel and glazing or façade aside the outer opening when the inner sliding panel is shifted to the position behind the outer opening), the higher will be the insertion loss as well.
7. In other words, under situation when the dimension of each major parameter of the baffle type acoustic window/balcony is designed so that it would not be less favorable to insertion loss performance when compared to reference case, the insertion loss performance of the system should at least be comparable to the reference case as well. As a conservative approach, even the major parameter of the baffle type acoustic window/balcony would result in more favorable insertion loss performance, there will be no further adjustment to the sound attenuation of the reference case. That is, the sound attenuation of the reference case will not be increased for adoption to the proposed development.
8. As discussed above, sound attenuation of baffle type acoustic window/balcony refers to the additional insertion loss indoors when compared with case using conventional window. Therefore, the sound attenuation also depends on the size of conventional window and in turn the size of the habitable room (note: it is required under Buildings (Planning) Regulations that the size of window opening is at least 1/10 and 1/16 of the size of the room to fulfil prescribed natural lighting and ventilation requirement respectively). For instance, if the size of room A is smaller than room B, the corresponding conventional window size should be smaller in room A. Noise level indoors when using conventional window is expected to be lower in room A (or the insertion loss is higher in room A). Therefore, even the baffle type acoustic window/balcony of same configuration (i.e. key parameters and use of sound absorption material) is adopted for room A and room B so that the amount of sound entry to indoor location or the insertion loss is comparable for two rooms, the sound attenuation of 2 rooms with different size should be different as well. Sound attenuation of room A using baffle type acoustic window is expected to be lower because the insertion loss of room A with conventional window is expected to be higher (due to smaller window size). To take this into

consideration when adopting the sound attenuation of baffle type acoustic window/balcony of the configuration of the reference project, the sound attenuation would be adjusted if the room size of the development is different from (and smaller than) reference project.

9. It is considered that the amount of sound energy that can enter to room indoors should be proportional to the area of the window opening. The adjustment is therefore proposed by using ratio of room size of proposed case and reference case (which represents the ratio of sound energy that can enter indoor area) and then converted to decibel scale using $10 \times \log$ function.
10. For a conservative approach, if the room size of the proposed development is larger than the reference case, sound attenuation of the corresponding reference case is adopted. In other words, the sound attenuation adopted in the proposed development will be the same as the reference case or adjusted downward only.
11. It is noted that the noise level indoors will be affected by the reverberation characteristics in general. Therefore, the reverberation effect would affect the insertion loss. As the reverberation effect will vary with the room size, it means that the room size would affect the insertion loss as well. Yet, it is worth mentioned that the sound attenuation is the difference of insertion loss between the scenarios with baffle type acoustic window/balcony and conventional window. With change in room size, the insertion loss of the scenarios with baffle type acoustic window/balcony and conventional window will change at the same time. The reverberation effect will nearly cancel out each other when calculating the sound attenuation. Therefore, the change in reverberation characteristic due to variation of room size would not have any significant effect to the sound attenuation.
12. Based on the approach and methodology above, the dimensions of major parameters and room size of reference cases and individual habitable rooms in the proposed development are tabulated. As shown in the table, all major parameters of individual habitable rooms in the proposed development would not result in unfavorable sound attenuation performance when compared to the corresponding reference case.
13. In addition, the sound attenuation of individual habitable rooms in the proposed development is calculated by considering different room size and is equal to or adjusted downward when compared to the reference case.
14. The table below shows the dimensions of major parameters and room size of the habitable room in the proposed development with baffle type acoustic window adopted, and the reference case. 1mm thick MPA will be applied at the sliding panel similar to the reference case quoted above. The position of the outer fixed glazing and opened window of baffle type acoustic window/ balcony has been designed in favourable setting to avoid air gap opening towards the dominant noise sources (Figure F-2 refers). Drawings based on current proposed baffle type acoustic window/ balcony are provided for illustration (Figure F-1 refers). The ventilation requirement for proposed acoustic windows has been checked for compliance. The sound attenuation of reference case, adjustment factor and maximum allowed sound attenuation is tabulated in the same table. As observed, major parameters of the system adopted in the proposed development would not result in less favorable sound attenuation performance. On the other hand, the sound attenuation is adjusted downward when difference in room size is accounted.
15. It is noted that the presented predicted noise level after adopting baffle type acoustic window/balcony (i.e. mitigated noise level) does not necessarily represent the noise level at 1m away from the baffle type acoustic window of the proposed development, but the “equivalent” noise level at 1m away when conventional window is used.

Appendix 3-1

Fixed Noise Source Survey and Measurement Records

ID	COMPANY	x	y	z	Measured SPL	Reference Distance, m	SWL	Tonal/Impulsiveness/Intermittency Characteristic	Day-time	Night-time	Remarks	Night time SPL	Night Time SWL
G1	SUN HIP LEE LTD.	837634.6613	819909.9566	6.8	68.4	18	103.5	0.0	Y	N			
G2	HEMAN MOTORS LTD.	837625.0793	819906.4046	6.8	68.4	5	90.4	0.0	Y	N			
G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635.0317	819930.1309	6.6	69.3	18	102.4	0.0	Y	Y		69.3	102.4054501
G4	SAM TAI ENGINEERING(DEVELOPMENT) LTD.	837603.4901	819865.7123	7.6	64.3	11	93.1	0.0	Y	N			
G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837649.7317	819898.1665	6.6	69.1	15.6	101.0	0.0	Y	N			
G6	SIME DARBY MOTOR SERVICES LIMITED	837680.4571	819884.7999	5.3	63.5	12	93.1	0.0	Y	N			
G7	TO KYA WAN SUBSTATION	837699.8339	819875.3811	6.5	65.2	3	82.7	0.0	Y	Y		63.3	80.84242509
G8	KOON WAH MIRROR FACTORY LIMITED	837590.1389	819900.5397	7.6	62.5	13	92.8	0.0	Y	N			

Appendix 3-2

Detailed Calculation of Cumulative Fixed Noise Impact

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N1	837597	819924	28.9	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	31.6	-38.0	-10	3	0	56.5
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	39.9	-40.0	-10	3	0	43.4
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	44.7	-41.0	-10	3	0	54.4
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	47.2	-41.5	-10	3	0	44.7
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	62.9	-44.0	-10	3	0	50.0
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	95.3	-47.6	-10	3	0	38.5
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	116.0	-49.3	-10	3	0	26.5
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	70.3	-44.9	-10	3	0	40.8
Overall																60	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N1	837597	819924	28.9	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	44.7	-41.0	-10	3	0	54.4
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	116.0	-49.3	-10	3	0	26.5
Overall																54	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night-time Operation</i>																60	

Note: Noise Sensitive Receiver at the lowest residential floor (4/F) has been selected to represent the worst-case scenario

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N2	837598	819923	28.9	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	30.4	-37.7	-10	3	0	56.9
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	38.4	-39.7	-10	3	0	43.7
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	43.4	-40.8	-10	3	0	54.7
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	48.0	-41.6	-10	3	0	44.5
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	61.2	-43.7	-10	3	0	50.2
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	93.5	-47.4	-10	3	0	38.7
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	114.2	-49.2	-10	3	0	26.6
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	71.2	-45.1	-10	3	0	40.7
Overall																60	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N2	837598	819923	28.9	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	43.4	-40.8	-10	3	0	54.7
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	114.2	-49.2	-10	3	0	26.6
Overall																55	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night-time Operation</i>																60	

Note: Noise Sensitive Receiver at the lowest residential floor (4/F) has been selected to represent the worst-case scenario

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N3	837602	819920	28.9	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	27.7	-36.9	-10	3	0	57.7
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	35.1	-38.9	-10	3	0	44.5
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	41.3	-40.3	-10	3	0	55.1
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	50.9	-42.1	-10	3	0	44.0
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	57.5	-43.2	-10	3	0	50.8
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	89.7	-47.1	-10	3	0	39.0
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	110.3	-48.9	-10	3	0	26.9
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	74.2	-45.4	-10	3	0	40.4
Overall																60	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N3	837602	819920	28.9	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	41.3	-40.3	-10	3	0	55.1
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	110.3	-48.9	-10	3	0	26.9
Overall																55	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night-time Operation</i>																60	

Note: Noise Sensitive Receiver at the lowest residential floor (4/F) has been selected to represent the worst-case scenario

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N4	837605	819919	28.9	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	25.7	-36.2	-10	3	0	58.3
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	32.4	-38.2	-10	3	0	45.2
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	39.2	-39.9	-10	3	0	55.6
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	52.9	-42.5	-10	3	0	43.7
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	54.2	-42.7	-10	3	0	51.3
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	86.2	-46.7	-10	3	0	39.4
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	106.8	-48.6	-10	3	0	27.2
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	76.2	-45.6	-10	3	0	40.1
Overall																61	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N4	837605	819919	28.9	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	39.2	-39.9	-10	3	0	55.6
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	102.4	1	102.4	106.8	-48.6	-10	3	0	46.8
Overall																56	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night time Operation</i>																60	

Note: Noise Sensitive Receiver at the lowest residential floor (4/F) has been selected to represent the worst-case scenario

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N5	837609	819918	28.9	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	24.3	-35.7	-10	3	0	58.8
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	29.7	-37.5	-10	3	0	45.9
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	36.3	-39.2	-10	3	0	56.2
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	54.6	-42.7	-10	3	0	43.4
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	50.5	-42.1	-10	3	0	51.9
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	82.3	-46.3	-10	3	0	39.8
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	102.8	-48.2	-10	3	0	27.5
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	77.7	-45.8	-10	3	0	40.0
Overall																62	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N5	837609	819918	28.9	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	36.3	-39.2	-10	3	0	56.2
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	102.8	-48.2	-10	3	0	27.5
Overall																56	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night-time Operation</i>																60	

Note: Noise Sensitive Receiver at the lowest residential floor (4/F) has been selected to represent the worst-case scenario

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N6	837611	819917	28.9	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	23.7	-35.5	-10	3	0	59.0
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	28.6	-37.1	-10	3	0	46.3
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	35.4	-39.0	-10	3	0	56.4
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	55.8	-42.9	-10	3	0	43.2
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	48.9	-41.8	-10	3	0	52.2
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	80.5	-46.1	-10	3	0	40.0
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	101.0	-48.1	-10	3	0	27.7
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	78.9	-45.9	-10	3	0	39.8
Overall																62	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N6	837611	819917	28.9	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	35.4	-39.0	-10	3	0	56.4
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	101.0	-48.1	-10	3	0	27.7
Overall																56	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night-time Operation</i>																60	

Note: Noise Sensitive Receiver at the lowest residential floor (4/F) has been selected to represent the worst-case scenario

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N7	837603	819930	28.9	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	32.1	-38.1	-10	3	0	56.4
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	39.3	-39.9	-10	3	0	43.5
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	39.3	-39.9	-10	3	0	55.5
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	42.9	-40.6	-10	3	0	45.5
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	61.0	-43.7	-10	3	0	50.3
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	92.9	-47.4	-10	3	0	38.7
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	113.6	-49.1	-10	3	0	26.6
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	65.4	-44.3	-10	3	0	41.5
																Overall	60
																<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>	70

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N7	837603	819930	28.9	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	39.3	-39.9	-10	3	0	55.5
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	113.6	-49.1	-10	3	0	26.6
																Overall	56
																<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night time Operation</i>	60

Note: Noise Sensitive Receiver at the lowest residential floor (4/F) has been selected to represent the worst-case scenario

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N8	837611	819926	28.9	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	27.5	-36.8	-10	3	0	57.7
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	32.5	-38.2	-10	3	0	45.1
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	32.7	-38.3	-10	3	0	57.1
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	48.9	-41.8	-10	3	0	44.3
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	52.3	-42.4	-10	3	0	51.6
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	83.7	-46.5	-10	3	0	39.6
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	104.2	-48.4	-10	3	0	27.4
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	71.3	-45.1	-10	3	0	40.7
Overall																61	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N8	837611	819926	28.9	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	32.7	-38.3	-10	3	0	57.1
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	104.2	-48.4	-10	3	0	27.4
Overall																57	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night time Operation</i>																60	

Note: Noise Sensitive Receiver at the lowest residential floor (4/F) has been selected to represent the worst-case scenario

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N9	837598	819923	105	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	100.4	-48.0	-10	3	0	46.5
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	103.1	-48.3	-10	3	0	35.1
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	105.2	-48.4	-10	3	0	47.0
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	106.5	-48.5	-10	3	0	37.6
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	113.7	-49.1	-10	3	0	44.8
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	134.7	-50.6	-10	3	0	35.5
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	149.2	-51.5	-10	3	0	24.3
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	118.8	-49.5	-10	3	0	36.3
Overall																52	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N9	837598	819923	105	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	105.2	-48.4	-10	3	0	47.0
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	149.2	-51.5	-10	3	0	24.3
Overall																47	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night time Operation</i>																60	

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N10	837602	819920	105	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	99.6	-48.0	-10	3	0	46.5
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	101.9	-48.2	-10	3	0	35.2
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	104.4	-48.4	-10	3	0	47.0
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	107.8	-48.7	-10	3	0	37.5
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	111.8	-49.0	-10	3	0	45.0
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	132.0	-50.4	-10	3	0	35.7
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	146.2	-51.3	-10	3	0	24.4
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	120.6	-49.6	-10	3	0	36.2
Overall																52	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N10	837602	819920	105	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	104.4	-48.4	-10	3	0	47.0
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	146.2	-51.3	-10	3	0	24.4
Overall																47	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night time Operation</i>																60	

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N11	837605	819919	105	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	99.1	-47.9	-10	3	0	46.6
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	101.0	-48.1	-10	3	0	35.3
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	103.5	-48.3	-10	3	0	47.1
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	108.8	-48.7	-10	3	0	37.4
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	110.1	-48.8	-10	3	0	45.1
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	129.7	-50.3	-10	3	0	35.8
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	143.5	-51.1	-10	3	0	24.6
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	121.8	-49.7	-10	3	0	36.1
Overall																52	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N11	837605	819919	105	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	103.5	-48.3	-10	3	0	47.1
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	143.5	-51.1	-10	3	0	24.6
Overall																47	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night time Operation</i>																60	

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N12	837609	819918	105	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	98.7	-47.9	-10	3	0	46.6
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	100.2	-48.0	-10	3	0	35.4
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	102.5	-48.2	-10	3	0	47.2
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	109.6	-48.8	-10	3	0	37.3
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	108.4	-48.7	-10	3	0	45.3
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	127.1	-50.1	-10	3	0	36.0
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	140.7	-51.0	-10	3	0	24.8
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	122.8	-49.8	-10	3	0	36.0
Overall																52	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N12	837609	819918	105	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	102.5	-48.2	-10	3	0	47.2
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	140.7	-51.0	-10	3	0	24.8
Overall																47	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night time Operation</i>																60	

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N13	837611	819925	105	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	99.4	-47.9	-10	3	0	46.6
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	100.9	-48.1	-10	3	0	35.3
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	101.5	-48.1	-10	3	0	47.3
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	107.3	-48.6	-10	3	0	37.5
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	109.1	-48.8	-10	3	0	45.2
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	128.0	-50.1	-10	3	0	35.9
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	141.6	-51.0	-10	3	0	24.7
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	119.4	-49.5	-10	3	0	36.2
				Overall													
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N13	837611	819925	105	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	101.5	-48.1	-10	3	0	47.3
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	141.6	-51.0	-10	3	0	24.7
				Overall													
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night time Operation</i>																60	

Daytime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N14	837602	819929	105	G1	SUN HIP LEE LTD.	837615	819910	6.8	101.5	1	101.5	100.7	-48.1	-10	3	0	46.4
				G2	HEMAN MOTORS LTD.	837625	819906	6.8	90.4	1	90.4	103.3	-48.3	-10	3	0	35.1
				G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.4	1	102.4	103.8	-48.3	-10	3	0	47.1
				G4	SAM TAT ENGINEERING(DEVELOPMENT) LTD.	837592	819966	7.6	93.1	1	93.1	104.7	-48.4	-10	3	0	37.7
				G5	NEW UNIVERSAL ALUMINIUM CO. LTD.	837650	819898	6.6	101.0	1	101.0	113.5	-49.1	-10	3	0	44.9
				G6	SIME DARBY MOTOR SERVICES LIMITED	837680	819885	5.3	93.1	1	93.1	134.2	-50.6	-10	3	0	35.5
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	148.6	-51.4	-10	3	0	24.3
				G8	KOON WAH MIRROR FACTORY LIMITED	837590	819991	7.6	92.8	1	92.8	116.0	-49.3	-10	3	0	36.5
Overall																52	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Daytime Operation</i>																70	

Nighttime

Noise Sensitive Receiver (NSR)	NSR (x)	NSR (y)	NSR (z)	Noise Source (NS)	Description	NS (x)	NS (y)	NS (z)	SWL, dB(A)	No. of Units	Overall SWL, dB(A)	Horizontal Distance from NSR to NS, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Tonality/Impulsiveness/Intermittency Correction, dB(A)	Corrected Noise Level, dB(A)
N14	837602	819929	105	G3	CHEUNG NING STREET REFUSE COLLECTION POINT	837635	819930	6.6	102.40545	1	102.4	103.8	-48.3	-10	3	0	47.1
				G7	TO KWA WAN SUBSTATION	837700	819875	6.5	82.7	1	82.7	148.6	-51.4	-10	3	0	24.3
Overall																47	
<i>Acceptable Noise Level (ANL) in dB(A) for ASR "C"- Night time Operation</i>																60	

Appendix 4-1

**Extract of Annual Traffic Census
2021**

Appendix B - AADT of Counting Stations - ordered by Station Nos.

Stn. No.	Stn. Type	Road Type	Road Name	From	To	AADT		Change of 2021 as % of 2020
						2020	2021	
3230	C	PD	Prince Edward Rd W (GL)	Nathan Rd	Fa Yuen St	25,320 *	25,680 *	+1.4
3231	C	PD	Prince Edward Rd W & FO <K11A>	Lomond Rd	La Salle Rd	33,530 *	34,960 *	+4.3
3232	C	PD	Boundary St	Nathan Rd	Sai Yee St	21,300 *	21,600 *	+1.4
3233	C	PD	Boundary St & FO <K11A>	La Salle Rd	Junction Rd	26,830 *	27,970 *	+4.3
3234	C	PD	Kowloon City RA	Ma Tau Chung Rd	Argyle St	38,030 *	39,650 *	+4.3
3235	C	PD	New Clear Water Bay Rd	Clear Water Bay Rd western junction	San Lee St	35,980 *	37,510 *	+4.3
3236	C	PD	Kwun Tong Rd	Kwun Tong Rd underpass western end	Kwun Tong Rd RA	24,510 *	25,290 *	+3.2
3237	C	PD	Lei Yue Mun Rd	Ko Chiu Rd	Kai Tin Rd	34,600 *	36,080 *	+4.3
3238	C	PD	Winslow St & underpass	Gillies Ave	Chatham Rd N	9,600 *	9,730 *	+1.4
3239	C	DD	Shanghai St	Public Square St	Waterloo Rd	11,360 *	11,840 *	+4.3
3240	C	DD	Yim Po Fong St	Shantung St	Argyle St	21,170 *	21,760 *	+2.8
3241	C	DD	Kansu St	Nathan Rd	Canton Rd	9,790 *	10,200 *	+4.3
3242	C	DD	Cheong Wan Rd	Yuk Choi Rd up-ramp	Chatham Rd S	31,670 *	33,020 *	+4.3
3243	C	DD	Cheong Wan Rd	Yuk Choi Rd up-ramp	Hung Hom Station	19,560 *	20,400 *	+4.3
3244	C	DD	Yan Fung St	Chatham Rd N	Fat Kwong St	1,040 *	1,090 *	+4.3
3245	C	DD	To Kwa Wan Rd	Kwei Chow St	Chi Kiang St	16,980 *	17,450 *	+2.8
3246	C	DD	Pui Ching Rd & Sheung Hing St	Princess Margaret Rd	Sheung Shing St	28,710 *	29,940 *	+4.3
3247	C	DD	Mong Kok Rd	Shanghai St	Tong Mi Rd	12,270 *	12,610 *	+2.8
3248	C	DD	Shanghai St	Argyle St	Mong Kok Rd	11,800 *	12,130 *	+2.8
3249	C	DD	Tin Kwong Rd	Ma Tau Wai Rd	Sheung Shing St	13,520 *	14,100 *	+4.3
3250	C	DD	Ma Tau Kok Rd	Kowloon City Rd	To Kwa Wan Rd	7,180 *	7,380 *	+2.8
3251	C	DD	Nam Cheong St	Cheung Sha Wan Rd	Lai Chi Kok Rd	13,590 *	13,970 *	+2.8
3252	C	DD	Nam Cheong St	Cornwall St	Pak Tin St	9,900 *	10,320 *	+4.3
3253	C	DD	Tai Hang Tung Rd	Tong Yam St	Tat Chee Ave	10,450 *	10,900 *	+4.3
3254	C	DD	Tung Tau Tsuen Rd	Tung Tsing Rd	Junction Rd	6,160 *	6,420 *	+4.3
3255	C	DD	Po Kong Village Rd & Hammer Hill Rd	Tsz Wan Shan Rd	Lung Cheung Rd	36,650 *	38,360 *	+4.7
3256	C	DD	La Salle Rd	Boundary St	Lancashire Rd	7,500 *	7,820 *	+4.3
3257	C	DD	Fung Mo St	Tung Tau Tsuen Rd	Fu Mei St	13,150 *	13,760 *	+4.7
3258	C	DD	Choi Hung Rd & FO <K10A>	Prince Edward Rd E	End of down-ramp	28,320 *	29,640 *	+4.7
3259	C	DD	Choi Hung Rd	Hammer Hill Rd	Po Kong Village Rd	15,220 *	15,930 *	+4.7

* AADT estimated by Growth Factor

Appendix B - AADT of Counting Stations - ordered by Station Nos.

Stn. No.	Stn. Type	Road Type	Road Name	From	To	AADT		Change of 2021 as % of 2020
						2020	2021	
4046	C	DD	Nam Cheong St	Hai Tan St	Lai Chi Kok Rd	8,250 *	8,630 *	+4.7
4047	C	DD	Nam Cheong St	Pak Tin St	Woh Chai St	9,220 *	9,610 *	+4.3
4048	C	DD	Tai Hang Tung Rd	Tat Chee Ave	Boundary St	22,550 *	23,510 *	+4.3
4049	C	DD	Junction Rd	Renfrew Rd	Waterloo Rd	29,920 *	31,200 *	+4.3
4050	C	DD	Po Kong Village Rd	Tsz Wan Shan Rd	Fung Tak Rd	11,320 *	11,800 *	+4.3
4051	C	DD	La Salle Rd	Boundary St	Prince Edward Rd W	7,820 *	8,150 *	+4.3
4052	C	DD	Lok Sin Rd	Tung Tsing Rd	Choi Hung Rd	4,130 *	4,320 *	+4.7
4053	C	DD	Shek Kip Mei St	Woh Chai St	Tai Po Rd	10,970 *	11,440 *	+4.3
4054	C	DD	Choi Hung Rd	Shatin Pass Rd	Po Kong Village Rd	33,220 *	34,760 *	+4.7
4055	C	DD	Un Chau St	Tonkin St	Yen Chow St	14,540 *	15,220 *	+4.7
4056	C	DD	Castle Peak Rd	Tonkin St	Hing Wah St	12,700 *	13,300 *	+4.7
4057	C	DD	Yen Chow St	Hai Tan St	Lai Chi Kok Rd	10,800 *	11,300 *	+4.7
4058	C	DD	Tonkin St	Un Chau St	Castle Peak Rd	14,030 *	14,680 *	+4.7
4059	C	DD	Choi Hung Rd	Hammer Hill Rd	Prince Edward Rd E	4,230 *	4,420 *	+4.7
4060	C	DD	Embankment Rd	Prince Edward Rd W	Boundary St	11,370 *	11,690 *	+2.8
4061	C	DD	Sung Wong Toi Rd	Tam Kung Rd	Ma Tau Chung Rd	26,260 *	26,990 *	+2.8
4062	C	DD	Access Rd to Concorde Rd	Prince Edward Rd E. (W-B)	Concorde Rd	1,440 *	1,500 *	+4.3
4063	C	DD	Hong Ning Rd	Yue Man Square	Kwun Tong Rd	12,900 *	13,500 *	+4.7
4064	C	DD	Hong Ning Rd	Hip Wo St	Chun Wah Rd	13,870 *	14,460 *	+4.3
4065	C	DD	Hip Wo St	Hiu Kwong St	Tsui Ping Rd	16,020 *	16,710 *	+4.3
4066	C	DD	Sau Ming Rd	Sau Mau Ping Rd	Sau Mau Path	5,680 *	5,920 *	+4.3
4067	C	DD	Sau Mau Ping Rd	Sau Fung St	Po Lam Rd	13,770 *	14,360 *	+4.3
4068	C	DD	Shun Lee Tsuen Rd	Shun King St	Hip Wo St	18,810 *	19,610 *	+4.3
4069	C	DD	Kai Cheung Rd	Wang Kwong Rd	Wang Chiu Rd	25,860 *	26,580 *	+2.8
4070	C	DD	Ngau Tau Kok Rd	Elegance Rd	Up-ramp to Sheung Yee Rd FO <K57>	14,680 *	15,090 *	+2.8
4071	C	DD	Ngau Tau Kok Rd & <FO>	Kwun Tong Rd	Diverging pt of Kai Cheung Rd FO<K56> & down ramp to Kwun Tong Rd	13,570 *	13,940 *	+2.8
4073	C	DD	Hoi Yuen Rd	Wai Yip St	Kwun Tong Rd RA	15,880 *	16,620 *	+4.7
4074	C	DD	Cha Kwo Ling Rd	Wai Yip St	Ko Chiu Rd	14,680 *	15,310 *	+4.3
4075	C	DD	Sheung Yee Rd	Wai Yip St	Wang Chiu Rd	23,840 *	24,500 *	+2.8
4076	C	LD	Canton Rd	Kansu St	Saigon St	6,460 *	6,740 *	+4.3
4077	C	LD	San Lau St	Ma Tau Wai Rd	Chatham Rd N	6,610 *	6,800 *	+2.8

* AADT estimated by Growth Factor

Appendix B - AADT of Counting Stations - ordered by Station Nos.

Stn. No.	Stn. Type	Road Type	Road Name	From	To	AADT		Change of 2021 as % of 2020
						2020	2021	
4078	C	LD	Wan Wah St	Tsz Wah Shan Rd	Wai Wah St	10,810 *	11,280 *	+4.3
4079	C	LD	Nga Tsin Wai Rd	Tak Ku Ling Rd	Junction Rd	10,690 *	11,140 *	+4.3
4080	C	LD	Peony Rd & Begonia Rd nr Tat Chee Ave	Tat Chee Ave	Tat Chee Ave	1,780 *	1,850 *	+4.3
4081	C	LD	Tai Hang Tung Rd	Woh Chai St	To Yuen St	7,700 *	8,030 *	+4.3
4082	C	LD	Yu Chau St	Wong Chuk St	Yen Chow St	6,740 *	6,930 *	+2.8
4083	C	LD	Wang Kwong Rd	Kai Fuk Rd	Kai Cheung Rd	8,880 *	9,130 *	+2.8
4084	C	LD	Ko Chiu Rd	Cha Kwo Ling Rd	Lei Yue Mun Rd	11,390 *	11,880 *	+4.3
4085	C	DD	Hung Hom Rd	Tak Man St	Man Yue St	17,190 *	17,670 *	+2.8
4086	C	DD	Lin Tak Rd	Tak Tin St	Tseung Kwan O Rd	14,240 *	14,850 *	+4.3
4089	C	PD	Prince Edward Rd INT <K78> S-B slip rd C	Kwun Tong Bypass	Kwun Tong Rd	2,460 *	2,500 *	+1.4
4090	C	DD	Cherry St Underpass	Cherry St	End	12,910 *	13,520 *	+4.7
4091	C	UT	Ferry St <FO> down-ramps	Waterloo Rd & Tung Kun St	Tung Kun St & Public Square St	29,210 *	30,140 *	+3.2
4092	C	UT	West Kowloon Highway	Section over Po Lun St	Mei Foo Sun Tsuen Phase 8 slip rds to & from Ngong Shuen Chau INT	71,430 *	73,700 *	+3.2
4094	C	PD	Austin Rd W	Lin Cheung Rd	Nga Cheung Rd	22,710 *	23,430 *	+3.2
4095	C	PD	Nga Cheung Rd	Austin Rd W	Jordan Rd	8,440 *	8,710 *	+3.2
4096	C	PD	Jordan Rd	Lin Cheung Rd	Ferry St	29,060 *	29,980 *	+3.2
4097	C	UT	Princess Margaret Rd Link	Hung Luen Rd	Chatham Rd S	29,010 *	29,420 *	+1.4
4098	C	DD	Cheong Tung Rd S slip rd down ramp S-B	Princess Margaret Rd Link	Hung Luen Rd Roundabout	2,950 *	3,030 *	+2.8
4099	C	DD	Cheong Tung Rd S slip rd up ramp N-B	Hung Luen Rd Roundabout	Princess Margaret Rd Link	14,090 *	14,480 *	+2.8
4100	C	LD	Hung Hom Bypass slip rd E-B	Salisbury Rd	Metropolis Drive	8,860 *	9,110 *	+2.8
4101	C	LD	Hung Hom Bypass slip rd W-B	Metropolis Drive	Salisbury Rd	5,880 *	6,040 *	+2.8
4102	C	LD	Fuk To St	Kwun Tong Rd	Ngau Tau Kok Rd	2,680 *	2,760 *	+2.8
4103	C	DD	Hing Wah St West	Lin Cheung Rd	Roundabout near West Kowloon Refuse Transfer	6,480 *	6,780 *	+4.7
4201	B	PD	Tai Po Rd	Caldecott Rd	Tai Po Rd INT	34,210	35,860	+4.8
4202	B	PD	Boundary St	Tai Hang Tung Rd	Embankment Rd	46,880	46,860	0.0
4203	B	PD	Prince Edward Rd W	Embankment Rd	Yuen Ngai St	45,620	45,760	+0.3
4204	B	PD	Argyle St & FO <K13>	Waterloo Rd	Yim Po Fong St	41,860	42,570	+1.7

* AADT estimated by Growth Factor

Appendix 5-1

Detailed Sewerage Impact Assessment Calculations

Table 1 Calculation for Sewage Generation Rate of the Proposed Development at the Application Site**1. Residential**

Total number of residential units	=	76 units
Total number of residents	=	205 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	55.4 m ³ /day

2. Clubhouse (4/F)

Gross Floor Area	=	44 m ² (refer to Appendix 1.1)
Assumed floor area per employee	=	30.3 m ² per employee -- (refer to Table 8 of CIFSUS - Community, Social & Personal Services)
Total number of employees	=	1 employees
Design flow	=	280 litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
Sewage generation rate	=	0.4 m ³ /day

3. Retail (G/F to 2/F)

Assumed area	=	531 m ² (refer to Appendix 1.1)
Assumed floor area per employee	=	28.6 m ² per employee -- (refer to Table 8 of CIFSUS - Retail Trade)
Total number of employees	=	19 employees
Design flow	=	280 litre/employee/day -- (refer to Table T-2 of GESF - J4 Wholesale & Retail)
Sewage generation rate	=	5.2 m ³ /day

Total Flow from the Proposed Development

Flow rate	=	61.0 m ³ /day
Flow rate with P _{CIF} (Central Kowloon - 1.0)	=	61.0 m ³ /day (refer to Table T-4 of GESF - Central Kowloon - 1.0)
Contributing population	=	226 people (average unit flow factor of all typical residents plus employees)
Peaking factor	=	8 (refer to Table T-5 of GESF for a population of less than 1000 incl. stormwater allowance)
Peak flow	=	<u>5.7</u> litre/sec

Remarks:

(1) For job type J11, the "per-employee" unit flow factor takes into account the flows of customers and tenants.

Table 2a Hydraulic Capacity of Existing and Proposed Sewers - Free Flow Condition

Segment	Manhole Reference	Manhole Reference	Material	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k _s	s	v	V	Area	Q	Estimated Capacity
				mm	m	mPD	mPD	m/s ²	m	s	m ² /s	m/s	m ²	m ³ /s	L/s
S0-S1	TFMH-01	FMH4025672	polyethylene	200	2.5	5.49	5.48	9.81	0.0015	0.005	0.000001	0.75	0.03	0.02	24
S1-S2	FMH4025672	FMH4025673	clayware	150	19.9	5.48	5.16	9.81	0.0006	0.016	0.000001	1.28	0.02	0.02	23
S2-S3	FMH4025673	FMH4025641	clayware	150	10.6	5.16	4.98	9.81	0.0006	0.017	0.000001	1.32	0.02	0.02	23
S3-S4	FMH4025641	FMH4025642	clayware	300	15.0	4.98	4.75	9.81	0.0006	0.015	0.000001	1.95	0.07	0.14	138
S4-S5	FMH4025642	FMH4025643	clayware	450	10.1	4.75	4.66	9.81	0.0006	0.009	0.000001	1.92	0.16	0.31	305
S5-S6	FMH4025643	FMH4025644	clayware	300	31.2	4.66	4.05	9.81	0.0006	0.020	0.000001	2.20	0.07	0.16	156
S6-S7	FMH4025644	FMH4025645	clayware	300	2.7	4.05	4.01	9.81	0.0006	0.015	0.000001	1.91	0.07	0.14	135
S7-S8	FMH4025645	FMH4025646	clayware	300	17.7	4.01	3.76	9.81	0.0006	0.014	0.000001	1.87	0.07	0.13	132
S8-S9	FMH4025646	FMH4025647	clayware	300	5.3	3.76	3.61	9.81	0.0006	0.028	0.000001	2.64	0.07	0.19	187
S9-S10	FMH4025647	FMH4025648	clayware	300	24.9	3.61	3.17	9.81	0.0006	0.018	0.000001	2.09	0.07	0.15	148

Remarks: (1) g=gravitational acceleration; k_s=equivalent sand roughness; s=gradient; v=kinematic viscosity of water; V=mean velocity

(2) The values of k_s = 3mm and 0.6mm are used for the calculation of slimed clayware sewer, poor condition @mean velocity = approximately 0.75m/s and 1.2m/s (based on Table 5: Recommended Roughness Values in Sewerage Manual)

(3) The values of k_s = 1.5mm and 0.3mm is used for the calculation of slimed PE sewer, poor condition @mean velocity = approximately 0.75m/s and 1.2m/s (based on Table 5: Recommended Roughness Values in Sewerage Manual)

(4) The value of velocity (V) is referred to the Tables for the hydraulic design of pipes, sewers and channels (8th edition)

(5) Equation used: $V = \frac{1.49}{n} R^{2/3} S^{1/2}$

(6) The upstream invert levels of Segment S0-S1 is assumed by minimum velocity with the minimum pipe gradient (i.e. 1/200mm).

(7) According to DSD Drainage Records, the downstream invert levels of Segment S2-S3 (i.e. Sewer Pipe: FWD4026782) is missing, it is assumed the upstream invert level of FWD4026750 is equal to the downstream invert level of Segment S5-S6.

(8) According to DSD Drainage Records, the downstream invert levels of Segment S10-S11 (i.e. Sewer Pipe: FWD4026757) is missing, it is assumed the downstream invert levels by minimum velocity with the minimum pipe gradient (i.e. 1/300mm).

Table 3 Calculation for Sewage generation rate of the Existing Surrounding Buildings**Catchment A, discharges to FMH4025672****1a) Luen Fat Mansion (Storage)**

Assumed area	=	413 m ² (refer to BRAVO building records)
Assumed floor area per employee	=	250.0 m ² per employee -- (refer to Table 8 of CIFSUS - Transport, Storage & Communication)
Total number of employees	=	2 employees
Design flow	=	180 litre/employee/day -- (refer to Table T-2 of GESF - J3 Transport, Storage & Communication)
Sewage generation rate	=	0.4 m³/day

1b) Pak Lung International MuayThai Association on Luen Fat Mansion (4/F)

Assumed area	=	413 m ² (refer to BRAVO building records)
Assumed floor area per employee	=	30.3 m ² per employee -- (refer to Table 8 of CIFSUS - Community, Social & Personal Services)
Total number of employees	=	14 employees
Design flow	=	280 litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
Sewage generation rate	=	3.8 m³/day

1c) Retail on Luen Fat Mansion (5/F)

<http://m.uppershop.hk/shop/3014/>

Assumed area	=	413 m ² (refer to BRAVO building records)
Assumed floor area per employee	=	28.6 m ² per employee -- (refer to Table 8 of CIFSUS - Retail Trade)
Total number of employees	=	14 employees
Design flow	=	280 litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
Sewage generation rate	=	4.1 m³/day

1a) Luen Fat Mansion (Manufacturing)

Assumed area	=	2067 m ² (refer to BRAVO building records)
Assumed floor area per employee	=	43.5 m ² per employee -- (refer to Table 8 of CIFSUS - Manufacturing)
Total number of employees	=	48 employees
Design flow	=	630 litre/employee/day -- (refer to Table T-1 of GESF - J1 Manufacturing - Central Kowloon)
Sewage generation rate	=	29.9 m³/day

2) Cheung Ning Street RCP

Gross Floor Area	=	266 m ² (refer to BRAVO building records)
Assumed floor area per employee	=	30.3 m ² per employee -- (refer to Table 8 of CIFSUS - Community, Social & Personal Services)
Total number of employees	=	9 employees
Design flow	=	280 litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
Sewage generation rate	=	2.5 m³/day

Total Flow of Catchment A, discharges to FMH4025672	=	32.4 m³/day
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Catchment B, discharges to FMH4025641**1) The Grands, 45 Pau Chung Street**

<https://www.hkp.com.hk/en/new-property/Kowloon-To-Kwa-Wan-The-Grands-E000019069/S-576379>

Total number of residential units	=	76 units (refer to Appendix 1.1)
Total number of residents	=	205 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	55.4 m³/day

2) 1-17A Sheung Heung Road (odd nos.) (Residential)

Total number of residential units	=	105 units (refer to Appendix 1.1)
Total number of residents	=	284 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	76.5 m³/day

3) 1-27 and 29 Wing Yiu Street (Residential)

Total number of residential units	=	224 units (refer to Appendix 1.1)
Total number of residents	=	605 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	163.3 m³/day

Table 3 Calculation for Sewage generation rate of the Existing Surrounding Buildings**4) 2-31, 31 and 35 Hung Kwong Street (Residential)**

Total number of residential units	=	266 units (refer to Appendix 1.1)
Total number of residents	=	718 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	193.9 m³/day

5) 179-187 Ma Tau Wai Road (odd nos.) (Residential)

Total number of residential units	=	266 units (refer to Appendix 1.1)
Total number of residents	=	718 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	193.9 m³/day

6) 46, 48, 54 and 56 Pau Chung Street (Residential)

Total number of residential units	=	38 units (refer to Appendix 1.1)
Total number of residents	=	103 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	27.7 m³/day

7) Ka Wai Court (Residential)

Total number of residential units	=	20 units (refer to Appendix 1.1)
Total number of residents	=	54 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	14.6 m³/day

7) 43 and 45 Kowloon City Road (Residential)

Total number of residential units	=	4 units (refer to Appendix 1.1)
Total number of residents	=	11 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	2.9 m³/day

8) Fung Yue Mansion (Residential)

Total number of residential units	=	20 units (refer to Appendix 1.1)
Total number of residents	=	54 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	14.6 m³/day

9a) On Lok Factory Building (Storage)

Assumed area for warehouse (34 units)	=	11397 m ² (refer to BRAVO building records)
Assumed floor area per employee	=	250.0 m ² per employee -- (refer to Table 8 of CIFSUS - Transport, Storage & Communication)
Total number of employees	=	46 employees
Design flow	=	180 litre/employee/day -- (refer to Table T-2 of GESF - J3 Transport, Storage & Communication)
Sewage generation rate	=	8.3 m³/day

9b) On Lok Factory Building (Office)

Assumed area for office (6 units)	=	2011 m ² (refer to BRAVO building records)
Assumed floor area per employee	=	18.2 m ² per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	111 employees
Design flow	=	280 litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	31.1 m³/day

9c) On Lok Factory Building (Manufacturing)

Assumed area for industrial (4 Units)	=	1341 m ² (refer to BRAVO building records)
Assumed floor area per employee	=	43.5 m ² per employee -- (refer to Table 8 of CIFSUS - Manufacturing)
Total number of employees	=	31 employees
Design flow	=	630 litre/employee/day -- (refer to Table T-1 of GESF - J1 Manufacturing - Central Kowloon)
Sewage generation rate	=	19.4 m³/day

Table 3 Calculation for Sewage generation rate of the Existing Surrounding Buildings**10) Artisan Garden (Residential)**

Total number of residential units	=	294 units (refer to Appendix 1.1)
Total number of residents	=	794 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	214.3 m ³ /day

11) Wah King Mansion (Residential)

Total number of residential units	=	115 units (refer to Appendix 1.1)
Total number of residents	=	311 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	83.8 m ³ /day

12) Merry Mansion (Residential)

Total number of residential units	=	110 units (refer to Appendix 1.1)
Total number of residents	=	297 residents (refer to Census and Statistics Department 2021 data - average household size of 2.7 in Kowloon City)
Design flow	=	270 litre/person/day -- (refer to Private R2 in Table T-1 of GESF)
Sewage generation rate	=	80.2 m ³ /day

Total Flow of Catchment B, discharges to FMH4025641	=	1,180.0 m ³ /day
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Catchment C, discharges to FMH4025646**1a) Office on Cheong Wah Factory Building (1/F and 4-9/F)**

Assumed area	=	7571 m ² (refer to BRAVO building records)
Assumed floor area per employee	=	18.2 m ² per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	417 employees
Design flow	=	280 litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	116.8 m ³ /day

1b) Manufacturing on Cheong Wah Factory Building (G/F, 2-3/F and 10/F)

Assumed area	=	1440 m ² (refer to BRAVO building records)
Assumed floor area per employee	=	43.5 m ² per employee -- (refer to Table 8 of CIFSUS - Manufacturing)
Total number of employees	=	33 employees
Design flow	=	630 litre/employee/day -- (refer to Table T-1 of GESF - J1 Manufacturing - Central Kowloon)
Sewage generation rate	=	20.9 m ³ /day

2) Brill Plaza

Assumed area	=	14032 m ² (refer to BRAVO building records)
Assumed floor area per employee	=	18.2 m ² per employee -- (refer to Table 8 of CIFSUS - Financial, Insurance, Real Estate & Business Services)
Total number of employees	=	772 employees
Design flow	=	280 litre/employee/day -- (refer to Table T-2 of GESF - J6 Finance, Insurance, Real Estate & Business Services)
Sewage generation rate	=	216.2 m ³ /day

Total Flow of Catchment C, discharges to FMH4025646	=	353.8 m ³ /day
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Remarks:

- (1) For job type J11, the "per-employee" unit flow factor takes into account the flows of customers and tenants.
- (2) The uses of different premises was verified on site in March 2023.

Table 3 Calculation for Sewage generation rate of the Existing Surrounding Buildings**Sub-total**

Total Flow at S1 (including Catchment A & Proposed Development)	=	93.4 m ³ /day
Total Flow at S2 (including Catchment A & Proposed Development)	=	93.4 m ³ /day
Total Flow at S3 (including Catchment A, B & Proposed Development)	=	1,273.4 m ³ /day
Total Flow at S4 (including Catchment A, B & Proposed Development)	=	1,273.4 m ³ /day
Total Flow at S5 (including Catchment A, B & Proposed Development)	=	1,273.4 m ³ /day
Total Flow at S6 (including Catchment A, B & Proposed Development)	=	1,273.4 m ³ /day
Total Flow at S7 (including Catchment A, B & Proposed Development)	=	1,273.4 m ³ /day
Total Flow at S8 (including Catchment A, B, C & Proposed Development)	=	1,627.2 m ³ /day
Total Flow at S9 (including Catchment A, B, C & Proposed Development)	=	1,627.2 m ³ /day
Total Flow at S10 (including Catchment A, B, C & Proposed Development)	=	1,627.2 m ³ /day

Sub-total with Catchment Inflow Factor = 1.0 (Central Kowloon)

Total Flow at S1 (including Catchment A & Proposed Development)	=	93.4 m ³ /day
Total Flow at S2 (including Catchment A & Proposed Development)	=	93.4 m ³ /day
Total Flow at S3 (including Catchment A, B & Proposed Development)	=	1,273.4 m ³ /day
Total Flow at S4 (including Catchment A, B & Proposed Development)	=	1,273.4 m ³ /day
Total Flow at S5 (including Catchment A, B & Proposed Development)	=	1,273.4 m ³ /day
Total Flow at S6 (including Catchment A, B & Proposed Development)	=	1,273.4 m ³ /day
Total Flow at S7 (including Catchment A, B & Proposed Development)	=	1,273.4 m ³ /day
Total Flow at S8 (including Catchment A, B, C & Proposed Development)	=	1,627.2 m ³ /day
Total Flow at S9 (including Catchment A, B, C & Proposed Development)	=	1,627.2 m ³ /day
Total Flow at S10 (including Catchment A, B, C & Proposed Development)	=	1,627.2 m ³ /day

Table 4 Comparison of the Hydraulic Capacity of Existing Sewers for Sewerage generated from the Proposed Development and Surrounding Catchment Areas

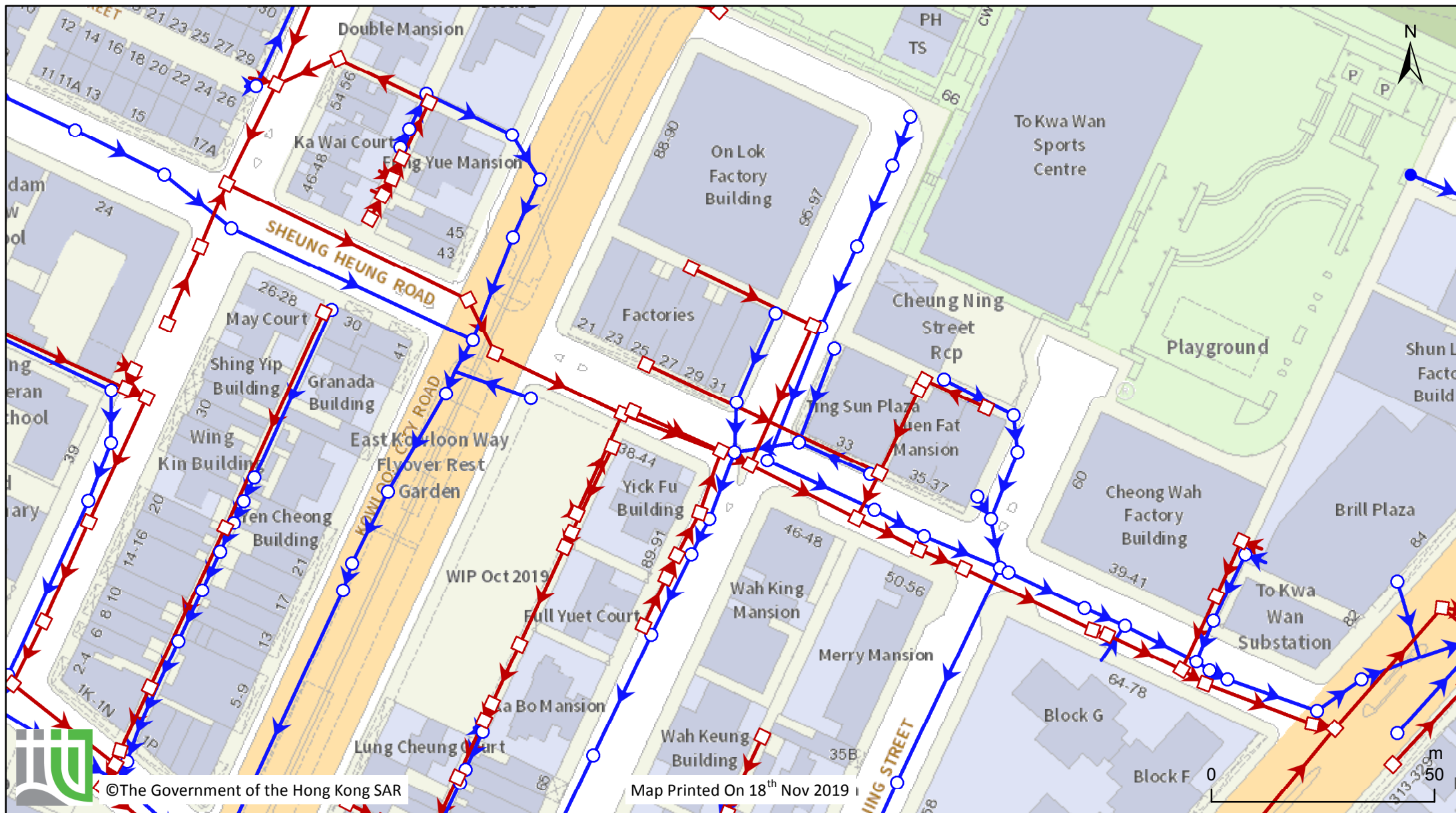
Segment	Manhole Reference	Manhole Reference	Pipe Dia. (mm)	Pipe Length (m)	Gradient	Estimated Capacity (L/s)	Daily Flow (m ³ /day)	Contributing Population	Peaking Factor	Peak Flow from the Proposed Development and Catchment Areas (L/s)	Contribution from the Proposed Development and the Surrounding Catchment Areas (%)	Status
S0-S1	TFMH-01	FMH4025672	200	2.5	0.005	24	61.0	226	8	5.7	24.0%	OK
S1-S2	FMH4025672	FMH4025673	150	19.9	0.016	23	93.4	346	8	8.7	38.3%	OK
S2-S3	FMH4025673	FMH4025641	150	10.6	0.017	23	93.4	346	8	8.7	37.2%	OK
S3-S4	FMH4025641	FMH4025642	300	15.0	0.015	138	1273.4	4,716	6	88.4	64.1%	OK
S4-S5	FMH4025642	FMH4025643	450	10.1	0.009	305	1273.4	4,716	6	88.4	29.0%	OK
S5-S6	FMH4025643	FMH4025644	300	31.2	0.020	156	1273.4	4,716	6	88.4	56.8%	OK
S6-S7	FMH4025644	FMH4025645	300	2.7	0.015	135	1273.4	4,716	6	88.4	65.4%	OK
S7-S8	FMH4025645	FMH4025646	300	17.7	0.014	132	1273.4	4,716	6	88.4	66.8%	OK
S8-S9	FMH4025646	FMH4025647	300	5.3	0.028	187	1627.2	6,027	5	94.2	50.4%	OK
S9-S10	FMH4025647	FMH4025648	300	24.9	0.018	148	1627.2	6,027	5	94.2	63.6%	OK

Appendix 5-2

Drainage Record Plans Obtained from Geo Info Map



Go to map: <https://www.map.gov.hk/gm/geo:22.3183,114.1896?z=1128>



Appendix 5-3

Upgrading Record of Pipe from FMH4025642 to FMH4025643



F: 2782 5061 & By Hand
Lands Department
Lands Administration Office
District Lands Office, Kowloon West
10/F, Yau Ma Tei Carpark Building
250 Shanghai Street, Kowloon

Attn: Mr. Raymond Lam

4 April 2019

Dear Sir ,

**PROPOSED RESIDENTIAL AND COMMERCIAL DEVELOPMENT AT
J/O SHEUNG HEUNG ROAD AND KOWLOON CITY ROAD, KOWLOON,
KIL NO. 11246
Completion of Upgrading Works for Sewage Impact Assessment (SIA)
Our Ref: 5425/2/110/kc**

Pursuant to Special Condition (41)(b) of the lease condition for the captioned development, we hereby inform you that the upgrading works in the approved SIA report were completed.

Please be advised that DSD has no adverse comment on the newly constructed 450mm diameter polyethylene (PE) sewage pipe. Enclosed please find DSD's acknowledgement letter dated 9/1/2019 (letter ref.: (OOBA7R in MS 10/KIL/11246/0 Pt.2)) for your record.

Based on the above, EPD had considered that SC (41)(b) of the lease condition was complied with. We enclosed herewith EPD's letter dated 19/3/2019 (letter ref.: (20) in EP1/K10/MTK/147 Pt.4)) for your record.

Should you have any queries, please feel free to contact the undersigned at 2575 6575 or our Ms. Yvonne Wong at 2832 3573.

Yours faithfully,

H.Y. Tsang
for P&T Architects and Engineers Limited

Encl.

cc: BD - Mr. Roger Tam]
DSD - Mr. Michael Cheng] all w/e
EPD - Mr. Maureen Chang]

HYT/YW/kc

P&T Architects and Engineers Limited

Hong Kong • Singapore • Bangkok • Shanghai • Wuhan • Chongqing • Shenzhen • Macau • Hanoi • Ho Chi Minh City • Jakarta • Kuala Lumpur • Dubai • Abu Dhabi • Doha
33/F, 633 King's Road, North Point, Hong Kong Tel: 852-25756575 Fax: 852-28913834 E-mail: ptaehk@p-t-group.com Website: www.p-t-group.com



Drainage Services Department

Mainland South Division
14/F, Kowloon Government Offices,
405 Nathan Road, Kowloon.

渠務署
九龍及新界南渠務部
九龍彌敦道405號
九龍政府合署14樓

本署檔號 Our Ref: (00BA7R) in MS 10/KIL/11246/0 Pt.2
來函檔號 Your Ref: 16101/DCS102619
電話 Telephone: (852) 2300 1348 □
圖文傳真 Fax: (852) 2771 9640

By Fax
3110 2202

9 January 2019

New World Construction Company Limited
8/F, Prosperity Tower,
39 Queen's Road Central,
Central, Hong Kong
(Attn.: Rex LUNG)

Dear Sir,

**16101 Proposed Residential and Commercial Development
at J/O Sheung Heung Road and Kowloon City Road, Kowloon, K.I.L. No. 11246
Sewage Improvement Assessment (SIA) - Supplementary Document for Handover Inspection**

I refer to your above referenced letter and the email communication dated 9 Jan 2019 regarding the captioned issue.

Please be advised that newly constructed 450mm dia. PE sewage pipe (section between FMH4025642 and FMH4025643) was taken up by DSD since 9 Jan 2019.

Yours faithfully,

(CHENG Chun Wai, Michael)
for Chief Engineer/Mainland South
Drainage Services Department

End.
c.c. w/ encl.
IOW/K9, AIOW/K9 by EIMS

我們的抱負是提供世界級的污水和雨水處理排放服務，以促進香港的可持續發展。

Our mission is to provide world-class wastewater and stormwater drainage services enabling the sustainable development of Hong Kong.

Urgent Return receipt Sign Encrypt Mark Subject Restricted Expand personal&public groups



**RE: 16101 SHR - Supplementary Information after Handover Inspection
for SIA works at Sheung Heung Road**

09/01/2019 09:13

From: KF FAN/MSD/DSD/HKSARG
To: Thomas Ho Kai Fung <thomasho@nwconstruction.com.hk>
Cc: YL CHAN/MSD/DSD/HKSARG@DSD, CW CHENG/MSD/DSD/HKSARG@DSD
Serial No.:

Dear Thomas,

As discussed, we have no further comment for the newly constructed 450mm dia. PE sewage pipe (section between FMH4025642 and FMH4025643) for the SIA works and agreed the works was completed on 20.09.2018.

Regards,
KF FAN
Ag.IOW/K9
Mainland South Division
Drainage Services Department
Office: 2332 2658
Mobile: 9732 6053

Thomas Ho Kai Fung Mr. Fan, As requested , please find the CCT... 27/11/2018 17:51:12

From: Thomas Ho Kai Fung <thomasho@nwconstruction.com.hk>
To: "kffan@dsd.gov.hk" <kffan@dsd.gov.hk>
Cc: "5425 (5425@p-t-group.com)" <5425@p-t-group.com>, "christ.lee@p-t-group.com" <christ.lee@p-t-group.com>, Sin Man Wai <mwsin@nwconstruction.com.hk>, Au-Yeung Chi Wai <cwaueyung@nwconstruction.com.hk>, Emily Hong Yuk Suet <emilyhong@nwd.com.hk>, "etonlau0810@gmail.com" <etonlau0810@gmail.com>, "Gary Chan Koon Wah" <garychan@nwd.com.hk>, Isaac Lo Yuk Shing <isaaclo@nwconstruction.com.hk>, Jack Qin Weicong <jackqin@nwconstruction.com.hk>, "klee@ramboll.com" <klee@ramboll.com>, "kwleung@p-t-group.com" <kwleung@p-t-group.com>, "ptme8741shr@p-t-group.com" <ptme8741shr@p-t-group.com>, Rex Leung Ka Wing <rexleung@nwconstruction.com.hk>, Sam Hung Man Chor <samhung@nwd.com.hk>, "tcheng@ramboll.com" <tcheng@ramboll.com>, York Chan Chi Shing <yorkchan@nwconstruction.com.hk>, "yvonne Wong" <yvonne Wong@p-t-group.com> <yvonne Wong@p-t-group.com>, "mhtse@dsd.gov.hk" <mhtse@dsd.gov.hk>, "Jack Qin Weicong" <jackqin@nwconstruction.com.hk>, Wong Chi Chung <ccwong@nwconstruction.com.hk>, "kwleung@p-t-group.com" <kwleung@p-t-group.com>, "ylchan03@dsd.gov.hk" <ylchan03@dsd.gov.hk>
Date: 27/11/2018 17:51
Subject: RE: 16101 SHR - Supplementary information after Handover Inspection for SIA works at Sheung Heung Road
Serial No.:

Mr. Fan,

As requested , please find the CCTV report by accessing the following link.

Download Link - Expires on 2018-12-11 00:00 GMT+0800

CCTV Report 20180628.MP4 (31.9 MB)

<https://ftp.nwconstruction.com.hk/justattach/download.php?T=5Db-xQk9qb85u1FrTB4yKNcKNqkPzqiJ4PWEafe5xTXsJq.Vmxd-AU4qvDO0DIDM1i9qMx4j.S4I4u5cNzKw>

本署編號
 OUR REF: (20) in EP1/K10/MTK/147 Pt.4
 來函編號
 YOUR REF: NWDSHRDREI00_0085L.19.doc
 電話
 TEL. NO.: 2835 1867
 圖文傳真
 FAX NO.: 2591 0558
 電子郵件
 E-MAIL: ccchang@epd.gov.hk
 網址
 HOMEPAGE: http://www.epd.gov.hk

Environmental Protection Department
Branch Office
 28th Floor, Southern Centre,
 130 Hennessy Road,
 Wan Chai, Hong Kong.



環境保護署分處
 香港灣仔
 軒尼詩道
 一百三十號
 修頓中心廿八樓

19 March 2019

By Mail & Fax (3465 2899)

Ramboll Hong Kong Limited
 21/F, BEA Harbour View Centre,
 56 Gloucester Road,
 Wan Chai,
 Hong Kong
 (Attn: Mr. Tony CHENG, Senior Manager)

Dear Mr. CHENG,

Residential Development Project (KC-007)
at Kowloon City Road / Sheung Heung Road, Kowloon
Sewerage Impact Assessment (SIA) Report (Ref: R5255_V2.2 dated March 2017) -
Report Completion of the Upgrading Works

I refer to your letter under reference seeking our comments on whether Special Condition (SC) (41)(b) of the lease condition for the subject site has been complied with.

2. The Sewerage Impact Assessment (SIA) Report (Ref: R5255_V2.2 dated March 2017), which we have indicated that we have no further comments on via email dated 11 April 2017, proposed to "upgrade sewer section S5-S6 from 300mm diameter to 450mm diameter". [Note: Manhole S5 and S6 refer to FMH4025642 and FMH4025643 respectively.]
3. We note that the Drainage Services Department (DSD) has indicated in their letter and email of 9 January 2019 that they have no further comments on the newly constructed 450mm diameter polyethylene (PE) sewage pipe (i.e. section between FMH4025642 and FMH4025643) which was the proposed mitigation measure in the above SIA and have agreed that the above works was completed on 20 September 2018.
4. Based on DSD's agreement above, we consider that SC (41)(b) is complied with.

Yours sincerely,

(Maureen CHANG)
 Environmental Protection Officer
 for Director of Environmental Protection

c.c.
 LandsD (Attn: Mr. Raymond LAM)
 DSD (Attn: Mr. Michael CHENG)

Fax: 2782 5061
 Fax: 2771 9640

Internal Ag. S(MA)2

Appendix 5-4

School Profile Po Leung Kok Lam Man Chan English Primary
School



保良局林文燦英文小學

Po Leung Kuk Lam Man Chan English Primary School

24 Sheung Heung Road & 2 Farm Road, To Kwa Wan, Kowloon

27121270

27142658

email@plklmceps.edu.hk

http://www.plklmceps.edu.hk

Not applicable

POA School Net No.

School Information

Supervisor / Chairman of Management Committee	School Head	Incorporated Management Committee	School Type	Student Gender	Religion
Dr. Lam Man Chan	Ms. Man Sze Wing Jessica	Established	DSS Whole Day	Co-ed	Not Applicable
Name of Sponsoring Body	School Motto	Year of Commencement of Operation	Medium of Instruction	School Bus	Area Occupied by the School
Po Leung Kuk	Love, Respect, Diligence and Integrity	2007	English	School Bus	About 2544 Sq. M
Through-train / Feeder / Nominated Secondary School		Past Students' / School Alumni Association		Parent-Teacher Association (PTA)	
-		Yes		Yes	

2019/2020 Annual School Charges

School Fee	Tong Fai	PTA Fee	Approved Charges for Non-standard Items	Other Charges / Fees
\$13,550 (10 installments)#	-	\$100	-	Fees for project materials, transportation and camping; Fees for lunch, bus or ECA if needed.

School Facilities

No. of Classroom(s)	No. of Playground(s)	No. of School Hall(s)	No. of Library(ies)	Others
24	2	2	2	Food waste processor, garden, planting corner and wind power generator.
Special Rooms				Facility(ies) Support for Students with Special Educational Needs
IT room, music room, visual art room, social worker's office, conference room, library, teaching staff room, P.E. room, medical corner, teaching material store room, multi-function room etc.				Ramp, Accessible lift and Accessible toilet.

Teaching Staff Information (including School Head) in the 2018/2019 school year

Number of teaching posts in the approved establishment		-	Total number of teachers in the school			58
Qualifications and professional training (%)				Years of Experience (%)		
Teacher Certificate / Diploma in Education	Bachelor Degree	Master / Doctorate Degree or above	Special Education Training	0 - 4 years	5 - 9 years	10 years or above
100%	100%	43%	20%	49%	36%	15%

Class Structure

		P1	P2	P3	P4	P5	P6	Total
2018/2019 school year	No. of classes	4	4	4	4	4	4	24
2019/2020 school year (Based on the approval of EDB in 2019)	No. of classes	4	4	4	4	4	4	24
Mode of teaching at different levels	Splitting classes according to the ability of students, Mixed Teaching Approach, tailor lesson activities for different subject needs (Integrated Curriculum, Project Assessment and Special activities for P.1).							
Remarks	A project assessment for P.1, Dual class teachers system, Group activities, Library lesson, Whole person development lesson and multi-intelligence lesson, Morning assembly (Parents can join).							

Performance Assessment

No. of exam(s) per year	No. of test(s) per year	Streaming arrangement
3	0	Students will be allocated on the basis of balance in gender and academic performance; Chinese and Basic Chinese streams in Chinese subject lessons, Mathematics streaming according to students' ability in some levels.
Diversified Assessment for Learning		
Formative and summative assessments; Provide students with different learning experiences and various kinds of assessments like project assessment and practical assessment.		

School Life

No. of school days per week	No. of periods per day	Duration of each normal period	School starts at	School ends at	Lunch break
5 Days	9	30 min	8:00AM	3:10PM	12:10 - 13:10
Lunch arrangement	Healthy school life	Remarks			
Provided by designated supplier and Prepared by parents.	Morning Exercise, Fruit day, Physical fitness test, the School "Nutri-agent" Project, Wellness Month, Education for Plastic Waste Recycling Campaign, Sports Day, Student Leadership Camp and Perform at Po Leung Kuk Variety Shows.	The above time schedule is for Farm Road Campus (P.1-P.3). 12:40p.m.-1:10p.m. is the 3rd recess.			
		Sheung Heung Road Campus (P.4-P.6) school starts at 8:20a.m., ends at 3:30p.m. and lunch time is from 12:30p.m. to 1:00p.m. 1:00p.m. to 1:30p.m. is the 3rd recess. Open door morning assembly for parents.			

As only P4 to P6 are using Sheung Heung Road Campus, therefore, 12 classes and 29 teachers are used in calculations.

Life-wide Learning Activities

Trumpet, Trombone, Saxophone, Flute, String, Violin, Cello, Acappella, Ocarina, Percussion, Choir, Jazz Dance, Table Tennis, Rope Skipping, Athletics, Mini Tennis, Badminton, Basketball, Soccer, Taekwondo, Volleyball, Roller Skating, Cricket, Ice Hockey, Choral Speaking, Art Alive, Cubs Scout, Student Development Group, English Drama, Basic French, Japanese Class, etc.

School Mission

Adhering to the educational policies of the government and in keeping with the guiding principles of Po Leung Kuk, we attempt to provide a rich English learning environment with a rich three-dimensional approach to education. Our principal "dimension" being, firstly the school motto of "Love, Respect, Diligence and Honesty", secondly our guiding ethic of Moral, Intellectual, Physical, Social and Aesthetic development and thirdly a multicultural ethos founded on the core ideas "Stand as One, Make a Difference" and "One Team, One Mind, We Care, We respect". We aim to foster a vigorous and positive moral attitude as the basis of a whole-person education of love and care.

School Characteristics

School Management

School Management Organisation:

The school IMC has a wide representation. Besides the members of the school sponsoring body, it consists of the principal, teachers, parents and alumni representative. We are committed to implementing whole-person development based on the use of child-centred teaching approaches to create a culture of creativity and care. Our quality school management team is sensitive to changes in education and society. Using innovation and constant self improvement, our accountability is maintained to a high degree by commitment and dedication shown in their leadership.

Incorporated Management Committee / School Management Committee / Management Committee:

9 Sponsoring Body Managers and 6 other Managers (i.e. elected parent and teacher manager, the principal, the alumni manager and 2 independent managers.)

School Green Policy:

Decompose food waste to fertilizer to cultivate organic plants at school, Earth Hour, Water Conservation Ambassador Selection Scheme, No Air-Con Day, One Person One Flower Scheme, Garden, Recycle bins for plastic and other waste, Change LED lamps in classrooms, use wind to generate power, recycle old uniforms and story books.

School's Major Concerns:

Strengthen learning efficiency and teaching pedagogies; Incorporate and utilize IT tools for self-regulated learning; Sustain healthy, caring and eco-friendly campuses.

Learning and Teaching Plan

Learning & Teaching Strategies:

School-based Curriculum (English as the major teaching language in all subjects, Chinese subject is taught in Putonghua, Demonstrate the Inquiry-based Learning through Project learning and presentations).

Development of Key Tasks:

Emphasis on Language, Morals and Control.

Development of Generic Skills:

Developing Generic Skills like Communication, IT, Creativity and Self-learning through Life-wide learning, ECA and Subject Activities.

Student Support

Whole School Approach to Cater for Student Diversity:

In-house registered social workers to provide whole-person support to students; hold various kinds of student support groups and parent workshops; provide after-school enhancement and remedial classes of different subjects to cater for students' learning differences.

Whole School Approach to Integrated Education:

A student support team which includes our teachers and social workers is responsible for catering for the learning diversity and inclusion in our school.

Education Support for Non-Chinese Speaking (NCS) Students:

Our school provides additional support for NCS students to facilitate their learning of Chinese: providing after-school support programmes in learning Chinese; appoints additional teacher(s)/teaching assistant(s) to support NCS students' learning of Chinese; arranging intensive Chinese learning and teaching mode(s), e.g. pull-out learning if necessary, split-class/group learning, etc.; developing school-based Chinese Language curriculum and/or adapting learning and teaching materials; organising cultural integration activities; and hiring additional manpower and/or translation/interpretation services to facilitate the communication with parents.

Curriculum Tailoring and Adaptation:

Students are divided into Chinese and Non-Chinese stream for Chinese lessons in order to cater for individual needs. For Mathematics, students in some levels are streamed according to their abilities.

Home-school Co-operation and School Ethos

Home-School Co-operation:

Open door for parents in daily morning assembly; Parents' Day, seminars, talent show, lunch with principal and workshops are held regularly to keep parents informed of the progress of their children and to promote Home-School co-operation and a mutual understanding. Parent-Teacher Association serves as a communication channel and help parents form a support network; School invites parents to be volunteer helpers in all school functions, parents work with school to provide a healthy and cheerful school life to students.

School Ethos:

Our school was awarded with the "Caring School Award" for 9 consecutive years. We have been awarded with the "Racial Harmony Campus Outstanding Prize"; provide variety supporting schemes to cater for students' growth needs, build up close partnership with parents and the community; build up a caring and loving school campus through Moral, Civic Education, healthy school activities, cross-curricular activities; set up Early Assessment for children with specific learning difficulties; develop students' equality, respect, caring and sense of belonging through a multi-cultural environment.

Future Development

School Development Plan:

1. Strengthen teachers' teaching professionalism
2. Facilitate students' learning through IT teaching
3. Promote Moral Education across the curriculum

Teacher Professional Training & Development:

Organize an overseas or out-town professional development trip to teachers once every year to broaden teachers' horizons and equip themselves; To facilitate sharing, school regularly holds seminar, workshop, development day camp, continuing teacher training programmes and mentorship schemes. School also encourages teachers to take courses and attend workshops at other organisations and institutes.

Fee Remission

Our school offers full school fee remission or 1/2 school fee remission. Needy students, including those from families receiving the Comprehensive Social Security Assistance (CSSA) and students receiving financial assistance provided by the Student Finance Office of the Working Family and Student Financial Assistance Agency (WFSFAA), could apply for fee remission.

- Please visit the web-link in our school's website for details of school fee remission scheme, including the family income limits.

Others

Scholarship Schemes from the School, Po Leung Kuk, Parent-Teacher Association and other associations. Exchange programmes which focus on serving and cultural studies are also available.

#The proposed fee is pending EDB's approval. The fee(s) in previous school year (2018/2019) is/are as follows: \$12,800 (10 installments)

Appendix 5-5

Area & Usage of On Lok Factory Building and Cheong Wah
Factory Building

Area & Usage of On Lok Factory Building and Cheong Wah Factory Building

On Lok Factory Building (BD File Ref: 2/4594/61, Drawing no. 202)		
Type of Use	Units (Unit A to D on G/F-10/F)	Area in m ² (GFA = 18040 sq.ft, assumed with 80% efficiency)
Office	7B, 7C, 7D, 5A, 5C, 3A	2011.1
Industrial	G Floor Unit A to D	1340.8
Warehouse	All remaining Units	11396.5

Cheong Wah Factory Building (BD File Ref: 2/4011/61, Drawing no. 2 and 3)		
Type of Use	Units (Unit B & C on G/F, Unit A to C on 1-10/F)	Total Area in m ² (Workshop area from Building Plans: Unit A= 2590 sq. ft, Unit B = 2632 sq. ft, Unit C = 5012 sq. ft)
Industrial	2B, 3A, 10B G/F Unit B & C	1439.8
Office	All remaining units	7571.0

Appendix 7-1

Historic Aerial Photo

The site in 1963



Site Description: Industrial buildings

The site in 1973



Site Description: Industrial buildings

The site in 1982



Site Description: Industrial buildings

The site in 1989



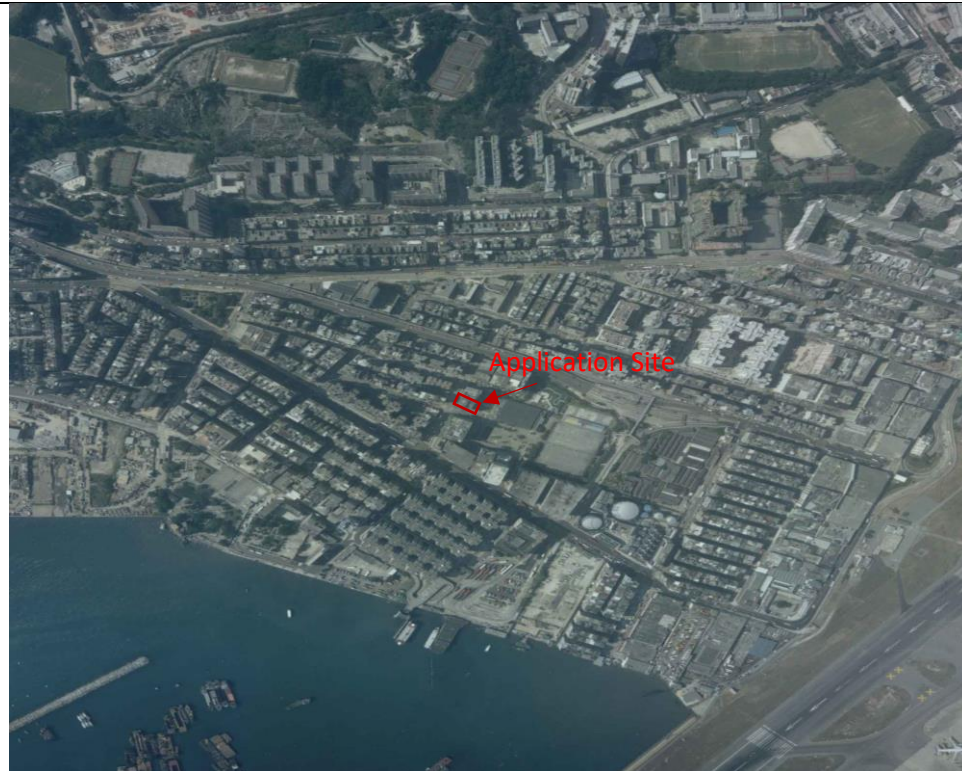
Site Description: Industrial buildings

The site in 1994



Site Description: Industrial buildings

The site in 1997



Site Description: Industrial buildings

The site in 2009



Site Description: Industrial buildings

The site in 2013



Site Description: Industrial buildings

The site in 2014



Site Description: Industrial buildings

The site in 2015



Site Description: Industrial buildings

The site in 2017



Site Description: Industrial buildings

The site in 2020



Site Description: Industrial buildings

Appendix 7-2

Copy of letters which sent to various Government Departments

Ref.: RCLSHR33EI01_0_0001L.22

22 November 2022

Environmental Protection Department
Environmental Compliance Division
Regional Office (East)
5th floor, Nan Fung Commercial Centre, 19 Lam Lok Street
Kowloon Bay, Kowloon

By Fax (2756 8588) & Post

Land Contamination Assessment Study for Planning Application for Proposed Residential Building at 33 Sheung Heung Road, Kowloon - Enquiry for Land Contamination Information

We are conducting a Land Contamination Review for Planning Application for Proposed Residential Development at 33 Sheung Heung Road, Kowloon As required by the "Practice Guide for Investigation and Remediation of Contaminated Land" published by the Environmental Protection Department of the Government of HKSAR (EPD), information pertaining to the change of land uses/past activities/incidents/accidents at the Application Site are required as part of the vetting process.

Of particular interests is whether there are any registered chemical waste producers under your record in the Application Site, any waste disposal record, any accidental spillage record, any submission relating to land contamination assessment and any information you could provide which might be useful for our study. We enclosed herewith a site map of the Application Site for your reference.

Due to the urgency of the project, we would be much appreciated if you could provide the requested information by **10 December 2022**.

Should you have any queries, please do not hesitate to contact the undersigned at 3465 2843 (email: bcytam@ramboll.com) and our Mr. Simon Cheuk at 3465 2837 (email: sskcheuk@ramboll.com). Your feedback on this matter is highly appreciated. Thank you in advance for any assistance you would provide.

Yours faithfully,
For and on behalf of
Ramboll Hong Kong Limited



Mr. Brian Tam
Principal Consultant

Enclosure: Location Plan and Lot Plan of the Application Site

Ref.: RCLSHR33EI01_0_0002L.22

22 November 2022

Fire Services Department
Corporate Strategy Command
Management Group
9th Floor, Fire Services Headquarters Building, 1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon

By Fax (2591 5276) & Post

Dear Sir / Madam,

Land Contamination Assessment Study for Planning Application for Proposed Residential Building at 33 Sheung Heung Road, Kowloon - Enquiry for Land Contamination Information

We are conducting a Land Contamination Review for Planning Application for Proposed Residential Development at 33 Sheung Heung Road, Kowloon As required by the "Practice Guide for Investigation and Remediation of Contaminated Land" published by the Environmental Protection Department of the Government of HKSAR (EPD), information pertaining to the change of land uses/past activities/incidents/accidents at the Application Site are required as part of the vetting process.

Of particular interests are spill and incident reports (including records of fire at the Application Site) that we believe your Department might have record of. Furthermore, we would also like to know whether anywhere of the Application Site had applied or possessed license for dangerous goods storage. We enclosed herewith a site map of the Application Site for your reference.

Due to the urgency of the project, we would be much appreciated if you could provide the requested information by **10 December 2022**.

Should you have any queries, please do not hesitate to contact the undersigned at 3465 2843 (email: bcytam@ramboll.com) and Mr. Simon Cheuk at 3465 2837 (email: sskcheuk@ramboll.com). Your feedback on this matter is highly appreciated. Thank you in advance for any assistance you would provide.

Yours faithfully,
For and on behalf of
Ramboll Hong Kong Limited



Mr. Brian Tam
Principal Consultant

Enclosure: Location Plan and Lot Plan of the Application Site

Ref.: RCLSHR33EI01_0_0003L.22

22 November 2022

Hong Kong Police Force
A Department
Operation Wing
Explosive Ordinance Disposal Bureau
150 Mount Butler Road, Jardine's Lookout,
Hong Kong

By Fax(2203 4273) & Post

Dear Sir / Madam,

Land Contamination Assessment Study for Planning Application for Proposed Residential Building at 33 Sheung Heung Road, Kowloon - Enquiry for Land Contamination Information

We are conducting a Land Contamination Review for Planning Application for Proposed Residential Development at 33 Sheung Heung Road, Kowloon As required by the "Practice Guide for Investigation and Remediation of Contaminated Land" published by the Environmental Protection Department of the Government of HKSAR (EPD), information pertaining to the change of land uses/past activities/incidents/accidents at the Application Site are required as part of the vetting process.

Of particular interests are current and historical explosive storage locations and records at the Application Site, and any explosive spillage and incident reports that we believe your Department might have record of. We enclosed herewith a site map of the Application Site for your reference

Due to the urgency of the project, we would be much appreciated if you could provide the requested information by **10 December 2022**.

Should you have any queries, please do not hesitate to contact the undersigned at 3465 2843 (email: bcytam@ramboll.com) and Mr. Simon Cheuk at 3465 2837 (email: sskcheuk@ramboll.com). Your feedback on this matter is highly appreciated. Thank you in advance for any assistance you would provide.

Yours faithfully,
For and on behalf of
Ramboll Hong Kong Limited



Brian Tam
Principal Consultant

Enclosure: Location Plan and Lot Plan of the Application Site

Ref.: RCLSHR33EI01_0_0005L.22

22 November 2022

Lands Department
Land Administration Office
District Lands Office, Kowloon East
4/F, South Tower, West Kowloon Government Offices, 11 Hoi Ting Road,
Yau Ma Tei, Kowloon

By Fax (2782 5061) & Post

Dear Sir / Madam,

Land Contamination Review for Planning Application for Proposed Residential Development at 33 Sheung Heung Road, Kowloon - Enquiry for Land Contamination Information

We are conducting a Land Contamination Review for Planning Application for Proposed Residential Development at 33 Sheung Heung Road, Kowloon. As required by the "Practice Guide for Investigation and Remediation of Contaminated Land" published by the Environmental Protection Department of the Government of HKSAR (EPD), information pertaining to the change of land uses/past activities/incidents/accidents at the Application Site are required as part of the vetting process.

Of particular interests are information on spillage accidents, illegal/contaminating land uses or uncontrolled dumping uses, current and historical land use information, previous short term tenancy and any information relating to land contamination issues of the Application Site. We enclosed herewith a site map of the Application Site for your reference.

Due to the urgency of the project, we would be much appreciated if you could provide the requested information by **10 December 2022**.

Should you have any queries, please do not hesitate to contact the undersigned at 3465 2843 (email: bcytam@ramboll.com) and Mr. Simon Cheuk at 3465 2837 (email: sskcheuk@ramboll.com). Your feedback on this matter is highly appreciated. Thank you in advance for any assistance you would provide.

Yours faithfully,
For and on behalf of
Ramboll Hong Kong Limited



Mr. Brian Tam
Principal Consultant

Enclosure: Location Plan and Lot Plan of the Application Site

Ref.: RCLSHR33EI01_0_0004L.22

22 November 2022

Planning Department
District Planning Branch
Metro District Planning Division
Kowloon District Planning Office
14/F, North Point Government Offices, 333 Java Road,
Hong Kong

By &Fax (2894 9502) &Post

Dear Sir / Madam,

Land Contamination Assessment Study for Planning Application for Proposed Residential Building at 33 Sheung Heung Road, Kowloon - Enquiry for Land Contamination Information

We are conducting a Land Contamination Review for Planning Application for Proposed Residential Development at 33 Sheung Heung Road, Kowloon As required by the "Practice Guide for Investigation and Remediation of Contaminated Land" published by the Environmental Protection Department of the Government of HKSAR (EPD), information pertaining to the change of land uses/past activities/incidents/accidents at the Application Site are required as part of the vetting process.

Of particular interests are current and historical site information, any change on the land use, future land use and any information relating to land contamination issues of the Application Site. We enclosed herewith a site map of the Application Site for your reference.

Due to the urgency of the project, we would be much appreciated if you could provide the requested information by **10 December 2022**.

Should you have any queries, please do not hesitate to contact the undersigned at 3465 2843 (email: bcytam@ramboll.com) or our Mr. Kyle Kam at 3465 2855 (email: kylekam@ramboll.com), Mr. Simon Cheuk at 3465 2837 (email: sskcheuk@ramboll.com). Your feedback on this matter is highly appreciated. Thank you in advance for any assistance you would provide.

Yours faithfully,
For and on behalf of
Ramboll Hong Kong Limited



Mr. Brian Tam
Principal Consultant

Enclosure: Location Plan and Lot Plan of the Application Site



APPLICATION SITE [REDACTED]

Title: APPLICATION SITE

Project: Assessment Study for Planning Application for Proposed Residential Building at 33 Sheung Heung Road, Kowloon

RAMBOLL

Drawn by: SC

Rev.:

Date: Nov 2022