Attachment 2

Revised Environmental Assessment

Prepared by

Ramboll Hong Kong Limited

PROPOSED RESIDENTIAL REDEVELOPMENT AT LOT 453 IN D.D.399, TING KAU

ENVIRONMENTAL ASSESSMENT STUDIES REPORT

Date	**May 2025**
Prepared by	**Tak Wong** **Principal Environmental Consultant**
Signed	
Approved by	**Tony Cheng** **Senior Manager**
Signed	
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Ramboll Hong Kong Limited

21/F, BEA Harbour View Centre
56 Gloucester Road, Wan Chai, Hong Kong

Tel: (852) 3465 2888
Fax: (852) 3465 2899
Email: hkinfo@ramboll.com

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1. INTRODUCTION

1.1 Background and Objectives

1.1.1 The Project Proponent submit this S16 Planning Application which seeks to allow for increase in Plot Ratio from 0.4 to 0.75 for a permitted house redevelopment with access improvement at the application site.

1.1.2 The application site is currently occupied by a 2-storey domestic house (the main building). It is zoned as "Residential (Group C)"("R(C)") on the Approved Tsuen Wan West Outline Zoning Plan (OZP) No. S/TWW/21.

1.1.3 Under the proposed development, a 2-storey house over a storey of car park has been proposed to accommodate the extended family groups of Applicant. An Indicative Development Scheme ("IDS") of the proposed redevelopment is provided in **Appendix 1.1**.

1.1.4 This Environmental Assessment Studies (EAS) is prepared in support of the S16 Planning Application. The intention of this EAS is to demonstrate that there are no unacceptable adverse environmental impacts as a result of the development.

1.2 Site Location and its Environs

1.2.1 The Subject Site, namely La Casetta, is located at Lot 453 in D.D.399, the east of Ting Kau. The Application Site covers a total area of about 772.9 m^2. To the east, north of site is surrounded by slope and Tuen Mun Road further apart. To the west of Subject site is residential house The Wonderland and local road Ting Yat Road separated by man-made slope. To the south of site is the existing retaining wall abutting Castle Peak Road – New Ting Kau Section.

1.2.2 Site location plan is provided in **Figure 1.1**.

1.3 Proposed Development

1.3.1 The Application proposes to redevelop the existing 2-storey domestic house to a single residential unit of 2 floors and 1 storey car park. An Indicative Development Scheme ("IDS") has been prepared to demonstrate the viability of the proposed redevelopment as shown in **Appendix 1.1**.

1.3.2 The tentative occupation year of the proposed development is **Year 2028**.

1.4 Appraisal of Environment Impact

1.4.1 The proposed development is located between Tuen Mun Road and Castle Peak Road, potential traffic noise impact and air quality impact is assessed in **Section 2** and **Section 3** respectively and necessary mitigation measures are proposed. As there are water sensitive receiver such as gazetted beaches located to southeast of proposed development, potential water quality impact is assessed in **Section 5**. Potential waste management implication during construction and operation phases are also assessed in **Section 4** .

2. NOISE IMPACT ASSESSMENT

2.1 Introduction

2.1.1 The surrounding area are mainly roads, village houses, green belt. A pump house is located at about 19m to the west of development boundary, separated by a nullah and Ting Yat Road. There is no railway noise source identified in the vicinity (i.e. 300m) of the Subject Site. Therefore, no impact is anticipated on the Proposed Development.

2.1.2 Road traffic noise impact assessment is prepared to address potential road traffic noise impact on the noise sensitive uses of the Proposed Development and to recommend mitigation measures, where necessary.

2.2 Fixed Noise Appraisal

2.2.1 A pump house is located at about 19m to the west of development boundary, separated by a nullah and Ting Yat Road, with no noticeable sound emission nearby during inspections on December 2023 and March 2024. Dominant noise climate was traffic noise from Castle Peak Road.

2.2.2 There is no other fixed noise source identified within 300m study boundary having noticeable sound emission perceived at Subject Site. There is no fixed noise sources or rail noise source within 300m study boundary that would contribute to significant adverse noise impact on proposed development.

2.3 Assessment Criteria

2.3.1 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.

2.3.2 The Proposed Development comprises of a residential house. Under the HKPSG, the criterion for road traffic noise impact on domestic premises (habitable rooms) is $L_{10(1\text{-}hour)}$ 70 dB(A). This criterion applies to uses which rely on opened windows for ventilation.

2.4 Assessment Methodology

2.4.1 In this assessment, the potential noise impact arising from nearby road carriageways on the development has been assessed. It involved the prediction of future noise impacts on Noise Sensitive Receivers (NSRs) arising from traffic flows along road carriageways situated within or in the vicinity of the Application Site. Calculation of predicted road traffic noise based on the worst case peak hour traffic flows projected within a 15-year period from the target completion date (Year **2028**) of the Proposed Development. For worst-case scenario evaluation, the assessment year was chosen to be year **2043**, which has the maximum forecasted traffic flow within the 15-year period. The peak hour traffic data in assessment year has been adopted in the road traffic noise impact assessment.

2.4.2 The traffic forecast data is prepared by project traffic consultant and attached in **Appendix 2.1**. The traffic forecast methodology tally with that in Traffic Impact Assessment (TIA). Endorsement of the traffic forecast data methodology from the Transport Department (TD) is provided in **Appendix 2.1**. Traffic consultant's confirmation that the traffic forecast for Noise Impact Assessment has adopted the abovementioned methodology is also provided in **Appendix 2.1**.

2.4.3 The U.K. Department of Transport's procedure "Calculation of Road Traffic Noise" (CRTN) was used to predict the hourly $L_{10(1\text{-}hour)}$ noise levels generated from road traffic

at selected NSRs. Computer plot of modelling layout of both scenarios are provided in **Appendix 2.2**.

2.4.4 Practicable environmental mitigation measures have been recommended, where necessary. The predicted noise levels were compared with the relevant HKPSG noise standards (i.e. $L_{10(1\text{-hour})}$ 70 dB(A)).

2.5 Noise Conscious Design

2.5.1 The noise emission from nearby traffic road network was duly considered in design of Master Layout Plan. On the other hand, there are a number of site constraints limiting the layout design for accommodate the 2 residential units. Details of the layout considerations are briefly summarised below.

2.5.2 Site Constraints

(i) Under the Land Grant Conditions (New Grant No. 4991, Lot No. 453 in Demarcation District No.399) Building height is limited to 3 storeys including carpark. As such, there is limited room to increase vertical separation from Castle Peak Road by raising the elevation of NSRs

(ii) There site is located on uphill platform of 3 surrounding existing registered slopes. There's limited room for increasing setback from Castle Peak Road.

(iii) In addition to the surrounding slopes, to the west of Application Site is access to neighbouring residential "The Wonderland". There's limited area for allocation of building footprint or orienting floor area.

2.5.3 The noise conscious design elements considered and adopted are summarized in.

Table 2-1 Noise Conscious Design Used

Noise Conscious Design Strategy	Application in Proposed Development
Building Setback - Increasing separation between the noise sources and sensitive use with a view to minimizing the noise impact	Within site constraints as discussed in **Section 2.5.2**, building setback is maximized, with 3m from site boundary or 18m from Castle Peak Road is allowed.
Building Orientation and Internal Layout Design - Arranging noise tolerant portions of a building instead of living room and bedroom to face the noise source with a view to minimizing the impact to the residents' daily life Fixed glazing can also be adopted used to face noise source, while openable windows for ventilation would face less noisy directions instead.	Due to linear shape of subject site and limitation in floor number, habitable rooms are allocated on both elevations facing Castle Peak Road and Tuen Mun Road.
Noise Tolerant Building / Carpark - Arranging noise tolerant buildings in between the noise source and the sensitive uses with a view to screening off the noise impact	The site is linear in East-West direction located on elevated platform. The width is narrow (about 12m to 25m) and there is insufficient area to accommodate a separate noise tolerant building.
Podium / Deck - Arranging noise sensitive uses on top of a podium so as to increase the separation between the noise	Dominant traffic noise is from Castle Peak Road which is separated from subject site

Noise Conscious Design Strategy	Application in Proposed Development
source and the residential premises. The podium itself can at the same time screen off noise in case that the noise source is in proximity	by 18m. Decking over is considered not practicable.
Noise Shielding Wall / **Architectural Fin** - to screen the traffic noise with a view to minimizing the impact to the affected premises.	Due to shape of site, façade of habitable room is nearly parallel to Castle Peak Road. Use of architectural fin is considered ineffective to mitigate the noise exceedance level of about 5 dB(A).
Façade Acoustic Treatments such as Acoustic Balcony, Enhanced Acoustic Balcony and Acoustic Window	Acoustic Windows (Baffle Type), Enhanced Acoustic Balconies (Baffle Type) will be provided at facades where traffic noise exceedance predicted as mitigation measures.
Barrier / Low Noise Road Surfacing (LNRS) – road side barrier or podium edge barrier to protect sensitive uses within shadow zone, LRNS reduce traffic noise by absorbing tyre/road interaction noise or reducing tyre thread impact and shock noise.	Low noise road surface on Tuen Mun Road have also been accounted in noise evaluation. The site is elevated above CPR. G/F and 1/F domestic floor are situated at about +48mPD and +53mPD, i.e. about 23m to 28m above CPR (about +25mPD). There's also insufficient area between building façade and site boundary for erection of noise barrier.

2.6 Noise Sensitive Receivers (NSRs)

2.6.1 A number of NSRs, representative of the opening of residential house for prescribed ventilation purpose which are likely to be subject to the highest traffic noise impacts, are selected for the assessment. All assessment points were taken at 1.2m above floor and 1m away from the façade of openable ventilation openings of rooms of sensitive uses (living rooms, bedrooms, En Suites, Banquet Room, Dinning Room, Grand View Lounge, Maid's Room, Theatre Room, Study Room).

2.6.2 **Figure 2.1** shows the location of the representative noise sensitive receivers for road traffic noise impact assessment.

2.7 Assessment Result under Base Case Scenario

2.7.1 **Appendix 2.3** shows the predicted road traffic noise impacts on the selected NSRs at base case scenario. Noise exceedances are found with a maximum noise level of **75** dB(A) under base case scenario.

2.8 Use of Noise Mitigation Measures

2.8.1 In view of predicted traffic noise exceedance above, noise mitigation measures are considered. Innovative noise mitigation measures are being explored in recent years. According to EPD's website regarding innovative noise mitigation design and measures (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 acoustic window and conventional window).

Consideration of Innovative Noise Mitigation Designs (INMD) in Practice Note (PN)

2.8.2 In the "*Practice Note on Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact*" in ProPECC PN 5/23 (PN), different configurations of Innovative Noise Mitigation Designs (INMD) in form of acoustic window and enhanced acoustic balcony are suggested. The configurations are listed out in **Table 2.2** and **Table 2.3** below.

Table 2.2 Key Parameters of Acoustic Window (Baffle Type) of the Reference Case in PN and the Associated Noise Reduction Effects

Type	Parameters [1]					RNR[2] in dB(A), Orientation[3]			
	Room Area, sqm	Inner Opening, sqm	Outer Opening, sqm	Overlapping Length, mm	Gap width between panels, mm	Parallel	30°-60°	30° + 1.5m fin	60° + 1.5m fin
AW_PN_8	8	0.5046	0.522	≥100	100 - 175	6.0	7.0	8.0	9.0
AW_PN_18	18	1.125	1.125			7.0	8.0	9.0	10.0

[1] No other ventilation opening should be provided at the same room at noise exceedance location(s)

[2] RNR: Noise attenuation in terms of Relative Noise Reduction (RNR); Further reduction of 1.5dB(A) with application of Sound Absorptive Material (SAM) with Noise Reduction Coefficient (NRC) of not less than 0.7 applied at top and outer opening side of mullion.

[3] Orientation: Horizontal Angle to Dominant Line Source

Table 2.3 Key Parameters of Enhanced Acoustic Balcony (Baffle Type) of the Reference Case in PN and the Associated Noise Reduction Effects

Type	Parameters								RNR[2] in dB(A), Orientation[3]	
	Room Area, sqm	Min. Balcony Width, sqm	Min. Balcony Depth, mm	Min. Parapet Height [4], mm	Inner Opening, sqm	Outer Opening, sqm	Min. Overlapping Length, mm	Gap Width, mm	Parallel	30°-60°
EAB_PN_14	14	1440	1300	1450	2.265	2.541	100	100	8.0	11.0

EAB_PN_18	18	2055	1300		2.541	2.541			9.0	11.0

[1] No other ventilation opening should be provided at the same room at noise exceedance location(s)

[2] RNR: Noise attenuation in terms of Relative Noise Reduction (RNR); Further reduction of 1.5dB(A) with application of Sound Absorptive Material (SAM) with Noise Reduction Coefficient (NRC) of not less than 0.7 applied at top and outer opening side of mullion.

[3] Orientation: Horizontal Angle to Dominant Line Source

[4] In addition to solid parapet, **full height side** wall is provided on one side of balcony

Use of Acoustic Window with reference to PN 5/23

2.8.3 Predicted traffic noise level at Ensuite 5 (**1F-04**) and Ensuite 7 (**1F-06**) are 75 dB(A) (i.e. 5 dB(A) noise exceedance). The sizes of these habitable rooms are about 16sqm. Acoustic Window design would be based on configuration AW_PN_18 as listed in **Table 2.2** above, with sliding panel provided behind openable side-hung window at a gap width of 100mm, with overlapping length not less than 100mm and outer opening area will be limited to not more than 1.125 sqm. For ease of reference, this configuration would be abbreviated as "**AW_PN_18**" in this document.

Room Size Adjustment

2.8.4 It is understood that the room size will affect the sound attenuation performance of the acoustic window (baffle type), therefore, further adjustment is needed by using the equation "10 x log (R_{ref}/R_{design})", where R_{ref} and R_{design} refer to the area of the room of the reference case respectively. In addition, for conservative approach, the corrected noise level would not be greater than the reference case even the room size of the Proposed Development is larger than the reference case.

2.8.1 The RNR evaluated for AW_PN_18 at 1F-04 and 1F-06 are presented in **Appendix 2.4**. For conservative purpose, the assumed noise reduction will be not higher than the predicted noise exceedance of 5 dB(A) in this assessment.

Use of Enhanced Acoustic Balcony

2.8.2 Predicted traffic noise at balcony of Ensuite 4 on 1/F (**1F-05**) is 75 dB(A). The room size is about 20sqm. INMD in form of Enhanced Acoustic Balcony (Baffle Type) is recommended. The proposed configuration consists of sliding panel behind outer opening, with not less than 275mm overlapping, 100mm air gap between sliding panel and outer opening, and outer opening area not larger than 3.2sqm. For ease of reference, this configuration would be abbreviated as "**EAB_NPE**" in this document.

2.8.3 With reference to PN 5/23 INMD design EAB_PN_18 as listed in **Table 2.3** above, the reference design consist of with single full height side wall, maximum outer opening area about 2.54sqm, overlapping of 100mm, gap width of 100mm can provided relative noise reduction of 9.0 dB(A) when façade is parallel to dominant noise source. In the subject case, the balcony depth is about 0.7m only and thus the length of full height side wall is less 0.6m less than 1.3m (balcony depth in reference case). Accounting the noise reduction of about 2 dB(A) analogue to architectural fin of 1.3m length, as well as about 1dB(A) increase in intruding sound power due to enlarged opening from 2.54sqm in reference case to proposed 3.2sqm in proposed case, RNR in magnitude of not less than 6 dB(A) (9.0-2.0-1.0 = 6.0) can be expected conservatively. Having said that, the proposed configuration consists of 2 sides of full height wall, the overlapping

length of sliding panel behind outer opening (275mm) is also more than 2 times to that in reference case (100mm), the order of 6 dB(A) RNR is considered conservative.

2.8.4 With reference to another residential development project at North Point (reference project, NPE), sliding panel is applied behind balcony opening for living room of 38sqm. The design concept and mechanism of acoustic balcony are basically similar to the acoustic window (Baffle Type). Based on the on-site noise measurement results of the reference case – NPE, balcony with acoustic sliding panel only (i.e. no MPA at the sliding panel, no solid balustrade and no absorption material at balcony ceiling) at living rooms were found to be able to achieve sound attenuation performance of up to 8.8 dB(A) when compared with the conventional window system. Configuration of the reference case is provided in **Table 2.4** below.

Table 2.4 Key Parameters of Enhanced Acoustic Balcony (Baffle Type) of the Reference Case in NPE and the Associated Noise Reduction Effects

Type	Parameters					RNR[2] in dB(A), Orientation[3]
	Room Area, sqm	Inner Opening, sqm	Outer Opening, sqm	Min. Overlapping Length, mm	Gap Width, mm	
EAB_NPE	38	3.75	3.23	275	100	8.8

[1] No other ventilation opening should be provided at the same room at noise exceedance location(s)

[2] RNR: Noise attenuation in terms of Relative Noise Reduction (RNR); RNR achieved with no solid parapet provided, no Sound Absorptive Material (SAM) provided at balcony ceiling and no Micro-Perforated Absorber (MPA) provided.

2.8.5 The proposed INMD configuration (e.g. outer opening area, overlapping length, gap width) is not worse than the EAB_NPE. With room size adjustment applied with respect to **Section 2.8.8** above, a RNR of 5.9 dB(A) is evaluated as detailed in **Appendix 2.4**.

2.8.6 In view of 2 reference cases above, noise reduction of not less than 5.9 dB(A) is considered achievable. For conservative purpose, the assumed noise reduction will be not higher than the predicted noise exceedance of 5 dB(A) in this assessment.

Use of Enhanced Acoustic Balcony, Enhanced Acoustic Window

2.8.7 Sizes of the habitable rooms on ground floor (corresponding to NSRs **GF-04, GF-05, GF-06 and GF-07**) are ranged from about 32 sqm to 44sqm. Predicted traffic noise level at these sensitive facades are 75 dB(A), i.e. 5 dB(A) exceedance to assessment criteria. Ventilation opening size of more than 2sqm would be required for prescribed ventilation requirement under Building (Planning) Regulations with respect to room size. In this regard, acoustic windows listed in **Table 2.2** above (for reference rooms of 8sqm and 18 sqm respectively) cannot be directly applied because the outer opening area were developed for rooms of much smaller area (0.5 to 1 sqm). Besides, these ground floor habitable rooms area (32 to 44 sqm) are much larger than those in reference acoustic balconies design in the PN (room sizes 14 to 18 sqm).

2.8.8 Other reference INMD design with room size similar to the project case are therefore referenced. With reference to another residential development project at North Point (reference project, NPE), sliding panel is applied behind balcony opening for living room

of 38sqm. (Namely, "Enhanced Acoustic Balcony – NPE" or "EAB_NPE") The design concept and mechanism of acoustic balcony are basically similar to the acoustic window (Baffle Type). Based on the on-site noise measurement results of the reference case – NPE, balcony with acoustic sliding panel only (i.e. no MPA at the sliding panel, no solid balustrade and no absorption material at balcony ceiling) at living rooms were found to be able to achieve sound attenuation performance of up to 8.8 dB(A) when compared with the conventional window system.

2.8.9 Similar design of sliding door applied at balcony is proposed for openings of these ground floor habitable room with noise exceedance. Moreover, the aforementioned key parameters of this system that will affect the sound attenuation performance will be the same as or not worse than the reference case - NPE (i.e. 100mm gap width, not less than 275mm overlapping and the openable area would not be larger than the reference case - NPE). The corresponding rooms include Mian Living Room (**GF-03**), Grand View Lounge (**GF-05**), Dinning Room (Western)(**GF-06**) and Banquet Room (**GF-07**). The same configuration is adopted for **1F-05** as discussed in **Section 2.8.2** and the configuration is abbreviated as "**EAB_NPE**" for ease of reference.

2.8.10 Despite of the EAB_NPE design referenced, it should be noted that **GF-04** and **GF-07** are façade windows, and thus balcony floor and soffit are not provided. With reference to typical acoustic balcony design where there are (i) balcony floor, (ii) sound absorptive ceiling and (iii) solid parapet where noise reduction of 2 to 2.5 dB(A) is provided. Without the screening given by balcony floor, while there's no reflected sound from a balcony ceiling, it is expected that a loss of noise reduction would be not more 2dB(A) as compared to the reference case. As provided in **Appendix 2.4**, with provision of EAB_NPE, the predicted noise level are not less than 2 dB(A) below assessment criteria. As such no residual exceedance is anticipated with the proposed design referenced to EAB_NPE. For ease of reference, this acoustic window with reference to EAB_NPE configuration is abbreviated as "**EAW_NPE**" in this document.

2.8.11 As conservative, assumed noise reduction for EAB_NPE and EAB_NPE would be limited to noise exceedance level.

Use of Fixed Glazing

2.8.12 For locations not necessary to provide ventilation opening, however, close to noise source and with exceedances, fixed glazing will be employed.

2.8.13 Two façade locations (**GF-03, 1F-03**) are specified at G/F and 1/F for use of fixed glazing shown in **Figure 2.2.** As shown in **Appendix 2.3**, the maximum predicted traffic noise level at these locations are 73 dB(A) and 72 dB(A) i.e. upto 3 dB(A) exceedance to assessment criterion. With reference to Appendix 4.4 in Chapter 9 of the Hong Kong Planning Standard and Guidelines (HKPSG), glazing of minimum 6mm thickness will be applied to these fixed glazing.

Summary of Mitigation Measures

2.8.14 A summary of proposed INMD at sensitive facades are provided in **Table 2.5** below.

Table 2.5 Summary of INMD proposed at Sensitive Facades

Habitable Room	RA, sqm	NAP	PNL, L_{A10}, dB	Consideration of Noise Mitigation Measure
Ground Floor				

Habitable Room	RA, sqm	NAP	PNL, L_{A10}, dB	Consideration of Noise Mitigation Measure
Main Living Room	43.5	**GF-03**	73	FG
		GF-04	75	EAW_NPE
Grand View Lounge	33.1	**GF-05**	75	EAB_NPE
Dining Room (Western)	31.7	**GF-06**	75	EAW_NPE
Banquet Room	37.6	**GF-07**	75	EAW_NPE
First Floor				
Ensuite 6	17.4	**1F-03**	72	FG
Ensuite 5	15.7	**1F-04**	75	AW_PN_18
Ensuite 4	19.8	1F-05	75	EAB_NPE
Ensuite 7	15.7	**1F-06**	75	AW_PN_18

Notes:

RA = Room Area; **NAP** = Noise Assessment Point; **PNL**= Predicted Noise Level , L_{A10} in dB; **INMD** = Innovative Noise Mitigation Design; **FG**: Fixed Glazing (Not being relied on for opened ventilation)

2.9 Assessment Result of the Mitigated Scenario

2.9.1 The traffic noise impacts on the NSRs under mitigated scenario of the worst case scenario were predicted and provide in **Appendix 2.4**.

2.9.2 With the noise mitigation measures proposed, the Proposed Development would comply with the HKPSG road traffic noise standard criteria of 70 dB(A) (100% compliance).

2.10 Conclusion

2.10.1 There is no fixed noise sources or rail noise source within 300m study boundary that would contribute to significant adverse noise impact on proposed development.

2.10.2 Quantitative traffic noise impact assessment is carried out with respect to HKPSG criteria. The assessment results indicated that the HKPSG road traffic noise standard can be met at all worst-affected NSRs selected for assessment under worst case scenario with proposed mitigation measures. No insurmountable traffic noise impact is anticipated.

3. AIR QUALITY IMPACT ASSESSMENT

3.1 Introduction

3.1.1 The assessment qualitatively assesses the potential air quality impacts during construction phase and operational phase of the proposed development. For the operational phase, the impact due to the vehicular emissions from the surrounding roads and other possible emissions upon the sensitive receivers of the Proposed Development have been reviewed and also compares the design with the recommended buffer distance in the Hong Kong Planning Standards and Guidelines (HKPSG). The potential odorous emission from the proposed development is also addressed.

3.2 Construction Phase Air Quality Impact

3.2.1 Demolition and construction works will induce potential fugitive dust and gaseous emissions. Individual environmental impacts during construction (including demolition) of the project have been qualitatively addressed in this section.

Legislation

3.2.2 Assessment criteria for aerial emission is based on the Hong Kong's Air Quality Objectives (AQOs), and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM) for controlling air pollutants. It shall be noted that the Air Pollution Control (Amendment) Bill 2024 (Amendment Ordinance) for tightening five AQOs (namely 24-hour AQO for SO2, annual and 24-hour AQOs for RSP and annual and 24-hour AQOs for FSP) and adding three new objectives for 24-hour NO2, peak season of O3 and 24-hour CO have been published in the gazette on 15 November 2024. The new AQOs took effect on 11 April 2025. The new AQOs is summarised in **Table 3.1** below. The new AQOs is adopted for the air quality impact assessment.

Table 3.1 Hong Kong Air Quality Objectives

Pollutant	Averaging time	Concentration limit [i] ($\mu g/m^3$)	Number of exceedances allowed
Sulphur dioxide (SO_2)	10-minute	500	3
	24-hour	40	3
Respirable suspended particulates (PM_{10}) [ii]	24-hour	75	9
	Annual	30	Not applicable
Fine suspended particulates ($PM_{2.5}$) [iii]	24-hour	37.5	18
	Annual	15	Not applicable
Nitrogen dioxide (NO_2)	1-hour	200	18
	24-hour	120	9
	Annual	40	Not applicable
Ozone (O_3)	8-hour	160	9
	Peak Season	100	Not applicable
Carbon monoxide (CO)	1-hour	30,000	0

Pollutant	Averaging time	Concentration limit [i] (μg/m³)	Number of exceedances allowed
	8-hour	10,000	0
	24-hour	4000	0
Lead (Pb)	Annual	0.5	Not applicable

Notes:

[i] All measurements of the concentration of gaseous air pollutants, i.e. sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide, are to be adjusted to a reference temperature of 293 Kelvin and a reference pressure of 101.325 kilopascal.

[ii] Respirable suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 10μm or less.

[iii] Fine suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 2.5μm or less.

[iv] Shaded cell in orange denotes the proposed new AQOs

Air Sensitive Receivers

3.2.3 There is residential developments and open space located within the 500m from the Subject Site, which are considered as representative Air Sensitive Receivers (ASRs). These representative ASRs are identified as shown in **Table 3.2** below.

Table 3.2 Representative Air Sensitive Receivers

Ref	Air Sensitive Receiver	Type	Shortest Distance from the Subject Site (m)
A01	The Wonderland	Residential	12m
A02	Tsing Ming Kok (淨明閣)	Residential	47m
A03	N.331 Castle Peak Road (淑園)	Residential	52m
A04	No.321 Castle Peak Road	Residential	79m

Construction Air Quality

3.2.4 The application site, which includes the redevelopment of residential development and retaining wall modification, occupies an area of about 772.9 sqm in total. The residential development includes reconstruction of the existing building and modification of retaining wall to enhance slope stability. Earthworks (excavation and backfilling) is required for site formation, construction of the basement and foundation as well as retaining wall modifications. The tentative earthwork area, where excavation or site formation is involved, is estimated to be about 397.8 sqm. This earthwork area has already included the demolition area, i.e. the building footprint for the part of existing two storey building which is to be demolished. Yet, it shall be noted that final works areas are subjected to further site investigations and detailed construction design at later stage. Based on estimation by the engineer, there is 1,260 m^3 of estimated

exaction material which will be delivered off-site. According to the tentative programme, construction period is planned from January 2027 to December 2028, i.e. 24 months. There is tentatively 12 months (Jan 2027 to Dec 2027) for tree removal, foundation and slope works. Based on 7m^3 per truck and 12 working hour per day, there will be less than 1 trip of dump truck per hour travelling to and from the work site.

3.2.5 Fugitive dust and gaseous emissions will be the major potential source of air quality impact during the construction phase of the proposed development. 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. In addition, dust potentially generated as a result of the concreting works for the construction of superstructure, floor slab, etc. would be insignificant as the concrete would be pre-mixed and transferred to the Subject Site by concrete lorry mixer. In view of the scale of work as abovementioned, it is anticipated that not more than 3 mechanical equipment such as excavator, dump truck, piling rig, mobile crane, concrete lorry mixer will be used simultaneously at the work site, adverse air quality impact is not anticipated during the construction state with mitigation measures in place.

3.2.6 There are 7 potential concurrent Projects identified within 500m from project site boundary, as indicated in **Appendix 3.2** and summarised in **Table 3.3** below.

- Item P1 (A/TWW/114) is access road construction. It is about 224m separated from proposed development.
- Items P2, P3, P4 and P7 are house developments with site area ranges from 579m^2 to 1285m^2 only. All of them are separated from proposed development by Castle Peak Road. Based on site inspection on 11 September 2024 and 14 April 2025, there's not yet signs of construction work or construction equipment noted at application sites of Item P2, P3 and P4. Construction equipment (generator) was noted at application site of Item P7, where the roof of the building structure have already completed and potential of concurrent impact with the proposed development is anticipated low.
- Item P5 is application for change of premises use from Residential Group (C) to eating place with 113 sqm restaurant only. The Item P5 location is distant from proposed development.
- Item P6 is proposed conversion of existing Royal View Hotel into Residential Group(B) development. The works included refurbishment for existing building and minor scale demolition of existing structures only. This Item separated from proposed development by 266m.

Table 3.3 Potential Concurrent Project

Project		Site Area [2]	Details	Shortest Distance from Site Boundary, m
P1	A/TWW/114 [1]	About 1662 m^2	Access Road for Residential Development	224m
P2	A/TWW/124 [1]	About 579.9 m^2	House Development	105m

Project		Site Area [2]	Details	Shortest Distance from Site Boundary, m
			(2 block, 3 storeys)	
P3	A/TWW/110-1 [1]	About 1285 m^2	House Development (2 blocks, 3 storeys)	53m
P4	A/TWW/127 [1]	About 1215.3 m^2	House Development (1 Block, 2 storeys)	365m
P5	A/TWW/128 [1]	Not Available [2]	Eating Place	245m
P6	Y/TWW/7 [1]	Abut 6431 m^2	Conversion of existing Royal View Hotel into Residential Group(B).	266m
P7	A/TWW/103-1	About 600.4 m^2	House Development (1 Block, 2 storeys)	429m

[1] Information referenced to Town Planning Board Statutory Planning Portal 3 (TPBSPP). Application number is quoted.
[2] Site Area not available based on TPBSPP gist information, while restaurant area is 113m^2.

3.2.7 In view of the separation from the potential concurrent projects to the proposed development, the development nature and site area of potential concurrent projects as abovementioned, the additional contribution to the construction phase air quality impact arising from the proposed development is considered limited and insignificant.

3.2.8 The tentative construction period of proposed development is from January 2027 to November 2028, as provided in **Appendix 3.3**. The major construction dust and gaseous emission would be from foundation and slope works stage and 12 months have been allowed in the tentative programme. It is recommended that the future Contractor of the proposed development to closely liaise with concurrent projects to avoid cumulative air quality nuisance on nearby ASRs due to construction by programme arrangement of major dust and gaseous emission activities.

Mitigation Measures for Fugitive Dust and Gaseous Emission

3.2.9 With the implementation of sufficient suppression measures as stipulated under the APCO, Air Pollution Control (Construction Dust) regulation (Cap 311R) and good site practices (as detailed in **Section 3.2.14** to **3.2.17** below), fugitive dust and gaseous 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 control measures while carrying out demolition activities or construction activities. In general, non-blasting demolition method (such as top down demolition method) will probably be adopted for

the demolition of the existing building. During the demolition works, relevant control measures (e.g. impervious dust screens) shall be implemented.

3.2.10 To mitigate potential air quality impacts, all control measures recommended in the Air Pollution Control (Construction Dust) Regulation, where applicable, shall be implemented. Relevant control measures include:

- The works area for site clearance shall be sprayed with water before, during and after the operation so as to maintain the entire surface wet;
- Restricting heights from which materials are to be dropped, as far as practicable to minimise the fugitive dust arising from unloading/ loading;
- Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from the bodies and wheels. However, all spraying of materials and surfaces should avoid excessive water usage;
- Where a vehicle leaving a construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials will not leak from the vehicle;
- Erection of hoarding of not less than 2.4 m high from ground level along the site boundary, where appropriate;
- Any stockpile of dusty materials shall be covered entirely by impervious sheeting; and/or placed in an area sheltered on the top and 4 sides;
- All dusty materials shall be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet; and
- To reduce the traffic induced dust dispersion and re-suspension, the travelling speed of vehicles within the site should be controlled.

3.2.11 In addition, emission control during the construction phase shall be carried out in accordance with the requirements of the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation. The emissions of non-road mobile machinery (NRMMs) include mobile machines and vehicles powered by internal combustion engines used primarily off-road. All NRMMs operating on-site which are subject to the emissions control of the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation shall be approved/exempted (as the case may be) and affixed with the requisite approval/exemption labels. To mitigate potential air quality impact, exempted NRMMs shall be avoided as far as practicable.

3.2.12 Appropriate exhaust emissions controls should also be adopted as required under Air Pollution Control (Fuel Restriction) Regulation. Electric power supply shall be provided for on-site machinery as far as practicable and diesel generators shall be avoided to minimize the gaseous and Particulate Matter (PM) emissions.

3.2.13 The recommended mitigation measures for protection of nearby ASRs are described below:

Good Site Management

3.2.14 Good site management is important in reducing potential air quality impacts to an acceptable level. As a general guide, the contractor(s) shall maintain a high standard of housekeeping to prevent fugitive dust emissions. Loading, unloading, handling and

storage of fuel, demolished debris and wastes or by-products should be carried out in a manner so as to minimise the release of visible dust emission.

3.2.15 Appropriate working methods should be devised and arranged to minimise dust emissions and to ensure any installed control system and/or measures are operated and/or implemented in accordance with their design merits. No free falling of debris should be allowed. Debris should be lowered by a hoist to the ground, preferably with an enclosed tunnel.

3.2.16 A high standard of housekeeping shall be maintained. Any piles of materials accumulated on or around the work areas shall be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas shall be carried out in a manner that does not generate fugitive dust emissions. Prior to cleaning, the materials should be handled properly to prevent fugitive dust emission.

3.2.17 Frequent mist spraying should be applied on dusty areas. The frequency of spraying will depend upon local conditions such as rainfall, temperature, wind speed and humidity. The amount of mist spraying should be just enough to dampen the materials without over-watering, which could result in surface water runoff.

Dust Emissions from Site Traffic

3.2.18 Dust emission from construction traffic is generated predominantly from the travelling of waste removal lorries. Areas within the Subject Site where there are regular vehicle movements should have a hard surface. Speed controls at an upper limit of 10km/hr should be imposed and their movements should be confined to designated roadways within the Subject Site. All dusty vehicle loads should have side and tail boards covered by tarpaulin extending at least 300mm over the edges. Wheel-wash troughs and hoses should be provided at exit points of the Subject Site.

3.2.19 "Recommended Pollution Control Clauses for Construction Contracts" is available on the EPD website which set out the recommended air pollution control measures to be implemented by the contractor(s) during the construction stage of the Project.

3.2.20 With the adoption of good practices, adverse air quality impact during the construction stage is not anticipated .

3.3 Operational Phase - Vehicular Emissions Impact

3.3.1 The potential impact due to vehicular emissions from road traffic have been considered. Castle Peak Road and Tuen Mun Road are the major road segments close to the Project. There's also local distributor Ting Yat Road as confirmed by the Transport Department (**Appendix 3.1**). In accordance with the HKPSG, the buffer distance between roads kerb and permitted uses is given in Table 3.1 of Chapter 9 of HKPSG.

3.3.2 According to Annual Traffic Census 2023, Tuen Mun Road – section from Sham Tseng to Tsing Long Highway – Ting Kau Bridge is classified as Expressway (EX), while the Castle Peak Road – Ting Kau Section is classified as Rural Road (RR). Road type of nearby road network are provided in **Appendix 3.1**. According to the Table 3.1 of Chapter 9 of HKPSG, the recommended buffer distance from Tuen Mun Road is >20m for Trunk Road.

Buffer distance of >10m from Castle Peak Road – Ting Kau Section (Rural Road) is allowed as a conservative approach.

3.3.3 As shown in **Figure 3.1a** to **Figure 3.1c**, the minimum buffer distance from the kerb side of Tuen Mun Road and Castle Peak Road to the subject site boundary are about **50m** and **15m** respectively**.** A part of private access (at the entrance from Ting Yat Road) on the western edge of application boundary is located within 5m buffer zone of Ting Yat Road. This area is solely used as private access, no air sensitive uses, including openable windows, fresh air intake of mechanical ventilation and recreational uses in the open area would be located within the buffer zone. The HKPSG recommended buffer distance requirements are fulfilled.

3.3.4 The buffer distances between the subject site and the nearby roads will comply with the recommended requirements; as such, it is considered that the Proposed Development would not be subject to unacceptable vehicular emission impact.

3.3.5 The development will be natural ventilated, and no fresh air intake would be provided. The carport is located on the basement with 4 car parking spaces and 1 motorcycle space. It is naturally ventilated on 3 sides. Given the limited parking space and the fact that the majority of vehicles are private cars with limited air emissions, along with the carport's opening sides not facing the nearest ASR (i.e. the Wonderland), no adverse air quality impact on any nearby ASRs, including the proposed development, is anticipated from the proposed carport The design synopsis regarding basement carport is extracted in **Appendix 3.4**.

3.4 Operational Phase - Industrial Chimney Emissions Impact

3.4.1 Regarding the industrial chimney emissions, there is no active chimney nor odour emission source identified within 200m from the subject site based on the site visit carried on 31 March 2021, 28 December 2023, 11 September 2024 and 14 April 2025.

3.5 Operational Phase - Odorous and gaseous emissions

3.5.1 There is no planned odourous nor gaseous emission sources at the proposed development.

3.6 Conclusion

3.6.1 The Application proposes to redevelop the existing 2-storey domestic house to a 2-storey domestic house with carport. Based on site visit, there is no active chimney nor odour emission source within 200m from the Subject Site.

3.6.2 A carport with 5 parking spaces will be naturally ventilated and its opening sides will not face any ASRs. There is no exhaust outlet and there is no odorous or air pollutant emission from the proposed E&M room. No adverse air quality impact is anticipated.

3.6.3 There will be no air sensitive uses (including openable windows, fresh air intake of mechanical ventilation and recreational uses in the open area) located within the buffer zones of the nearby roads.

4. WASTE MANAGEMENT IMPLICATIONS

4.1 Introduction

4.1.1 This section reviews the types of waste that will arise during the construction and operation phases of the Project.

4.2 Environmental Legislation and Guidelines

4.2.1 References have been made to the following relevant Hong Kong legislation governing waste management and disposal. Directly relevant legislations include:

- The Waste Disposal Ordinance (Cap. 354) and subsidiary legislations, such as the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C), set out requirements for the storage, handling and transportation of all types of wastes; Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N), set out the charges for public fill, sorting and landfill.
- Land (Miscellaneous Provisions) Ordinance (Cap 28);
- Public Health and Municipal Services Ordinance (Cap 132) – Public Cleansing and Prevention of Nuisance Regulation – control of disposal of general refuse;

4.2.2 Other relevant documents and guidelines that are applicable to waste management and disposal include:

- Project Administration Handbook for Civil Engineering Works (PAH).
- ETWB TCW No. 22/2003A - Additional Measures to Improve Site Cleanliness and Control Mosquito Breeding on Construction Sites;
- ETWB Technical Circular (Works) No. 19/2005 - Environmental Management on Construction Sites;
- DEVB TC(W) No.8/2010 - Enhanced Specification for Site Cleanliness and Tidiness (supersedes WBTC No.6/2002 and ETWB TCW No.6/2002A);

- Works Branch Technical Circular No. 2/93 - Public Dumps;
- Works Branch Technical Circular No. 2/93B - Public Filling Facilities;
- Works Bureau Technical Circular No. 12/2000 - Fill Management;
- Development Bureau Technical Circular (Works) No. 06/2010 - Trip-ticket System for Disposal of Construction and Demolition Materials;
- Practice Note for Authorized Persons and Registered Structural Engineers – Construction and Demolition Waste (PNAP ADV – 19) issued by the Buildings Department;

- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes;
- A Guide to the Chemical Waste Control Scheme;
- Code of Practices and Guidelines for Asbestos Control and Handling; and
- ProPECC PN2/97 Handling of Asbestos Containing Materials in Building
- Works Branch Technical Circular (WBTC) No. 32/92, The Use of Tropical Hard Wood on Construction Site
- WBTC No. 19/2001 - Metallic Site Hoardings and Signboards;
- WBTC No. 12/2002, Specification Facilitating the Use of Recycled Aggregates
- Monitoring of Solid Waste in Hong Kong 2023;
- Relevant guidelines posted by EPD through EPD's website (https://www.epd.gov.hk/epd/english/environmentinhk/waste/manage_facility/ypark.html) and Y Park's website (https://www.ypark.hk/zh-hant/); and

- Guidelines on "Yard Waste Reduction and Treatment" issued by Development Bureau; and
- "Development Bureau Technical Circular (Works) No. 4/2020 Tree Preservation".

4.3 Impact Assessment

Construction Phase

4.3.1 The construction activities to be carried out for the proposed Project would generate a variety of wastes that can be divided into distinct categories based on their composition and ultimate method of handling. These activities include demolition of existing building and site clearance, earthworks (excavation) for the construction of the basements, foundation works, car lift and retaining walls and superstructure construction. Tentative excavation extent of basement 389 m^2 in area with depth varies from 2m to 16.5m tentatively. Tentative excavation extent is provided in **Appendix 4.1** for reference. The identified waste types include:

- Construction and demolition (C&D) materials, comprising inert and non-inert materials, from the construction works;
- chemical waste from any maintenance of construction plant and equipment;
- asbestos-containing materials (ACM), if any; and
- general refuse from the workforce

4.3.2 It is recommended that different types of wastes should be segregated, stored, transported and disposed of separately in accordance with EPD's required procedures. Inert C&D materials (or public fills) such as soil, rock, concrete, etc. should be re-used on-site as filling materials or off-site as public fill at public fills reception facilities. The non-inert C&D materials (or C&D waste) such as timber, yard waste, paper, etc. should be reused or recycled as far as possible. Landfill disposal should be considered as the last resort for waste handling. The volumes of C&D materials generation and re-use are estimated by the Project Engineer, SMEC (Asia) Ltd. The estimated volumes of inert and non-inert C&D material generated from the construction of the Project are presented in **Table 4.1** below, together with the estimated volumes of inert C&D material to be re-used on site and delivered to public fill reception facilities.

Table 4.1 Estimated Quantities of C&D Materials (m^3)

Generated From	Estimated Quantities of C&D materials (m^3)			
	C&D Materials to be Generated	**Inert C&D Materials to be Reused On-site**	**Inert C&D Materials to be delivered to Public Fill Reception Facilities**	**Non-inert C&D Materials to be Generated [1]**
Excavation	1,260	0	1,260	0
Demolition of Existing Building	200	0	200	0
Others: Site Clearance, Basement, Foundation, Works, car lifts, retaining walls, superstructures	200	0	0	200
Total	1,660	0	1,460	200

Remarks: [1] non-inert C&D materials such as timber, yard waste, paper, etc. should be separated for reuse and/or recycling as far as practicable. Materials that cannot be reused nor recycled will be disposed of at landfill. For handling of timber material and yard waste, please also refer to **Section 4.3.3** to **Section 4.3.4**.

4.3.3 The clearance/pruning of existing vegetation to facilitate site access and site formation works will generate timber material and yard waste. These material shall be handled in accordance with the principles of reduce, reuse, and recycle (3Rs). The following guidelines shall be taken into account when handling yard waste:

- Relevant guidelines posted by EPD through EPD's website (https://www.epd.gov.hk/epd/english/environmentinhk/waste/manage_facility/ypark.html) and Y Park's website (https://www.ypark.hk/zh-hant/); and
- Guidelines on "Yard Waste Reduction and Treatment" issued by Development Bureau; and
- "Development Bureau Technical Circular (Works) No. 4/2020 Tree Preservation".

4.3.4 Specifically, to minimize the generation of yard waste, the project proponent shall:

- Avoid unnecessary removal or excessive pruning of trees. Preserve trees in their original locations and implement tree transplanting when on-site preservation is not feasible.
- Segregate various types of yard waste and shred wood to facilitate reuse and recycling.
- Reuse yard waste on-site for a variety of purposes (e.g., decomposition and composting, recreational and decorative uses, and mulching in planting areas, etc.).
- Identify recycling options (e.g. delivery to Y-park) for yard waste that cannot be directly reused on-site.
- Where yard waste generation is unavoidable, sorting of yard waste for recycling and reuse on-site should always be prioritized. Yard waste shall be separated from C&D material to facilitate recycling, such as delivering them to YPARK so as to minimize

the quantity of waste to be disposed of at the landfill site. Where appropriate, the Contractor should be responsible to cut and shred the yard waste in order to meet the collection requirement of the recycling outlet for processing. Disposal of yard waste directly at landfills should only be regarded as the last resort when no alternatives are available.

4.3.5 The amount of chemical waste that will be generated from the construction work will depend on the Contractor's on-site maintenance practices and the number of mechanical plant and vehicles used on-site. Regarding the nature of the construction activities involved, chemical waste such as lubricating oil or solvent generated are not expected to be in large quantity. It is preliminarily estimated that less than 50L/month and hence approximately 1.2m^3 of chemical waste will be generated during a tentative 24- month construction period. The amount of chemical waste to be generated shall be quantified in the Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) to be prepared by the Contractor in the construction stage.

4.3.6 The Contractor is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.

4.3.7 Chemical wastes should be handled in accordance with the "*Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes"* and should be collected by licensed chemical waste collectors for subsequent disposal and appropriate treatment at licensed waste disposal facilities, for example the Chemical Waste Treatment Facility Centre in Tsing Yi. Mitigation and control requirements for chemical waste are provided in the "*Recommended Pollution Control Clauses for Construction Contracts*" available in EPD website mentioned the handling, storage and disposal of chemical wastes. Recommended key control measures are listed below:

Containers used for storage of chemical wastes should:

- Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;
- Have a capacity of less than 450L unless the specifications have been approved by the EPD; and
- Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.

The storage area for chemical wastes should:

- Be clearly labelled and used solely for the storage of chemical waste;
- Be enclosed on at least 3 sides;
- Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;
- Have adequate ventilation;
- Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and
- Be arranged so that incompatible materials are appropriately separated.

Chemical waste should be disposed of:

- Via a licensed waste collector; and

- To a facility licensed to receive chemical waste, such as the CWTC which also offers a chemical waste collection service and can supply the necessary chemical waste storage containers.

With good management and site particles, adverse environmental impacts should not result.

Asbestos-containing Materials (ACM)

4.3.8 The existing buildings has long been built after year 1979. The use of ACM in building material and building services material are not anticipated in general.

4.3.9 Asbestos waste is categorised as chemical waste under the Waste Disposal (Chemical Waste) Regulation. The Project Proponent should conduct an asbestos investigation by a registered asbestos consultant prior to demolition of existing building structure. The investigation should reveal the presence, quantity and location of Asbestos Containing Materials (ACM). Asbestos waste will be handled in accordance with requirements under Air pollution Control ordinance, Waste Disposal Ordinance, practice note for registered contractors 15 issued by the Building Departments as well as the Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste issued by EPD, prior to demolition of the existing building. Should there be any ACM found in the existing buildings, any demolition works of these buildings should engage Registered Asbestos Contractors and the asbestos waste should be handled and disposed by licensed chemical waste collector to designated landfill site for secure burial in accordance with the "*Code of Practice on the Handling, Transport and Disposal of Asbestos Waste*" issued by the EPD. The latest designated landfill site is West New Territories (WENT) landfill in Nim Wan, Tuen Mun to receive asbestos waste.

4.3.10 The workers in the construction site and the site office will generate a variety of general refuse which requires disposal. It consists mainly of food waste, aluminum cans, waste paper etc. Since the information on the number of workers on-site is not available at this preliminary stage, a maximum of 20 workers working simultaneously and a waste generation rate of about 0.65 kg per worker per day are assumed. It is estimated that the daily amount of general refuse that would be generated is in the order of 13 kg.

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

4.3.12 The Contractor(s) should be responsible for ensuring that waste is collected by approved waste collectors and appropriate measures are taken to minimise adverse impacts to the surrounding environment, such as dust generation. The Contractor(s) must also ensure that all necessary waste disposal permits are obtained.

4.3.13 The mitigation measures for construction phase are recommended based on the waste management hierarchy principles. Recommendations of (i) good site practices, (ii) waste reduction measures, (iii) waste collection, storage and transportation, (iv) Handling of Excavated C&D Material (v) On-site Sorting of C&D Materials and (v) Transportation of C&D Materials are described in following sub-sections.

(i) Good Site Practices

- Implementation of the recommended mitigation measures in the "*Recommended Pollution Control Clauses for Construction Contracts*" available in EPD website, to minimise the potential environmental impacts resulting from the storage, handling

and transportation of inert C&D materials, non-inert C&D materials, chemical wastes and general site wastes.

- The Contractor is required to prepare a Waste Management Plan (WMP) including areas described in PNAP ADV-19 and submit to the Project Proponent for agreement.
- The Contractor is required to nominate approved personnel, such as a site manager, to be responsible for good site practices, and making arrangements for collection of all wastes generated at the site and effective disposal to appropriate facilities.
- Training of site personnel in proper waste management and chemical waste handling procedures.
- The Contractor is required to maintain records of quantities of waste generated, recycled and disposed.
- Provision of sufficient waste and recyclable collection points and arrange regular collection for disposal and recycling/reuse.
- Covering material during heavy rainfall.
- Locating stockpiles to minimise potential air quality, water quality and visual impacts; and

(ii) Waste Reduction Measures

- Segregation and storage of different types of waste in different containers to enhance reuse or recycling of materials and their proper disposal. Recyclable materials such as paper, metal (e.g. cans), plastic and glass. Recyclable wastes shall be segregated from non-recyclable waste to be stored in enclosed bins or compaction units. Recyclable material shall be collected in appropriate frequency to ensure no over stacking of recyclable wastes. .
- Separate labelled bins shall be provided to segregate aluminium cans from other general refuse generated by the work force, and to encourage collection of by individual collectors;
- Any unused chemicals or those with remaining functional capacity shall be recycled.
- The Contractor is encouraged to use recycled aggregates where appropriate
- Maximizing the use of reusable steel formwork to reduce the amount of C&D material. The excavated fill material shall be used on-site as backfill material as far as possible.
- For site hoardings and signboards, if applicable, all component should be specified in metal (using bolt and nut jointing method wherever possible) to reduce generation of C&D waste. Reference should be made to WBTC No. 19/2001.
- Sort out demolition debris and excavated materials from demolition works to recover reusable / recyclable portions (i.e. soil, rock, broken concrete, etc.);
- Inert C&D materials (or public fills) such as soil, rock, concrete, etc. should be re-used on-site as filling materials or off-site as public fill at public fills reception facilities.
- non-inert C&D materials (or C&D waste) such as timber, yard waste, paper, etc. should be reused or recycled as far as possible. Specific measures to minimize generation of yard waste shall also refer to **Section 4.3.4**
- Minimize over ordering of concrete, mortars and cement grout by doing careful check before ordering.
- Proper storage and site practices to minimise the potential for damage or contamination of construction materials.

(iii) Waste Storage, Collection and Transportation

- Provision of appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.
- Non-inert C&D materials such as top soil should be handled and stored well to ensure secure containment of the materials;
- Ensuring that waste is collected by approved waste collectors and appropriate measures are taken to minimise adverse impacts to the surrounding environment.
- A reputable waste collector should be employed by the contractor to remove general refuse from the site on a daily basis in general.
- Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors, if applicable
- The Contractor is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities;
- The Contractor is required to separate chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility. Specific mitigation measures for handling of chemical waste shall also refer to **Section 4.3.7** to **Section 4.3.9**

(iv) Excavated C&D Materials;

- Inert C&D materials should be temporarily stored on-site for use as backfill where practicable. Surplus inert C&D materials should be delivered to Public Fill Reception Facilities (PFRFs).
- Inert C&D materials should be properly covered with tarpaulin or similar impervious sheeting to prevent dust nuisance and site runoff.

(v) On-site Sorting of C&D materials

- Prior to disposal of non-inert C&D materials, it is recommended that wood, steel, glass and other metals shall be separated for re-use and/or recycling; while Inert C&D materials shall be utilized as fill materials to minimise the quantity of waste to be disposed of to the landfill.
- The Contractor shall designate area for temporary storage of C&D materials in site layout and allocate space for on-site sorting as far as practicable.
- The Contractor shall be required via contractual requirement to implement a trip-ticket system with reference to DEVB TCW No. 06/2010 to ensure that the disposal of C&D materials is properly documented and verified.
- With reference to the DEVB TCW No. 6/2010, the Authorized Person (AP) shall write to the Public Fill Committee (PFC) through Fill Management Section of Civil Engineering and Development Division (CEDD) to request a designated disposal ground for incorporation into tender documents.
- The Contractor shall be prohibited from disposing of C&D materials to place other than the designated disposal ground, and any alternative disposal ground proposed by the Contractor shall comply with requirement in the DEVB TCW No. 6/2010 and approved by the Authorized Person (AP) in prior.

- The Contractor shall be required to install video recording system to monitor the vehicular exit/entrance of the site and checking the disposal records provided by disposal grounds against survey records routinely, if applicable.

(vi) Transportation of C&D Materials

- All dump trucks engaged on-site for delivery of inert and non-inert C&D material from the site to the designated disposal location, including PFRFs, landfill etc., should be equipped with Global Positioning System (GPS) or equivalent system for tracking and monitoring of their travel routings and parking locations by the Contractor to prohibit illegal dumping and landfilling of materials; and
- The data collected by GPS or equivalent system should be recorded properly to check and analyze the travel routing and parking locations of dump trucks engaged on site
- In order to avoid dust impacts, any vehicle leaving a works area carrying inert or non-inert C&D materials should have their load covered up before leaving the construction site

Operation Phase

4.3.14 The major portion of solid waste arising from the redevelopment will be domestic waste. The storage and handling of such waste may give rise to adverse environmental effects. According to the Monitoring of Solid Waste in Hong Kong 2023 prepared by EPD, the domestic waste disposal per capita per day was 0.89 kg while the recovery rate of domestic waste was 21%. The domestic waste generation rate is calculated 1.127 kg per capita per day (0.89 / (1-21%)). By applying this figure to the projected maximum population of about 10 residents after occupation of the development, approximately **11.3 kg** of domestic waste would be generated from the proposed development per day.

4.3.15 Waste generation from the residential units will be collected and removed regularly by an appointed party. Waste separation and recycling will be implemented, where practicable. General refuse and non-recyclables will be stored in enclosed bins and disposed offsite on a regular basis for avoidance of pest and odour nuisance. Recycling bins for recyclable materials (including aluminium can, waste paper, glass bottles and plastic bottles) will be transported off-site for recycling on a regular basis. Provided that the environmental control measures are properly implemented, no adverse environmental impact would be anticipated with respect to solid waste management.

4.4 Conclusion

4.4.1 Provided that the identified waste arising from the construction works are handled, transported and disposed of using approved methods and that the recommended good site practices are adhered to, adverse environmental impacts are not anticipated.

4.4.2 Waste will be removed regularly by an appointed party. Provided that the environmental control measures are properly implemented, no adverse environmental impact would be anticipated with respect to solid waste management.

5. WATER QUALITY IMPACT ASSESSMENT

5.1 Introduction

5.1.1 The subject site is located at inland urban developed area. Within the 500m study area of the subject site, there are Water Sensitive Receivers (WSRs), such as Ting Kau Beach, natural stream to the West of the Wonderland and the downstream nullah, box-culvert, as well as streams or overland flows, as identified in **Figure 5.1.** Potential Water Quality Impact (WQI) of the construction and operation phases of the Proposed Development is addressed in the following section.

5.2 Project Construction Phase

5.2.1 The management and mitigation strategy of the wastewater generated from the construction work of the proposed development should be addressed and implemented. Environmental control measures have been proposed if considered necessary to reduce and minimize the identified water quality impacts on WSRs.

5.3 Relevant Legislation, Standards and Guidelines for Construction Phase

Water Pollution Control Ordinance (Cap.358)

5.3.1 The Water Pollution Control Ordinance (Cap. 358), in existence since 1980, is the major legislation relating to the protection and control of water quality in Hong Kong. According to the Ordinance and its subsidiary legislation, Hong Kong waters are divided into ten water control zones (WCZ). Corresponding statements of Water Quality Objectives (WQO) are stipulated for different water regimes (marine waters, inland waters, bathing beaches subzones, secondary contact recreation subzones and fish culture subzones) in each of the WCZ based on their beneficial uses. The assessment area is located within the Victoria Harbour (Phase 1) WCZ.

ProPECC PN 1/94

5.3.2 The other relevant guideline is the Professional Persons Environmental Consultative Committee Practice Note 1/94 "Construction Site Drainage" (ProPECC PN 1/94) which provides guidelines for the handling and disposal of construction discharges. This ProPECC Note is generally applicable for control of site runoff and wastewater generated during the construction of the Project.

ProPECC PN 5/93

5.3.3 Another relevant guideline is the Professional Persons Environmental Consultative Committee Practice Note 5/93 "Drainage Plans subject to Comment by the Environmental Protection Department" (ProPECC PN 5/93) which provides guidelines for the drainage plan of the construction site. This ProPECC Note is generally applicable for control of discharge of storm drains, foul sewers, drainage of commercial and industrial wastewater. Also, the control of sewage treatment and disposal is stipulated in this ProPECC.

Technical Memorandum

5.3.4 Besides setting the WQOs, the WPCO controls effluent discharging into the WCZs through a licensing system. The Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS) issued under Section 21 of the WPCO gives guidance on the permissible effluent discharges based on the type of receiving waters (foul sewers, storm water drains, inland and coastal waters). The limits given in the TM control the physical, chemical and microbial quality of effluents. Under the TM, effluents discharged into the sewerage system and the inshore and marine waters of the WCZ are subject to standards for

particular volumes of discharge. These standards are defined by EPD and specified in licence conditions for any discharge within a WCZ. Any effluent discharge during the construction and operation of the Project would be required to comply with the required discharge standards.

5.4 Potential Impacts during the Construction of the Project

5.4.1 Site construction activities will inevitably have the potential to generate wastewater. As such works should be carried out in such a manner as to minimize adverse impacts on the water quality. Apart from general construction activities, pollution sources could include:

- Construction site runoff and general construction activities;
- Sewage generated by construction workforce; and
- Potential accidental spillage of chemicals, e.g. oil, diesel and solvents etc.

General Construction Activities

5.4.2 All works for proposed development are land-based. The land-based construction works may have the potential to cause water pollution. Various types of construction activities would generate wastewater. These include general cleaning and polishing, wheel washing, dust suppression sprays and utility installation, which would contain high concentrations of suspended solids. Without proper control, these could lead to increase in suspended solids level in the neighbouring storm drain.

5.4.3 Adoption of the guidelines and good site practices for handling and disposal of construction discharges as part of the construction site management practices (as given in **Section 5.5**) would minimise the potential impacts.

Construction Site Runoff

5.4.4 Construction Site surface runoff contains high levels of sediments, other suspended solids and contaminants. Potential sources of pollution include runoff and erosion from the site surfaces, drainage channels, bentonite slurries and other grouting materials, concrete washout and drainage from dust suppression sprays, fuel, oil and lubricants from construction vehicles and other equipment.

5.4.5 Sufficient silt removal facilities should be installed to settle out sediment prior to discharge. Such facilities shall be properly designed in accordance with guidelines from the Civil Engineering and Development Department (CEDD) to achieve the desired mitigating effect. Typically, a detention time not less than 5 minutes for maximum design flow of inlet should achieve adequate sediment removal. Channels or earth berm or sandbag barriers should be provided on site to properly direct surface runoff to such silt removal facilities. Sediment traps, channels and manholes should be maintained, and the deposited silt and grit should be removed on regular basis.

Sewage Effluent from Construction Workforce

5.4.6 Water pollution due to site facilities, e.g. toilets could be the source of pollution if appropriate measures are not implemented properly in respect of storage and discharge.

5.4.7 In this construction site, portable chemical toilets will be provided. According to "Reference Materials on Construction Site Welfare, health and safety measures" Section 5.6.10, chemical toilets should be provided at a minimum rate of about 1 per 25 workers. The facility should be serviced and cleaned by a specialist contractor at regular intervals. Sewage generated from the construction workforce will be contained in chemical toilets and be tanked away. It is anticipated construction workforce would

not cause adverse water quality impact after implementation of all recommended measures.

Liquid Spillage

5.4.8 To prevent spillage of chemicals, including fuel, solvents, oils and lubricants, it is recommended that all stocks should be stored within proper containers and sited at sealed and paved areas, preferable surrounded by bunds.

5.4.9 "Recommended Pollution Control Clauses for Construction Contracts" (RPCC) also recommends appropriate wastewater control measures to be implemented at the construction site by the contractor. The RPCC is available on EPD website.

5.4.10 The quality of any effluent discharges from the construction site should meet the standards specified in the Technical Memorandum – Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters.

5.5 Mitigation Measures during the Construction of the Project

5.5.1 The site practices outlined in ProPECC PN 1/94 Construction Site Drainage should be implemented as far as practicable to minimise the potential water quality impacts from various construction activities and construction site runoff.

5.5.2 The Contractor is required to apply to the EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. The beneficial uses of the treated effluent for other on-site activities such as dust suppression sprays, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase, monitoring works should be carried out in accordance with the discharge license.

Wheel Washing Water

5.5.3 The wheels of all vehicles should be washed before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable. Wash water should be recycled whenever possible to minimise the generation of wastewater and should have sand and silt removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.

Accumulation of Solid Waste Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering nearby storm drains and inland watercourses. Stockpiles of cement and other construction materials should be kept covered when not being used.

5.5.4 Rubbish and litter from construction sites should also be collected and disposed offsite on a regular basis to prevent spreading of rubbish and litter from the site area.

Construction Site Runoff

5.5.5 Exposed soil surfaces should be covered by a tarpaulin or similar material during rainstorms to prevent the washing away of construction materials into any drainage system, watercourses and inshore water. Other measures which are proposed to be implemented before, during, and after rainstorms, as appropriate, are summarized in ProPECC PN 1/94. The surface run-off from construction sites as detailed below shall

also be incorporated into the Construction Site Drainage Management Plan where practicable as an integral part of good practice:

- Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/ silt removal facilities such as sand traps, silt traps and sediment basins. Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries should be provided where necessary.
- Sedimentation basins and sand traps designed in accordance with the requirements of ProPECC Note PN 1/94 should be installed at the construction site for collecting surface runoff.
- Silt removal facilities, channels and manholes should be maintained, and the deposited silt and grit should be removed regularly, and at the onset of and after each rainstorm to ensure that these facilities are functioning properly.
- Construction work should be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation of soil could not be avoided in these months, temporarily exposed surfaces should be covered, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds.
- Slope exposure should be minimized where practicable especially during the wet season. Exposed soil surfaces should be protected from rainfall through covering the temporarily exposed slope surfaces with tarpaulin or the like.
- Earthworks final surfaces should be well compacted, and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed. Also, appropriate drainage like intercepting channels should be provided when necessary.
- Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.
- Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.
- Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm runoff from getting into foul sewers. Discharge of surface runoff into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.
- Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast and actions to be taken during or after rainstorms.
- Drainage facilities must be adequate for the controlled release of storm flows.
- High loading of suspended solids in construction site runoff should be prevented through proper site management by the contractor.
- Haul roads should be protected by crushed rock, gravel or other granular materials (i.e. hard paved) to minimize discharge of contaminated runoff.

Accidental Spillage

5.5.6 Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. Common chemical cabinets would be used to store the fuel tanks and other chemical substances in order to prevent spillage of fuels and solvents to the nearby watercourses. All waste oils and fuels should be collected in designated tanks prior to disposal. Chemical wastes should be properly stored, collected and treated for compliance with the requirements set out in the Waste Disposal Ordinance and its subsidiary Waste Disposal (Chemical Waste)(General) Regulation. The relevant requirements are as follow:

- Storage in large containers only with the approval of the Director of Environmental Protection.
- Labelling of every container should be in proper format.
- Storage area for the containers should have adequate space and associated features such as at least 3 sides of wall, roof and ventilation system.
- During waste collection and delivery, waste producer and collector should follow the requirement for the trip ticket.

5.5.7 Drainage serving an open oil filling point, if any, should be connected to storm drains via a petrol interceptor with peak storm bypass, if present.

Sewage

5.5.8 Temporary sanitary facilities, such as sufficient chemical toilets, should be employed in the works areas. The toilet facilities should be more than 30 m away from any watercourses. A licensed contractor would be responsible for the cleaning and maintenance of the chemical toilets on a regular basis. The number of the temporary sanitary facilities required for the construction sites would be subject to later detailed design, the capacity of the chemical toilets, and contractor's site practices.

5.5.9 Notices would be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction of the Project. Regular environmental audit on the construction site would be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.

5.5.10 Provided that sewage is not discharged directly into storm drain or inland waters and temporary sanitary facilities are used and properly maintained, and subject to the adoption of good site practice and the proper implementation of recommendation under this Section by the contractor, no adverse water quality impact will be anticipated.

Groundwater

5.5.11 According to ProPECC PN 1/94, groundwater pumped out of wells etc. for the lowering of ground water level in basement or foundation construction, and groundwater seepage pumped out of tunnels or caverns under construction, if any, should be discharged into storm drains after the removal of silt in silt removal facilities.

Boring and Drilling Water

5.5.12 According to ProPECC PN 1/94, water used in ground boring and drilling for site investigation or rock/soil anchoring should as far as practicable be recirculated after sedimentation. When there is a need for final disposal， the wastewater should be discharged into storm drains via silt removal facilities.

Bentonite Slurries

5.5.13 According to ProPECC PN 1/94, bentonite slurries used in diaphragm wall and bore-pile construction should be reconditioned and reused wherever practicable. If the disposal

of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.

5.5.14 If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewers, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards.

5.6 Monitoring and Audit Requirements

5.6.1 Water quality impacts on the identified WSRs during the construction of the Project can be readily mitigated through implementation of standard mitigation measures and good housekeeping practices. Adverse water quality impact is not expected during construction of the Project. Water quality monitoring and audit is considered not necessary during the construction of the Project. However, regular site inspections should be taken to inspect the construction activities and works area in order to ensure the recommended mitigation measures are properly implemented

5.7 Potential Impacts and Mitigation Measures during Operation of the Project

5.7.1 As mentioned in **Section 5.1.1**, there are WSRs within the 500m study area of the proposed development, the management and mitigation strategy of the wastewater generated from the operation of the proposed development should be addressed and implemented.

5.8 Relevant Legislation, Standards and Guidelines for Operation Phase

5.8.1 The ProPECC PN 5/93, Drainage Plans subject to Comments by Environmental Protection Department, provides guidelines and practices for handling, treatment and disposal of various effluent discharges to stormwater drains and foul sewers, as discussed at **Section 5.3.3**. The design of site drainage and disposal of site effluents generated within the proposed development area should follow the relevant guidelines and practices as given in the ProPECC PN 5/93.

5.9 Storm Water Discharge

5.9.1 During operation, the surface runoff during rainfall events which is known as non-point source of pollution would be the only potential water quality impact. Fallen leaves, particles, litter from open areas, which is a source of organic and nutrient pollutants, can be washed into the drainage system during heavy rainfall if it is not properly controlled. Pollutants contributed by non-point source are often bound or adsorbed onto particles, thus an effective stormwater management system will be the removal of pollution sources prior to rainstorm and the provision of degritting/ screening facilities that collect sediment. As particles settle out, the associated pollutants will also settle out (then removed from stormwater).

5.9.2 Under normal condition, runoff carrying pollutants will not be generated in low rainfall intensity, but increased runoff may occur during heavy rainfall condition. The first flush flow would carry most of the pollutants and the subsequent overland flow generated from rainstorms is expected to be uncontaminated. Thus, prevention of "first flush" pollution in stormwater runoff will be an effective way in controlling pollution at source and to abate pollutants.

5.10 Best Management Practices (BMPs) for Stormwater Discharge

5.10.1 Surface runoff can be controlled by good drainage design and implementation of BMPs. The proposed development has adopted the following BMPs:

- *Erosion Control*

  If uncontrolled, exposed surfaces may contribute to sediment laden in stormwater runoff and cause water pollution. The proposed development site is either hard paved or covered by landscaping area with appropriate planting species in order to eliminate any exposed surface.

- *Prevention of "First Flush" Pollution*

  Appropriate drainage system will be constructed for the proposed development in order to control its surface runoff. During detailed design, site drainage system of the development will be designed in such way that surface runoff from the proposed development will be directed towards the internal surface drains, where appropriate drainage system with control facilities will be proposed. Additional paved U-channels with screening facilities will also be provided along the edge of the development site to avoid uncontrolled spillage of runoff.

- *Devices for Removal of Pollutants*

  In addition to the above, screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening off large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system. It is expected that most of the large substances in stormwater runoff would be removed with such devices so as to prevent it from entering the drainage system. Road gullies with standard design and silt traps and oil interceptors should be incorporated during the detailed design to remove particles present in stormwater runoff.

5.11 Summary

5.11.1 Water quality impacts from construction are associated with the general construction activities, construction site run-off and sewage effluent from construction workforce, while the water quality impacts from operation are associated with normal urban surface runoff only. Potential water quality impacts can be controlled by implementing the recommended mitigation measures. With the implementation of mitigation measures, no adverse water quality impact on the identified WSRs is anticipated.

6. CONCLUSION

6.1.1 The Application proposes to redevelop the existing 2-storey domestic house and to residential unit of 2 floors and 1 storey basement car park. In order to confirm the environmental acceptability of the Application, Noise Impact Assessment, Air Quality Impact Assessment, Waste Management Implication Assessment, Water Quality Impact Assessment were carried out to examine the impacts associated with the Proposed Development.

Noise

6.1.2 There is no fixed noise sources or rail noise source within 300m study boundary that would contribute to significant adverse noise impact on proposed development. Quantitative traffic noise impact assessment is carried out with respect to HKPSG criteria.

6.1.3 The assessment results indicated that the HKPSG road traffic noise standard can be met at all worst-affected NSRs selected for assessment under worst case scenario with proposed mitigation measures. No insurmountable traffic noise impact is anticipated.

Air Quality

6.1.4 There is no active chimney nor odour emission source within 200m from the Subject Site. There will be no air sensitive uses (including openable windows, fresh air intake of mechanical ventilation and recreational uses in the open area) located within the buffer zones of nearby roads.

6.1.5 A carport with 5 parking spaces will be naturally ventilated and its opening sides will not face any ASRs. There is no exhaust outlet and there is no odorous or air pollutant emission from the proposed E&M room. No adverse air quality impact is anticipated.

Waste Management Implications

6.1.6 Provided that the identified waste arising from the construction works are handled, transported and disposed of using approved methods and that the recommended good site practices are adhered to, adverse environmental impacts are not anticipated.

6.1.7 Waste will be removed regularly by an appointed party. Provided that the environmental control measures are properly implemented, no adverse environmental impact would be anticipated with respect to solid waste management.

Water Quality

6.1.8 Water quality impacts from construction are associated with the general construction activities, construction site run-off and sewage effluent from construction workforce, while the water quality impacts from operation are associated with normal urban surface runoff only. Potential water quality impacts can be controlled by implementing the recommended mitigation measures. With the implementation of mitigation measures, no adverse water quality impact on the identified WSRs is anticipated.

Figures

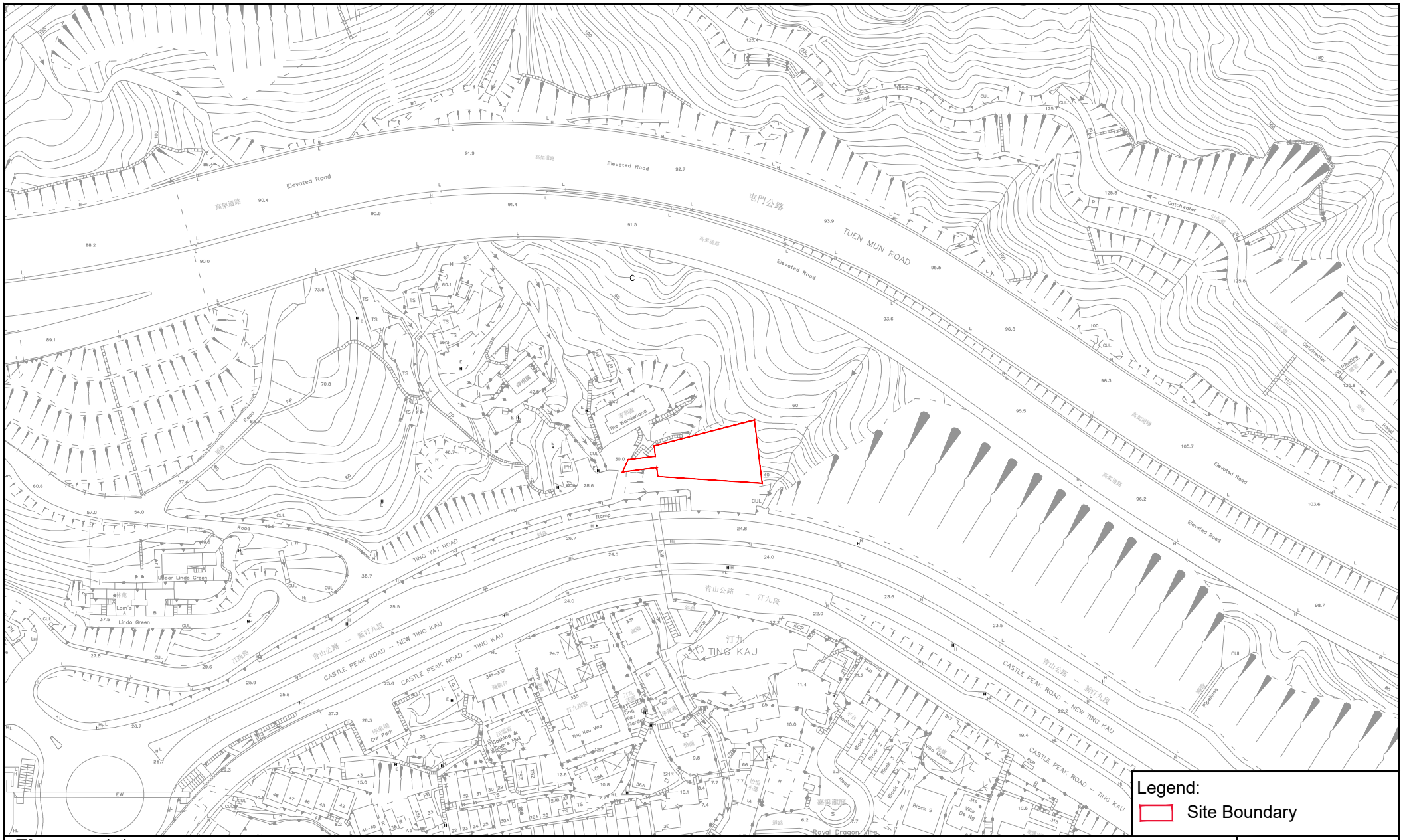

Figure: 1.1

Title: Location of Subject Site and its environ

Project: Proposed Redevelopment at Lot 453 in DD399, Ting Kau

RAMBOLL

Drawn by: CL

Checked by: TW

Rev.: 1.0

Date: Mar 2024

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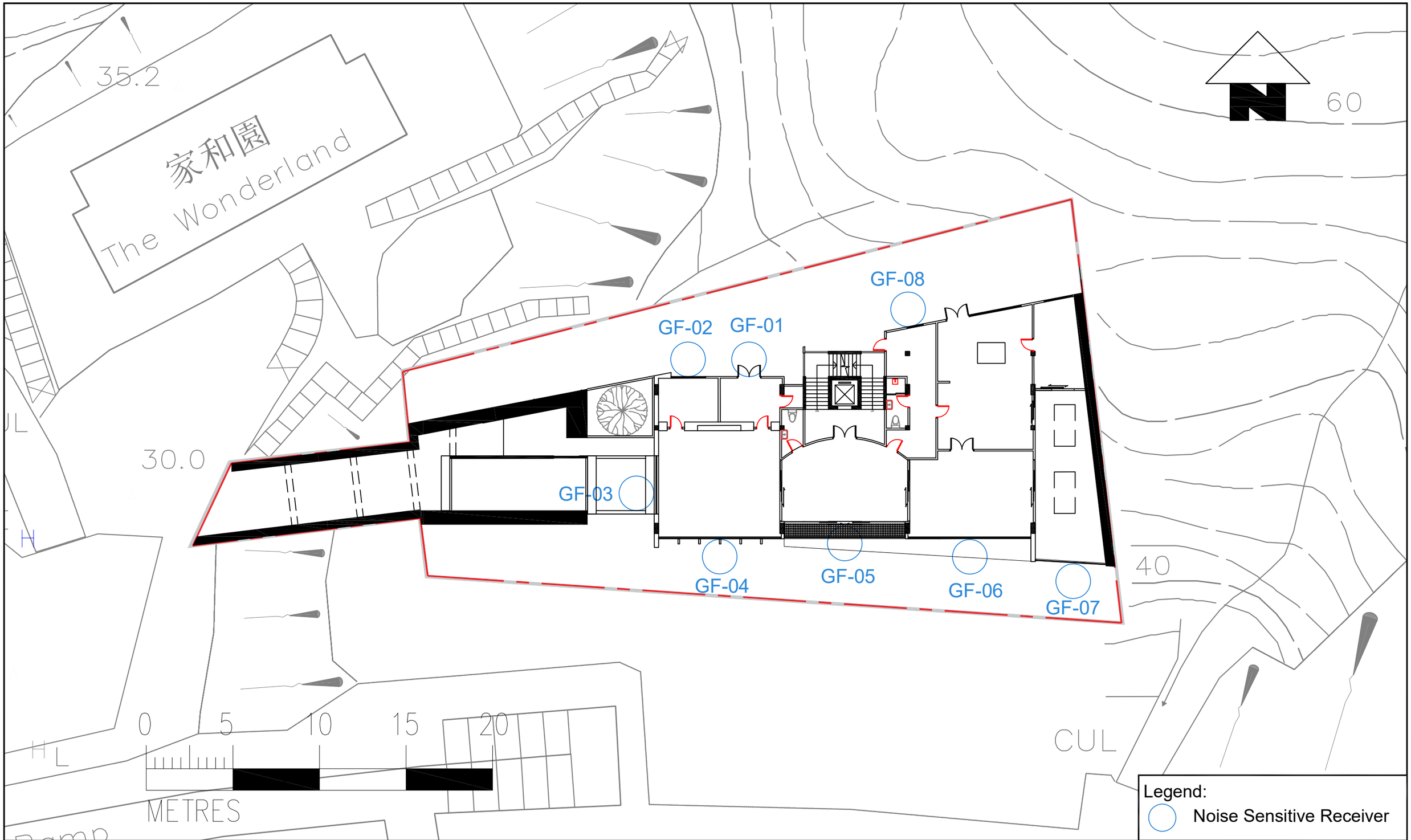

Figure: 2.1a

Title: Location of Representative Noise Sensitive Receiver for Road Traffic Noise Impact Assessmnet - G/F

Project: Proposed Redevelopment at Lot 453 in DD399, Ting Kau

Drawn by: CL
Checked by: TW
Rev.: 1.0
Date: Jun 2024

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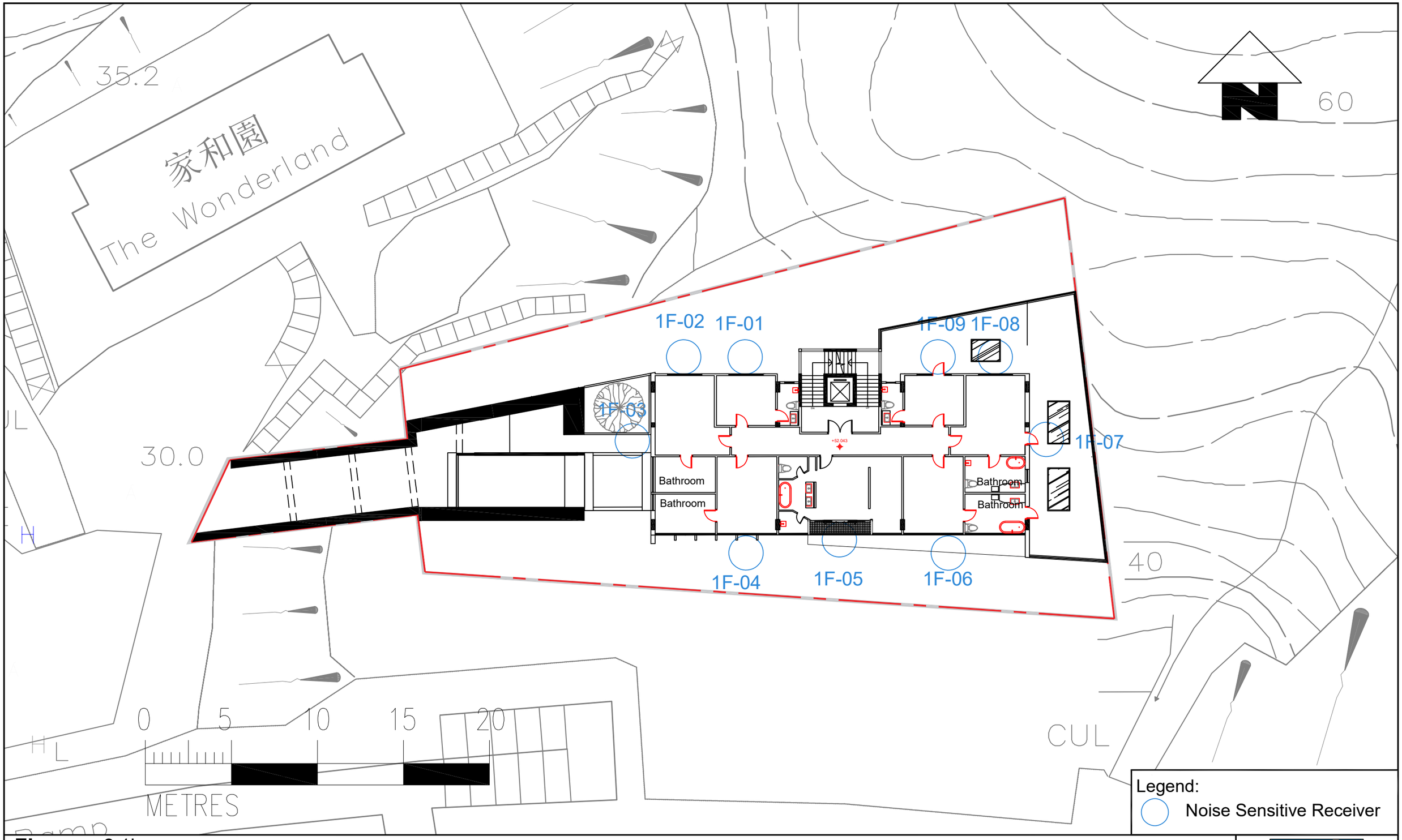

Figure: 2.1b	RAMBOLL
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Project: Proposed Redevelopment at Lot 453 in DD399, Ting Kau	Rev.: 1.0 Date: Jun 2024

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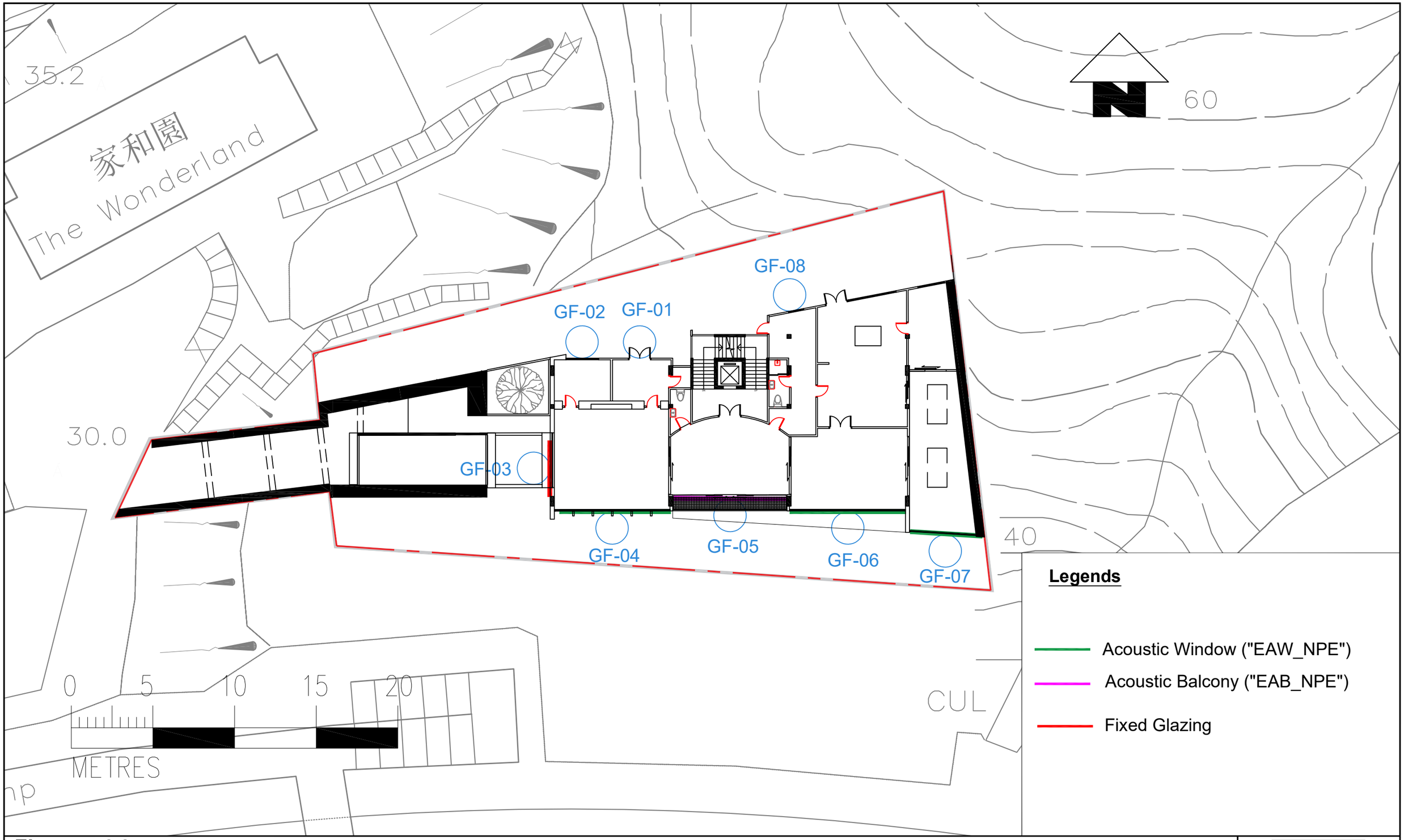

Figure: 2.2a

Title: Proposed Noise Mitigation Measures - G/F

Project: Proposed Redevelopment at Lot 453 in DD399, Ting Kau

RAMBOLL

Drawn by: CL

Checked by: TW

Rev.: 1.0

Date: Jun 2024

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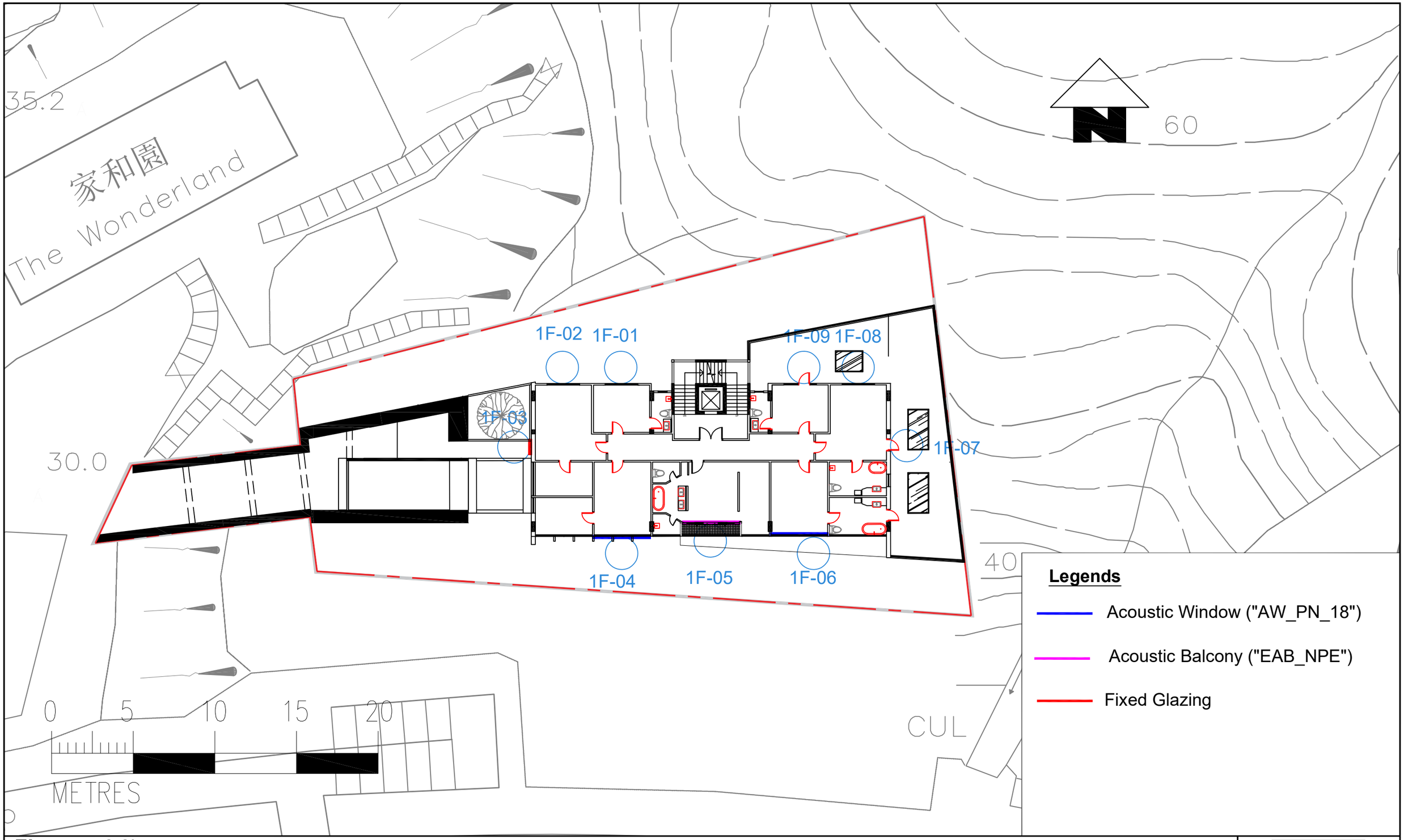

Figure: 2.2b	RAMBOLL
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REMARKS:
NO AIR SENSITIVE USES, INCLUDING OPENABLE WINDOWS, FRESH AIR INTAKE OF MECHANICAL VENTILATION AND RECREATIONAL USES IN THE OPEN AREA, WOULD BE LOCATED WITHIN THE BUFFER ZONES.

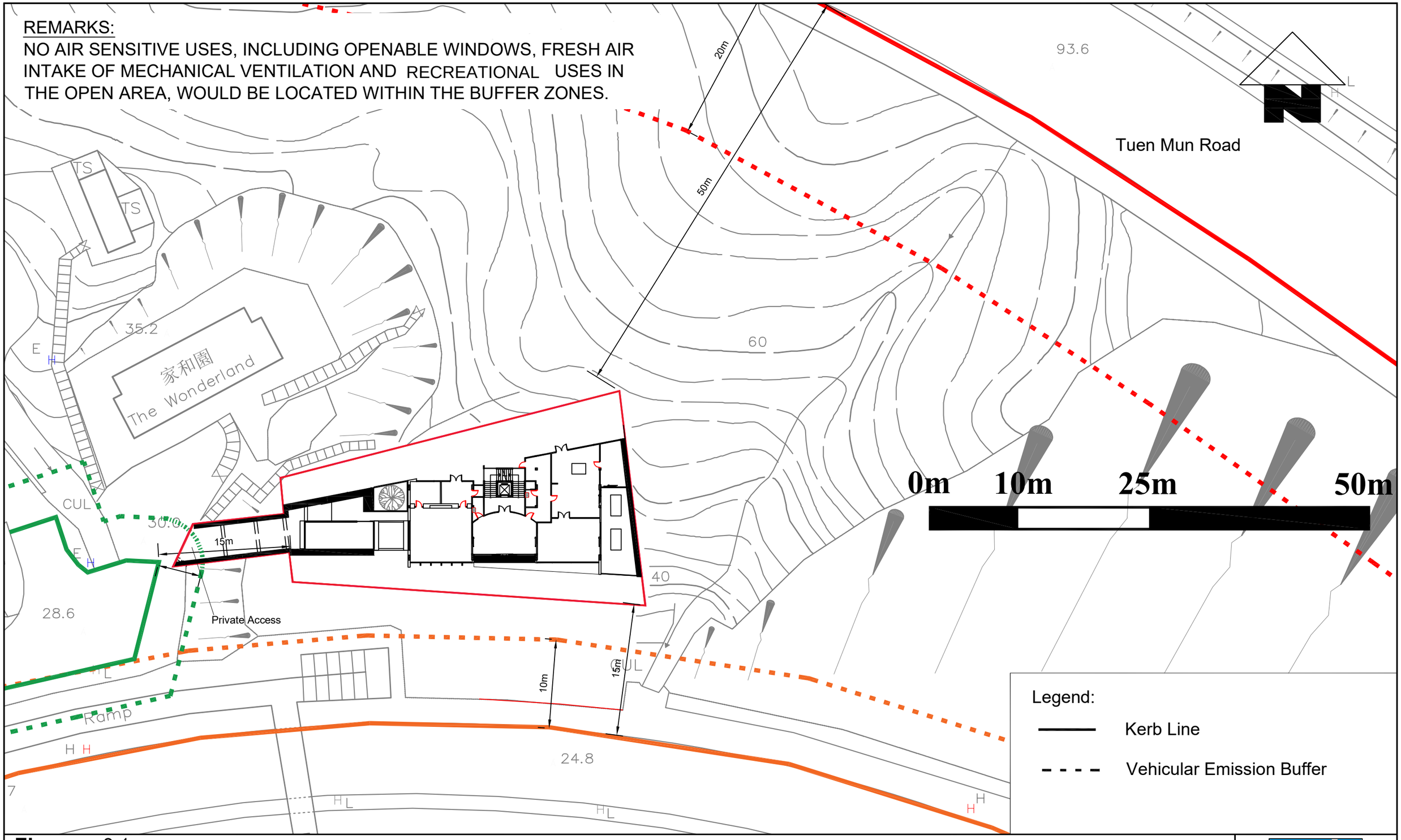

Figure: 3.1a	RAMBOLL
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Project: Proposed Redevelopment at Lot 453 in DD399, Ting Kau	Rev.: 1.0 Date: Sep 2024

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REMARKS:
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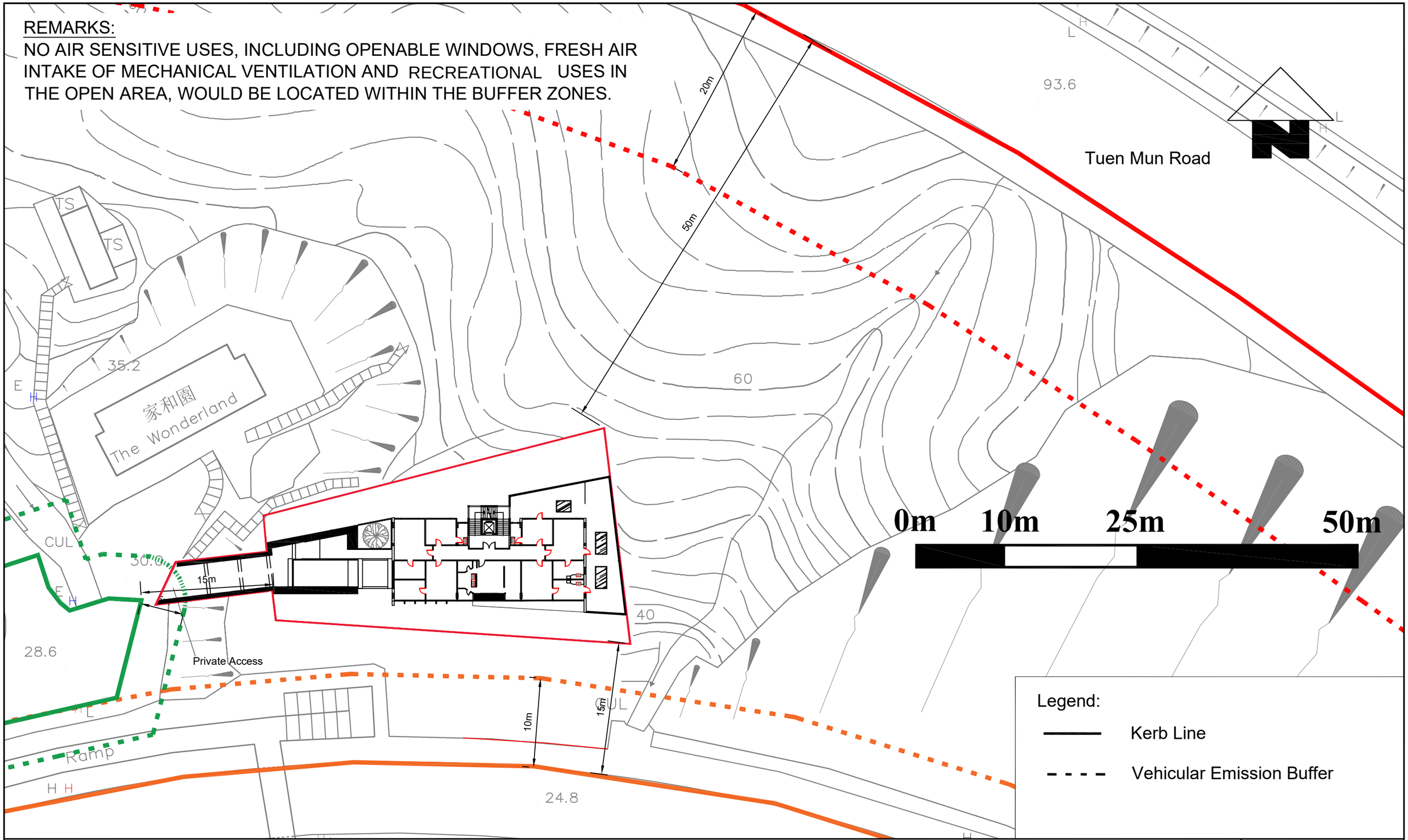

Figure: 3.1b	RAMBOLL
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Project: Proposed Redevelopment at Lot 453 in DD399, Ting Kau	Rev.: 1.0 Date: Sep 2024

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REMARKS:
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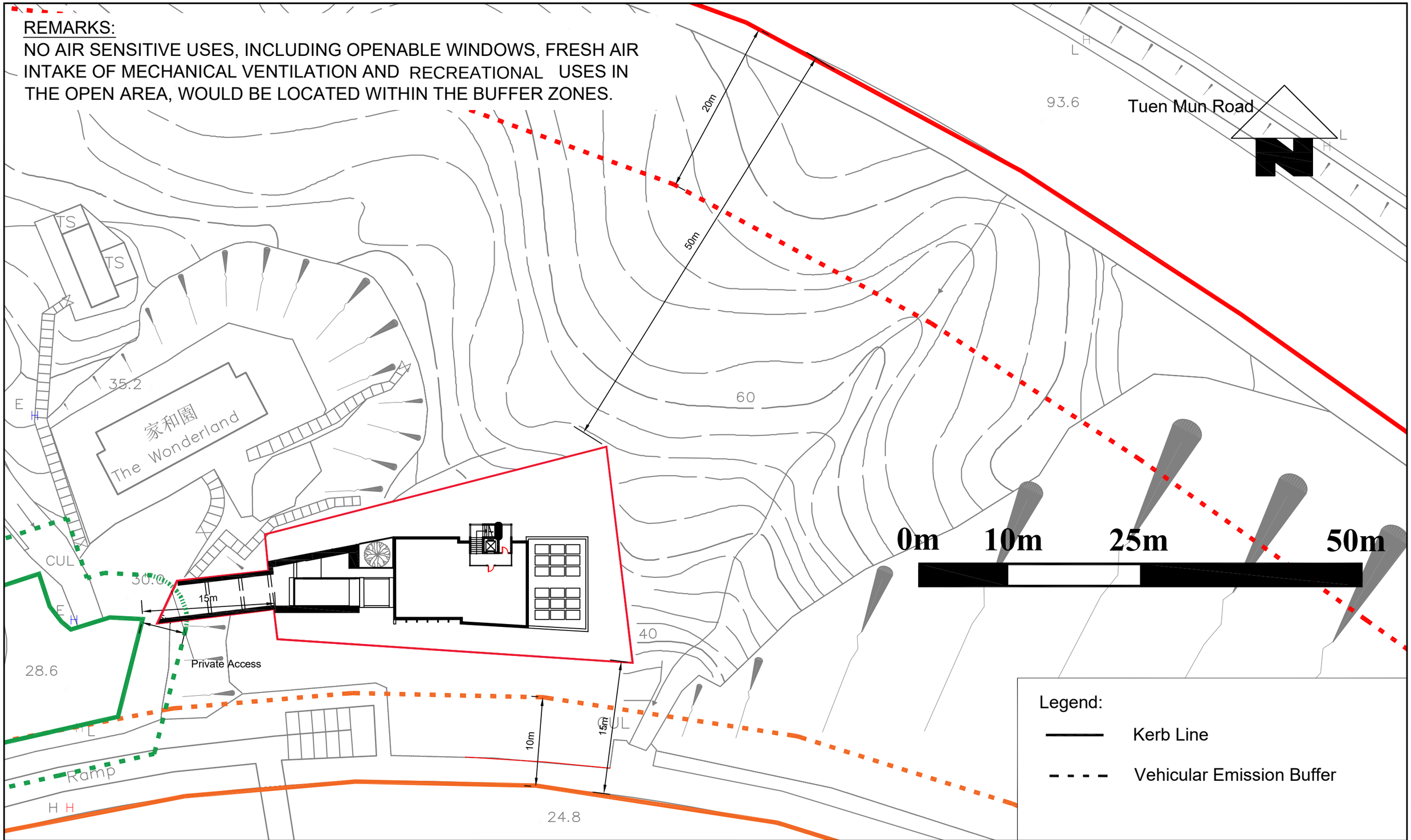

Figure: 3.1c	RAMBOLL
Title: Buffer Distance from the Kerb Side of Carriageways (R/F)	Drawn by: CL Checked by: TW
Project: Proposed Redevelopment at Lot 453 in DD399, Ting Kau	Rev.: 1.0 Date: Sep 2024

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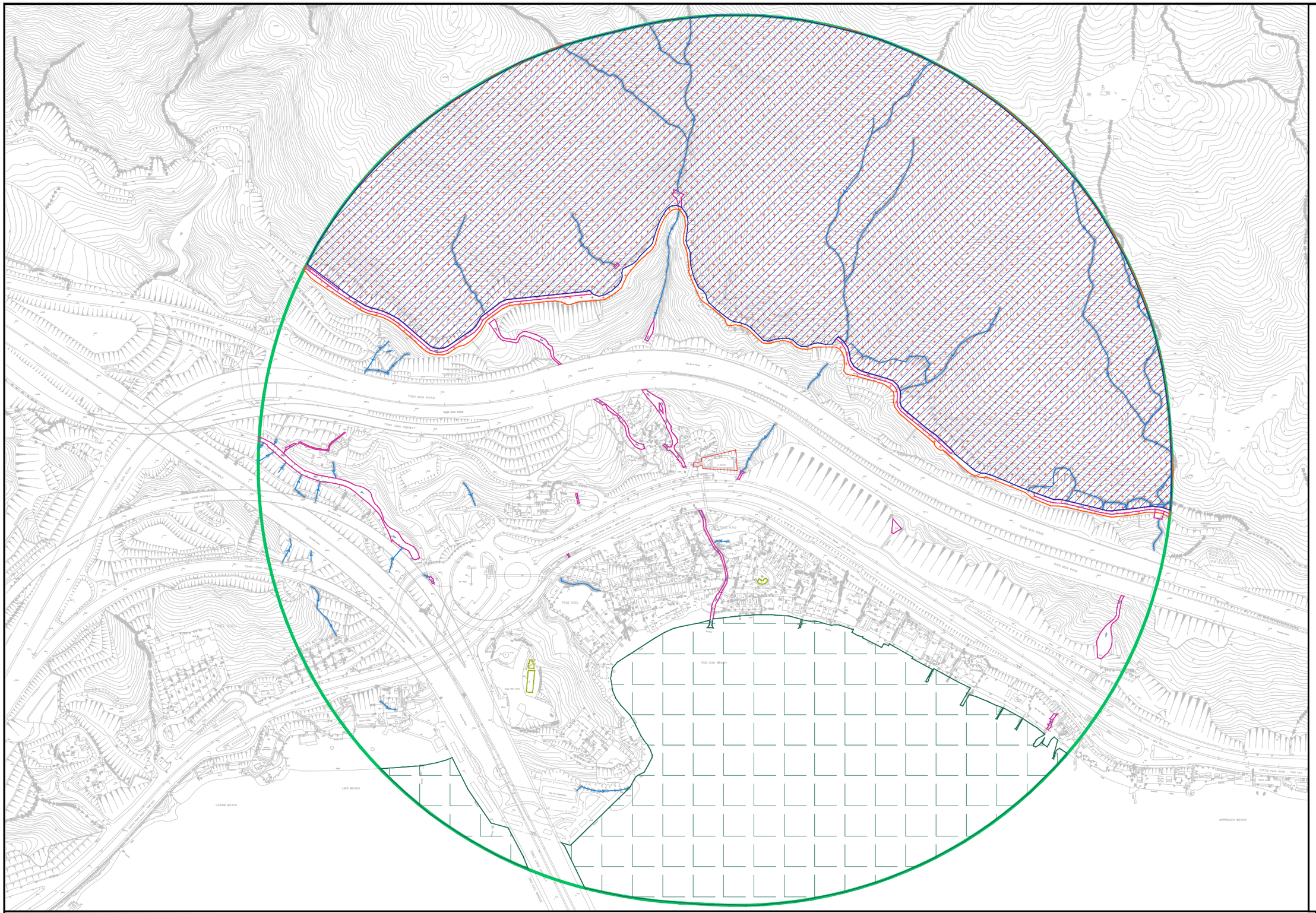


Figure: 5.1

Title: Location of Water Sensitive Receivers within 500m Assessment Area for Qualitative Water Quality Impact Assessment

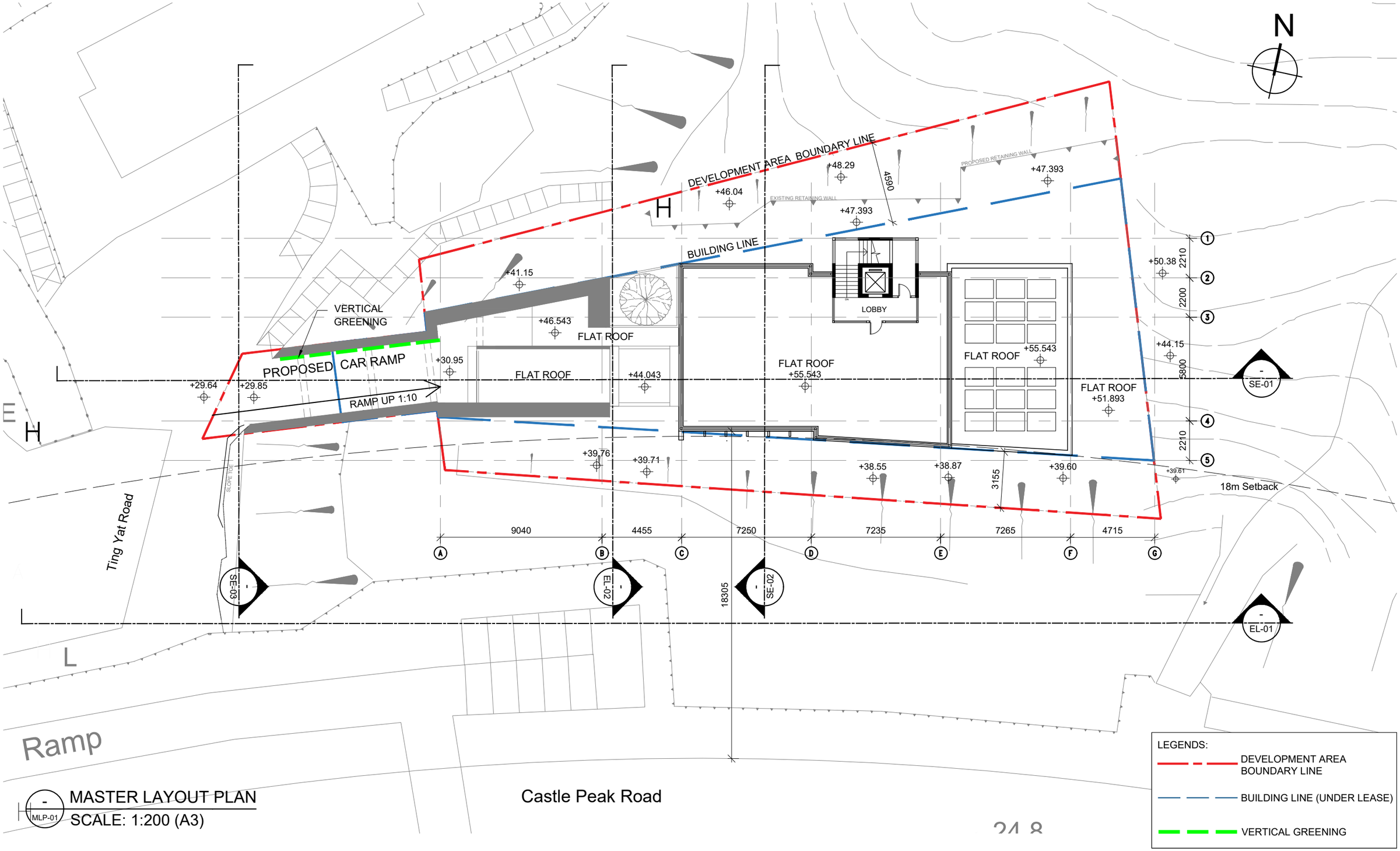
Project: Ting Kau 453

RAMBOLL

Drawn by:	CL
Checked by:	TC
Rev.:	1.0
Date:	Jan 2024

Appendix 1.1

Indicative Development Scheme



MASTER LAYOUT PLAN
SCALE: 1:200 (A3)

何 周 禮 建 築 設 計 事 務 所 有 限 公 司

REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.

APPROVED:	-
DATE:	-
CHECKED:	MM
DATE:	-
DRAWN:	BC
DATE:	DEC 2023

BARRIE HO ARCHITECTURE · INTERIORS LTD

PROJECT: LA CASETTA, TING KAU

TITLE: MASTER LAYOUT PLAN

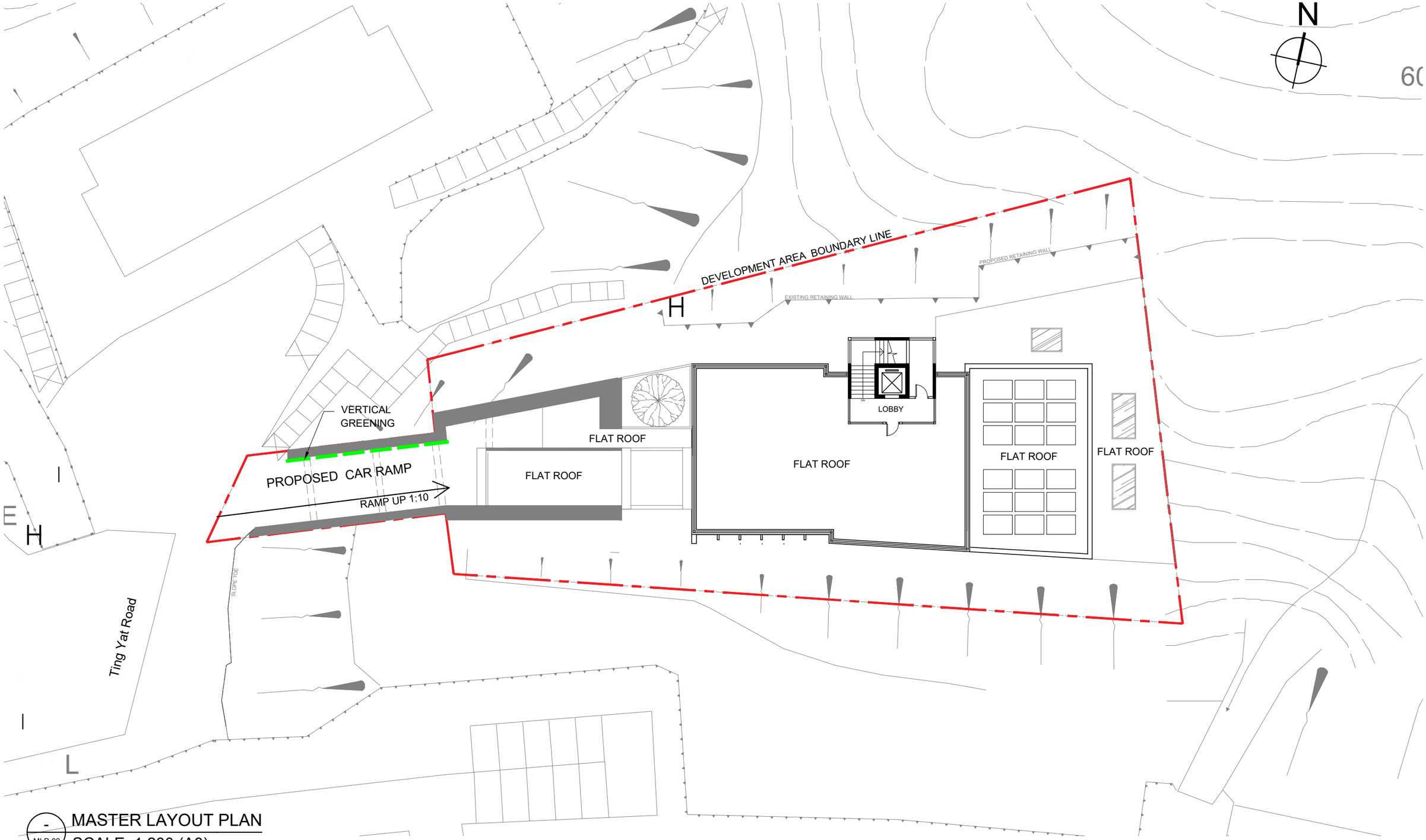
DWG NO.: MLP-01

JOB NO.: 202327

SCALE: 1:200 (A3)

REVISION	DATE	DRAWN	CHECKED
A	MAY 2024	GL	MM
B	SEP 2024	MC	AP
C	JAN 2025	BC	MM
D	MAY 2025	BC	MM

PLANNING SUBMISSION



MASTER LAYOUT PLAN
SCALE: 1:200 (A3)

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REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.

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DATE:	-
CHECKED:	MM
DATE:	-
DRAWN:	BC
DATE:	DEC 2023

BARRIE HO ARCHITECTURE · INTERIORS LTD

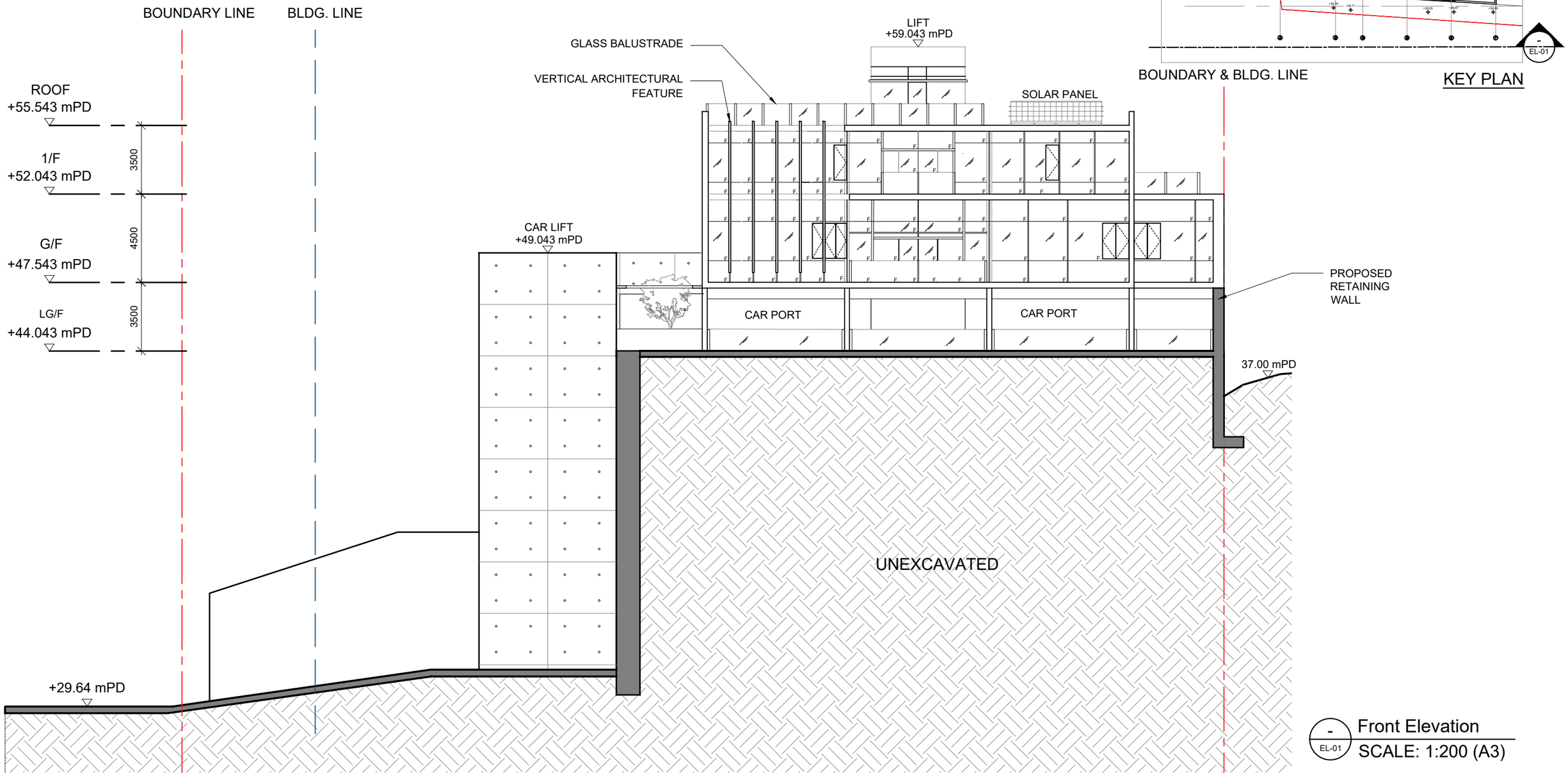
PROJECT: LA CASETTA, TING KAU

TITLE: MASTER LAYOUT PLAN

DWG NO.: MLP-02
JOB NO.: 202327
SCALE: 1:200 (A3)

REVISION	DATE	DRAWN	CHECKED
A	JUNE 2024	GL	MM
B	SEP 2024	MC	AP
C	JAN 2025	BC	MM

PLANNING SUBMISSION



- / EL-01 Front Elevation
SCALE: 1:200 (A3)

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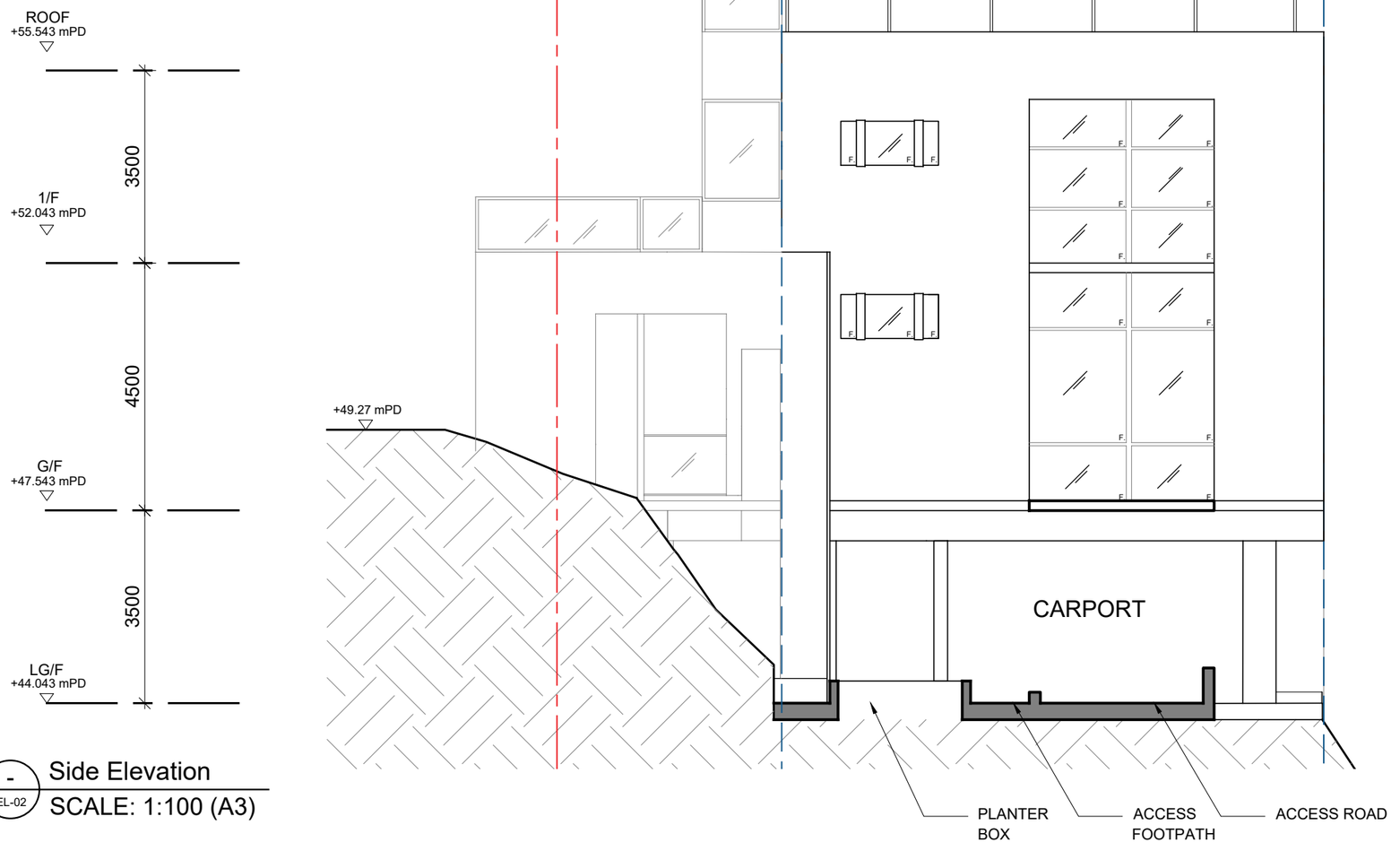
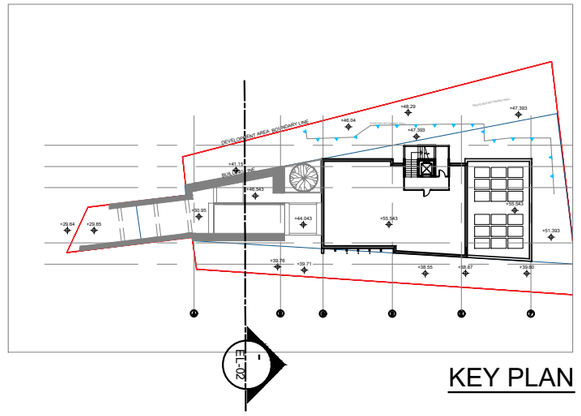
REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.	APPROVED: -	BARRIE HO ARCHITECTURE - INTERIORS LTD			REVISION	DATE	DRAWN	CHECKED	PLANNING SUBMISSION
	DATE: -				A	APR 2024	GL	MM	
	CHECKED: MM	PROJECT:	TITLE:	DWG NO.: EL-01	B	SEP 2024	MC	AP	
	DATE: -				C	JAN 2025	BC	MM	
	DRAWN: SY	LA CASETTA, TING KAU	FRONT ELEVATION	JOB NO.: 202327					
	DATE: JAN 2023			SCALE: 1:200 (A3)					





EL-02 Side Elevation
SCALE: 1:100 (A3)

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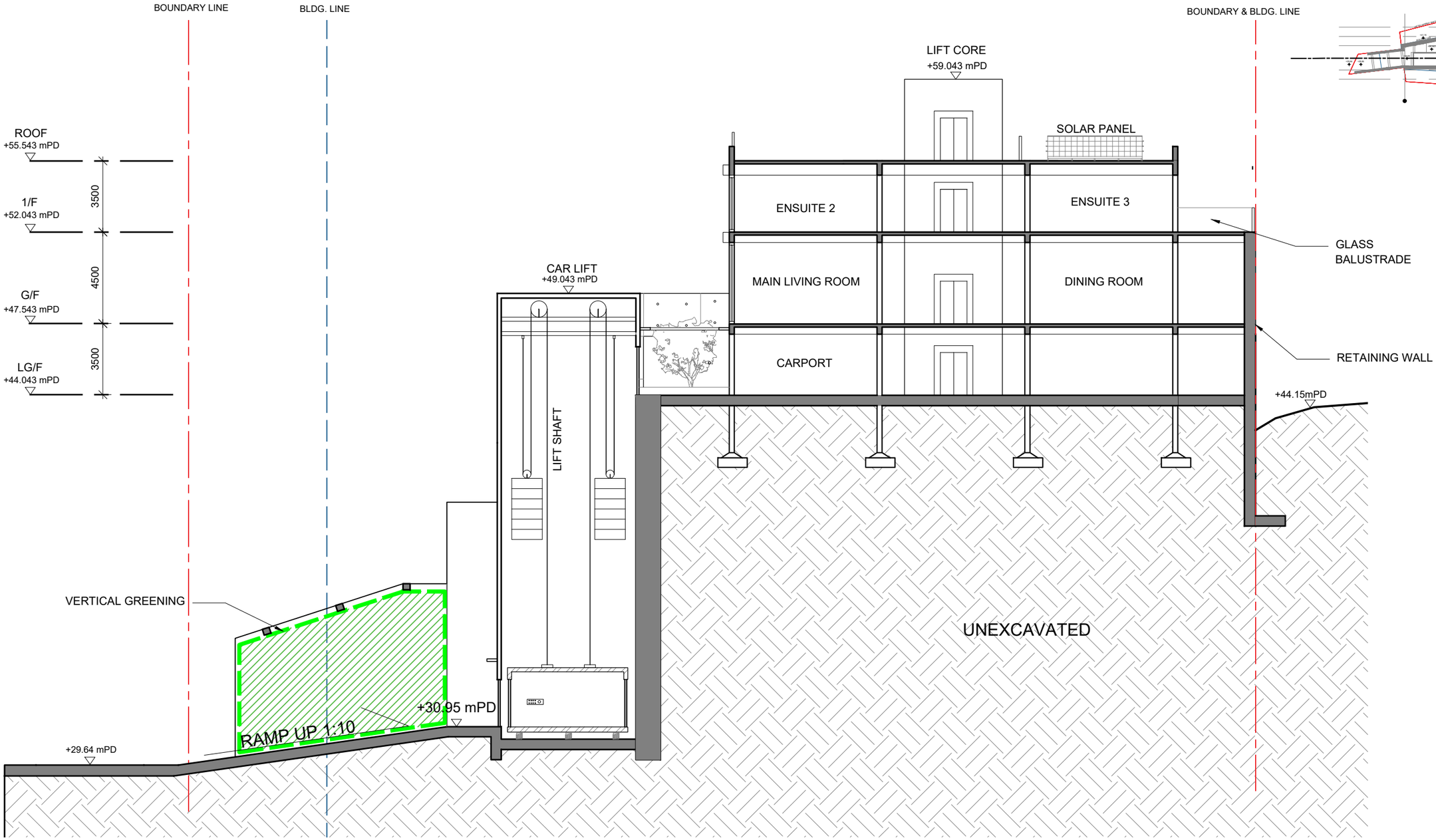
REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.	APPROVED: -	B A R R I E H O ARCHITECTURE - INTERIORS LTD			REVISION	DATE	DRAWN	CHECKED	PLANNING SUBMISSION
	DATE: -				A	APR 2024	GL	MM	
	CHECKED: MM				B	SEP 2024	MC	AP	
	DATE: -	PROJECT:	TITLE:	DWG NO.: EL-02					
	DRAWN: SY	LA CASETTA, TING KAU	SIDE ELEVATION	JOB NO.: 202327					
	DATE: JAN 2023			SCALE: 1:100 (A3)					



- / SE-01 Schematic Section 01
SCALE: 1:200 (A3)

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REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.

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DATE:	-
CHECKED:	MM
DATE:	-
DRAWN:	KL
DATE:	06 Dec 2023

B A R R I E H O ARCHITECTURE · INTERIORS LTD

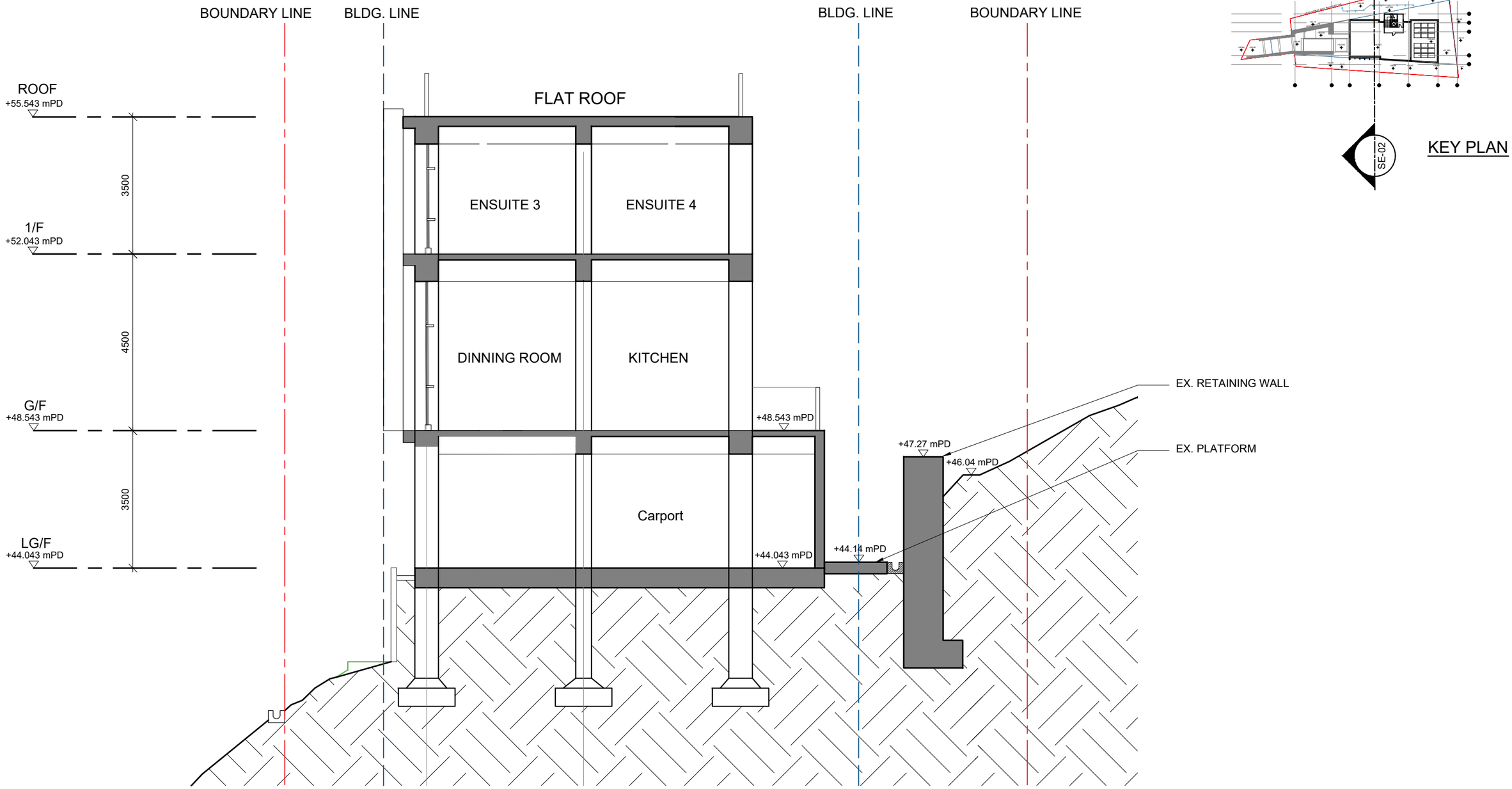
PROJECT: LA CASETTA, TING KAU

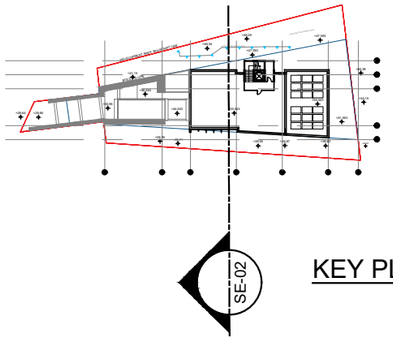
TITLE: SCHEMATIC SECTION

DWG NO.:	SE-01
JOB NO.:	202327
SCALE:	1:200 (A3)

REVISION	DATE	DRAWN	CHECKED
A	APR 2024	GL	MM
B	SEP 2024	MC	AP

PLANNING SUBMISSION





KEY PLAN

- / SE-02 Schematic Section 02

SCALE: 1:100 (A3)

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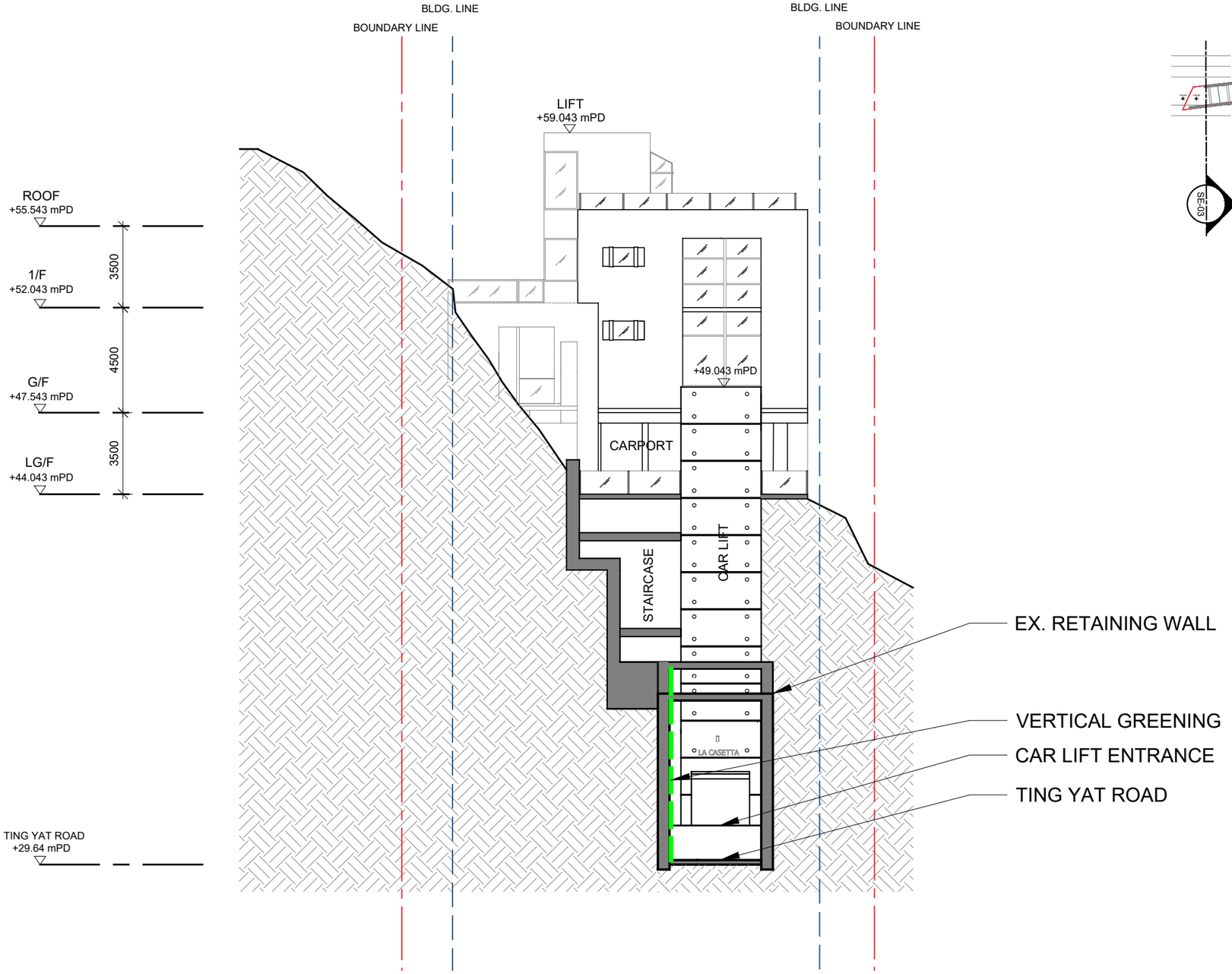
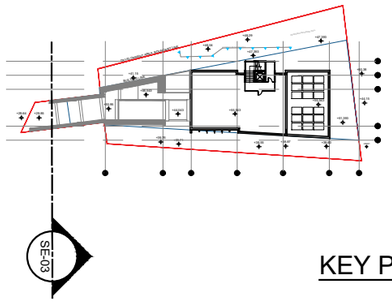
REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.	APPROVED: -	BARRIE HO ARCHITECTURE · INTERIORS LTD			REVISION	DATE	DRAWN	CHECKED	PLANNING SUBMISSION
	DATE: -				A	APR 2024	GL	MM	
	CHECKED: MM	PROJECT:	TITLE:	DWG NO.: SE-02					
	DATE: -	LA CASETTA, TING KAU	SCHEMATIC SECTION 02	JOB NO.: 202327					
	DRAWN: KL			SCALE: 1:100 (A3)					
	DATE: DEC 2023								





KEY PLAN

- / SE-03 Schematic Section 03
SCALE: 1:200 (A3)

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REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.

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DRAWN:	BC
DATE:	DEC 2023

BARRIE HO ARCHITECTURE · INTERIORS LTD

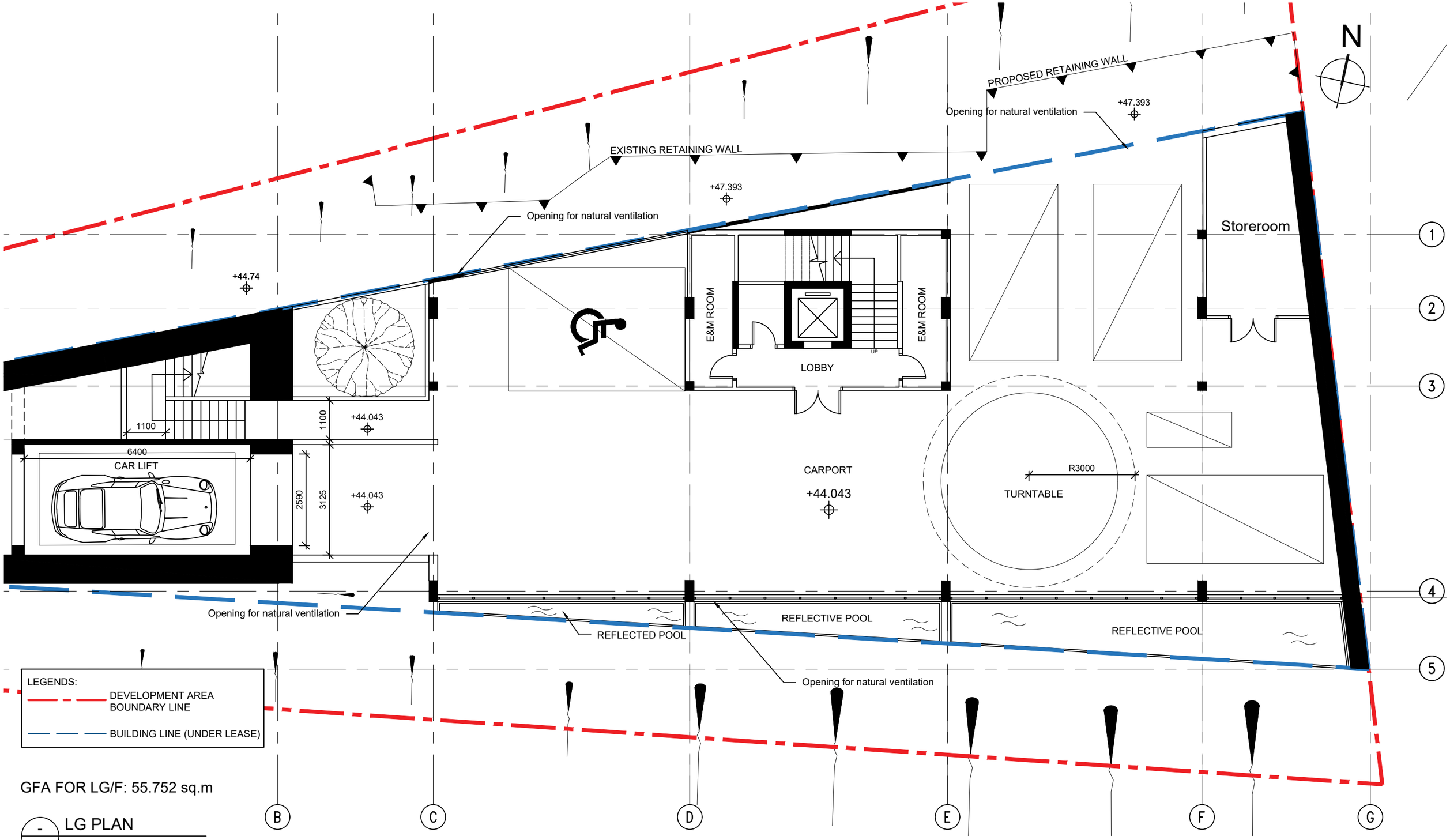
PROJECT: LA CASETTA, TING KAU

TITLE: SCHEMATIC SECTION 03

DWG NO.: SE-03
JOB NO.: 202327
SCALE: 1:200 (A3)

REVISION	DATE	DRAWN	CHECKED
A	APR 2024	GL	MM
B	SEP 2024	MC	AP
C	JAN 2025	BC	MM

PLANNING SUBMISSION



LEGENDS:

DEVELOPMENT AREA BOUNDARY LINE

BUILDING LINE (UNDER LEASE)

GFA FOR LG/F: 55.752 sq.m

- / LP-01 LG PLAN

SCALE: 1:100 (A3)

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REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.

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DATE:	-
DRAWN:	BC
DATE:	DEC 2023

BARRIE HO ARCHITECTURE - INTERIORS LTD

PROJECT: LA CASETTA, TING KAU

TITLE: LG PLAN

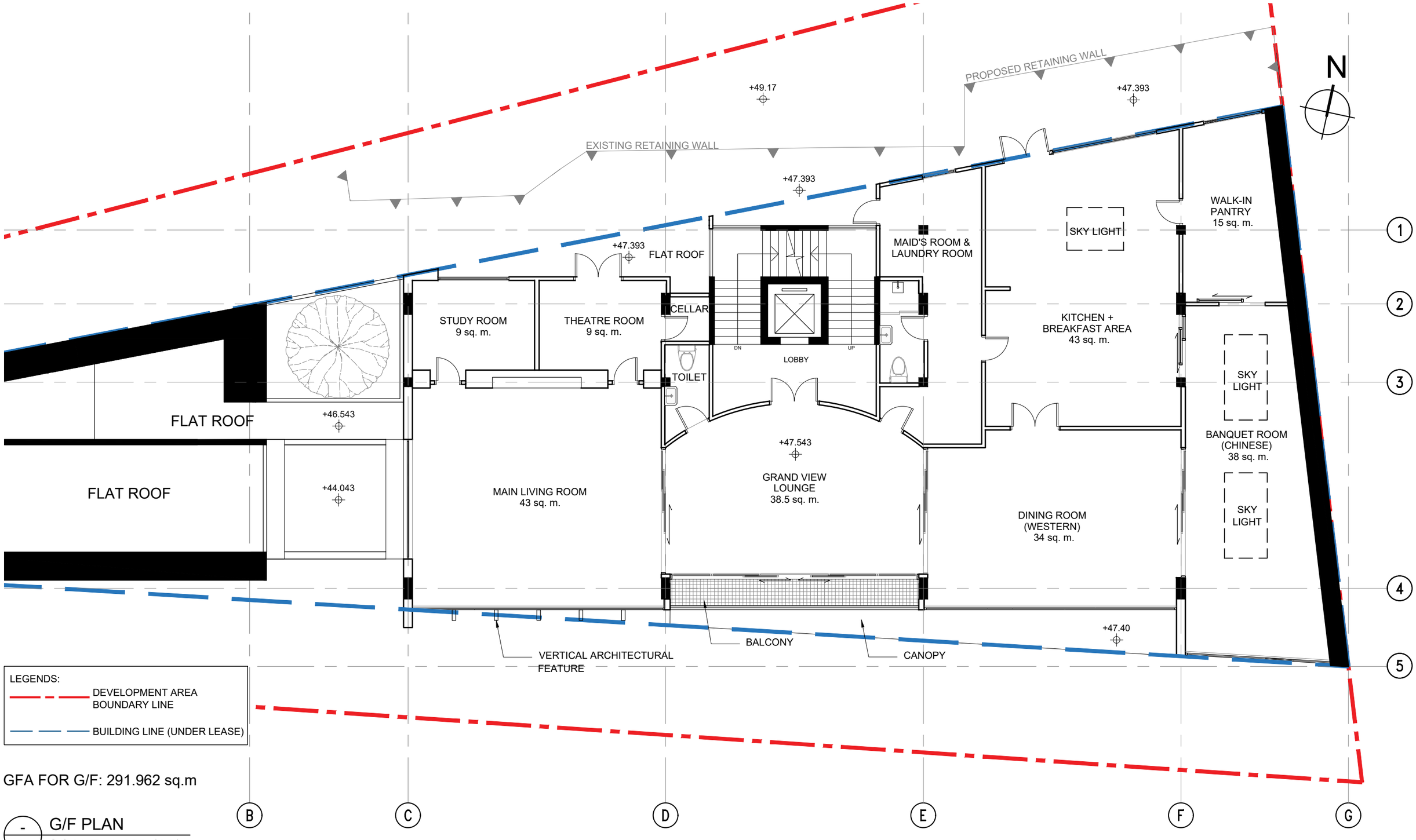
DWG NO.: LP-01

JOB NO.: 202327

SCALE: 1:100 (A3)

REVISION	DATE	DRAWN	CHECKED
A	MAY 2024	GL	MM
B	SEP 2024	MC	AP
C	JAN 2025	BC	MM
D	MAY 2025	BC	MM

PLANNING SUBMISSION



LEGENDS:

DEVELOPMENT AREA BOUNDARY LINE

BUILDING LINE (UNDER LEASE)

GFA FOR G/F: 291.962 sq.m

- / LP-02 G/F PLAN

SCALE: 1:100 (A3)

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REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.

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DATE:	-
CHECKED:	MM
DATE:	-
DRAWN:	BC
DATE:	DEC 2023

BARRIE HO ARCHITECTURE - INTERIORS LTD

PROJECT: LA CASETTA, TING KAU

TITLE: G/F PLAN

DWG NO.: LP-02

JOB NO.: 202327

SCALE: 1:100 (A3)

REVISION	DATE	DRAWN	CHECKED
A	MAY 2024	GL	MM
B	SEP 2024	MC	AP
C	JAN 2025	BC	MM

PLANNING SUBMISSION

LEGENDS:

DEVELOPMENT AREA BOUNDARY LINE

BUILDING LINE (UNDER LEASE)

GFA FOR 1/F: 208.157 sq.m

- / LP-03 1/F PLAN

SCALE: 1:100 (A3)

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REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.

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DATE:	-
CHECKED:	MM
DATE:	-
DRAWN:	BC
DATE:	DEC 2023

BARRIE HO ARCHITECTURE · INTERIORS LTD

PROJECT: LA CASETTA, TING KAU

TITLE: 1/F PLAN

DWG NO.: LP-03

JOB NO.: 202327

SCALE: 1:100 (A3)

REVISION	DATE	DRAWN	CHECKED
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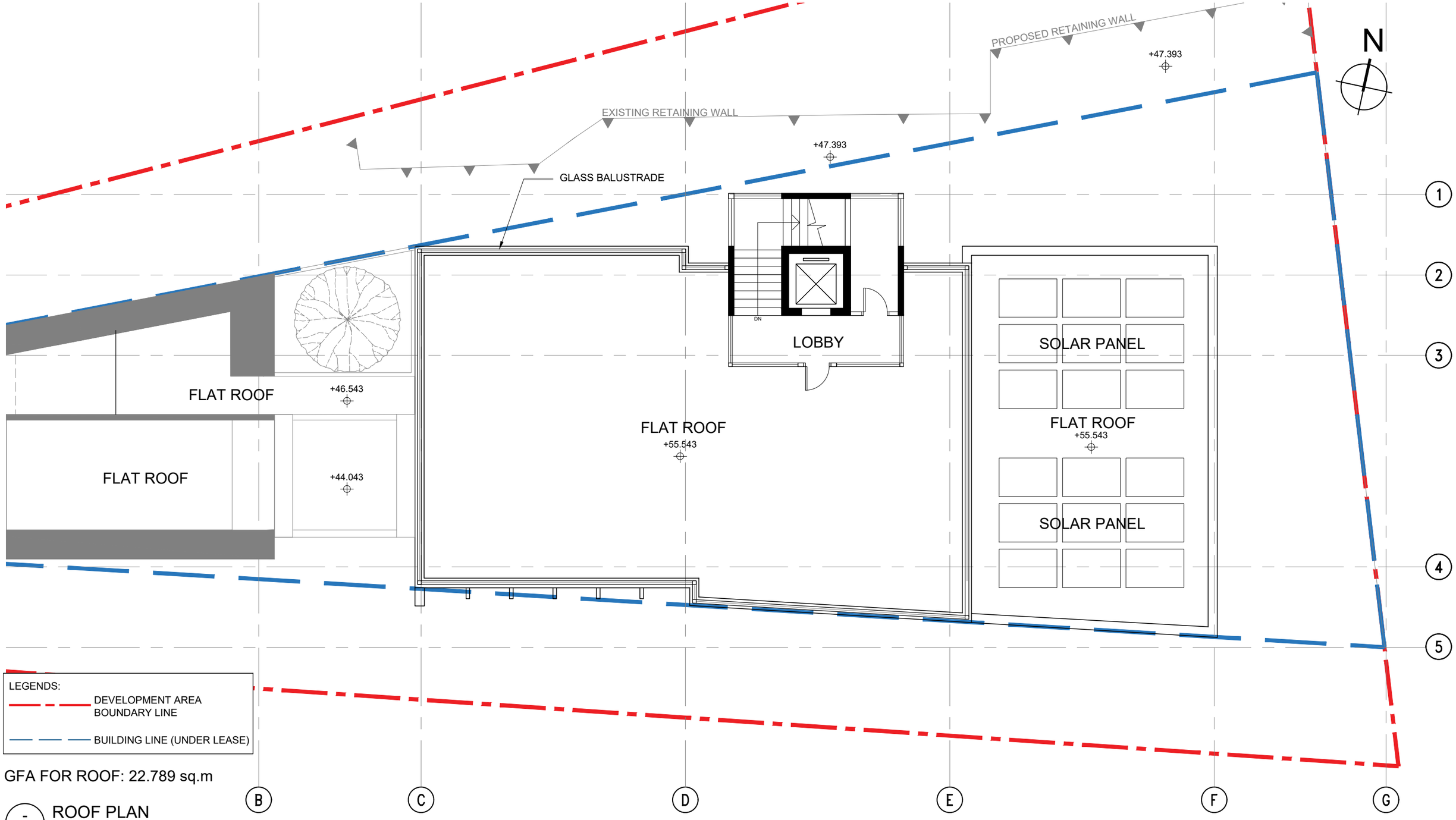
B	SEP 2024	MC	AP
C	JAN 2025	BC	MM
D	MAY 2025	BC	MM

PLANNING SUBMISSION



GFA FOR ROOF: 22.789 sq.m

- / LP-04 ROOF PLAN
SCALE: 1:100 (A3)

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REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.

APPROVED:	-
DATE:	-
CHECKED:	MM
DATE:	-
DRAWN:	BC
DATE:	DEC 2023

B A R R I E H O ARCHITECTURE · INTERIORS LTD

PROJECT: LA CASETTA, TING KAU

TITLE: ROOF PLAN

DWG NO.: LP-04
JOB NO.: 202327
SCALE: 1:100 (A3)

REVISION	DATE	DRAWN	CHECKED
A	MAY 2024	GL	MM
B	SEP 2024	MC	AP
C	JAN 2025	BC	MM

PLANNING SUBMISSION

Appendix 2.1

Traffic Forecast for Year 2039 and

Confirmation from Traffic Consultant on Traffic Forecast Methodology

CKM ASIA LIMITED 陳錦敏亞洲有限公司
Traffic and Transportation Planning Consultants 交通及運輸策劃顧問

Our Ref: J7316/6

25th April, 2024

Ramboll Hong Kong Limited
21st Floor
BEA Harbour View Centre
56 Gloucester Road
Wan Chai
Hong Kong

Attn: Mr. WONG Tak Kwong (Principal Consultant)

(By E-mail: takwong@ramboll.com)

Dear Mr. Wong,

Proposed Development
at Lot 453 in DD 399, Ting Kau

2043 Traffic Forecast for Traffic Noise Impact Assessment ("TNIA")

This is to confirm that the traffic forecast methodology for the captioned project submitted to Transport Department ("TD") on 24th April 2024 (CKM Ref: J7316/5) was produced in accordance to the relevant guideline issued by the TD.

Subsequent to our submission, TD replied with "*no objection in principle to the methodology used to produce 2043 traffic flows*" as stated in the TD email dated 24th April 2024. The relevant correspondences mentioned are attached herewith for your reference.

The peak hour traffic flows produced for Year 2043 are the highest within 15 years after occupation of the captioned project, which is assumed to be Year 2028.

Should you have any queries, please do not hesitate to contact us.

Thank you very much for your attention.

Yours sincerely,

Eric WONG
Principal Traffic Engineer

Encl.

cc: Client

KIM/WCH

21st Floor, Methodist House, 36 Hennessy Road, Wanchai, Hong Kong
香港灣仔軒尼詩道36號循道衛理大廈21樓
Tel 電話: (852) 2520 5990 Fax 傳真: (852) 2528 6343
Email 電郵: mail@ckmasia.com.hk Website 網址: http://www.ckmasia.com.hk

CKM Letter submitted TD
dated 24th April 2024
(CKM Ref: J7316/5)

CKM ASIA LIMITED 陳錦敏亞洲有限公司
Traffic and Transportation Planning Consultants 交通及運輸策劃顧問

Our Ref: J7316/5 24th April 2024

Transport Department
NT Regional Office
Traffic Survey & Support Division
Tsuen Wan Section
9/F, Mongkok Government Offices
30 Luen Wan Street
Mongkok, Kowloon

Attn: Mr. SIN Ho Pong, Stanley (Engr/Tsuen Wan 2)

(BY POST & EMAIL: hpsin@td.gov.hk)

Dear Mr. Sin,

Proposed Development
at Lot 453 in D.D. 399, Ting Kau

Traffic Forecast for Traffic Noise Impact Assessment ("TNIA")

CKM Asia Limited, a traffic and transportation planning consultancy firm, is engaged by the Owner of the captioned lot to produce the year 2043 traffic data for the purpose of conducting the Traffic Noise Impact Assessment ("TNIA") by the project Environmental Consultant.

In connection, we write to submit attached Technical Note on Traffic Forecast Methodology for your office review and comment. It is highly appreciated if you can provide your feedback on the traffic forecast methodology to produce year 2043 traffic data, which are solely used for the TNIA at your earliest convenience.

Should you have any queries, please do not hesitate to contact the undersigned.

Thank you for your attention.

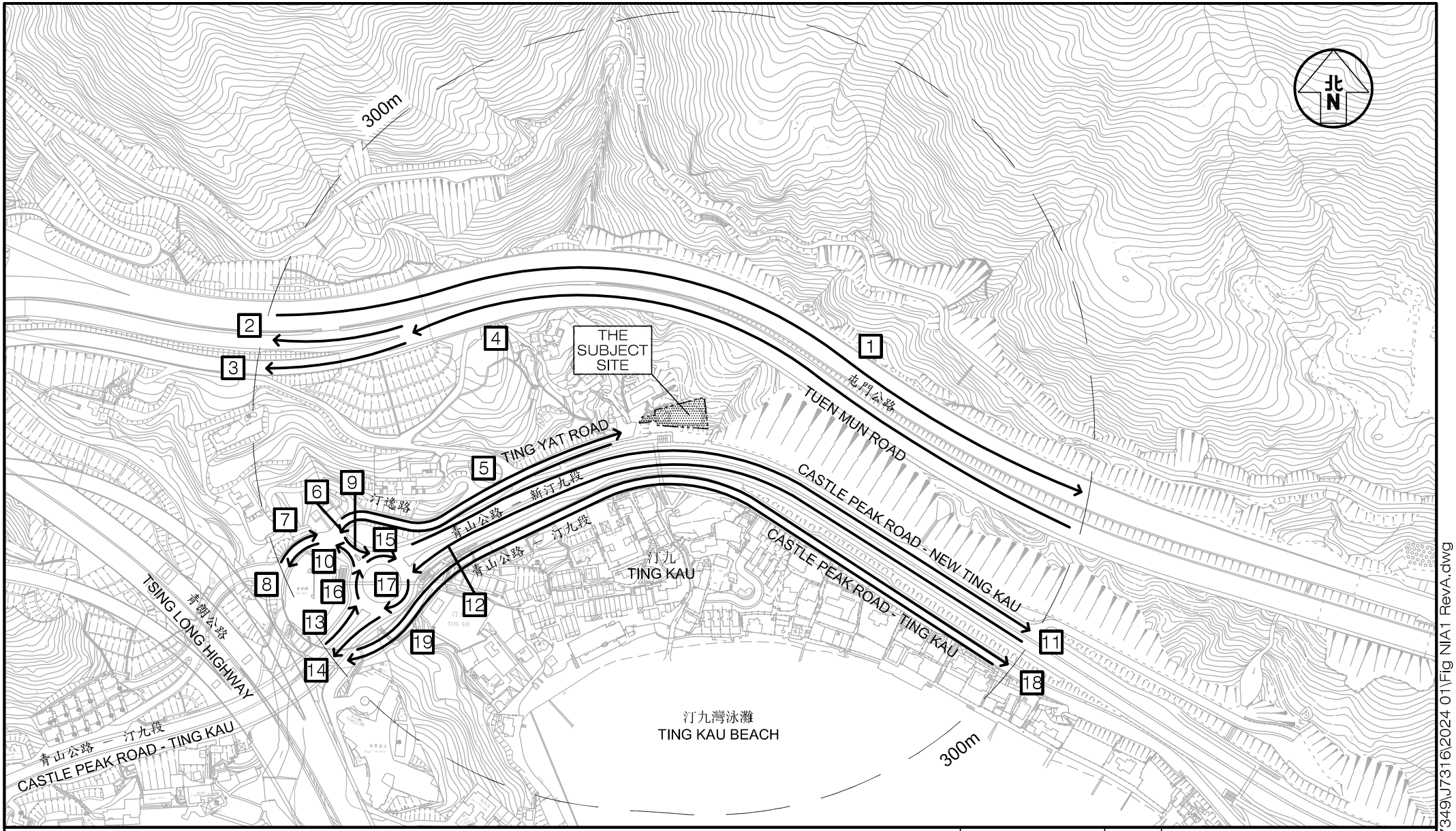
Yours sincerely,

Eric WONG
Principal Traffic Engineer

Encl.

KIM\WCH

21st Floor, Methodist House, 36 Hennessy Road, Wanchai, Hong Kong
香港灣仔軒尼詩道36號循道衛理大廈21樓
Tel 電話 : (852) 2520 5990 Fax 傳真 : (852) 2528 6343
Email 電郵 : mail@ckmasia.com.hk Website 網址 : http://www.ckmasia.com.hk



Project Title: PROPOSED REDEVELOPMENT OF LA CASETTA DD399 LOT453 TING KAU	J7316	Figure No.: NIA1	Revision: A
Figure Title: LOCATION OF SUBJECT SITE AND ROAD LINK WITH TRAFFIC DATA WITHIN THE 300M STUDY AREA		Designed by: N C L / Drawn by: S C Y / Checked by: K C	
		Scale in A4: 1 : 4,000	Date: 18 JAN 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7300-J7349\J7316\2024 01\Fig NIA1 RevA.dwg

Appendix A –
Year 2043 Traffic Forecast

TABLE E – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2043 TRAFFIC FORECAST

Date: 06 March 2024 **Job No.: J7316**

Link ID	Road Section	From Road	To Road	Speed Limit	AM Peak Hour		
					Traffic Flows	Vehicle Composition	
					(veh/hr)	LV	HV
L001	Tuen Mun Road	Tsing Long Highway	Tsuen Wan Road	70	5,050	61.5%	38.5%
L002	Tuen Mun Road	Tuen Mun Road	Tuen Mun Road	70	2,850	63.2%	36.8%
L003	Tsing Long Highway	Tuen Mun Road	Tsing Long Highway	70	700	63.0%	37.0%
L004	Tuen Mun Road	Tsuen Wan Road	Tsing Long Highway	70	3,550	63.2%	36.8%
L005	Ting Yat Road	Castle Peak Road - Ting Kau	cul-de-sac	50	50	80.0%	20.0%
L006	Ting Yat Road	cul-de-sac	Castle Peak Road - Ting Kau	50	50	90.9%	9.1%
L007	Castle Peak Road - Ting Kau	Slip Road to Grand Riviera	Ting Yat Road	50	150	72.2%	27.8%
L008	Castle Peak Road - Ting Kau	Ting Yat Road	Slip Road to Grand Riviera	50	50	75.0%	25.0%
L009	Castle Peak Road - Ting Kau	Ting Yat Road	Castle Peak Road - Ting Kau Roundabout	50	150	74.8%	25.2%
L010	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau Roundabout	Ting Yat Road	50	50	71.0%	29.0%
L011	Castle Peak Road - New Ting Kau	Castle Peak Road - Ting Kau Roundabout	Castle Peak Road - Ting Kau	70	950	64.9%	35.1%
L012	Castle Peak Road - New Ting Kau	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau Roundabout	70	350	68.5%	31.5%
L013	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau Roundabout	70	850	63.5%	36.5%
L014	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau Roundabout	Castle Peak Road - Ting Kau	70	350	68.4%	31.6%
L015	Castle Peak Road - Ting Kau Roundabout	Castle Peak Road - Ting Kau	Castle Peak Road - New Ting Kau	50	1,000	65.2%	34.8%
L016	Castle Peak Road - Ting Kau Roundabout	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau	50	900	64.0%	36.0%
L017	Castle Peak Road - Ting Kau Roundabout	Castle Peak Road - New Ting Kau	Castle Peak Road - Ting Kau	50	400	69.2%	30.8%
L018	Castle Peak Road - Ting Kau	Slip Road to Royal View Hotel	Castle Peak Road - New Ting Kau	50	50	75.0%	25.0%
L019	Castle Peak Road - Ting Kau	Castle Peak Road - New Ting Kau	Slip Road to Royal View Hotel	50	150	66.7%	33.3%

Note: "LV" includes motorcycle, private car and taxi
"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus

TABLE E – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2043 TRAFFIC FORECAST

Date: 06 March 2024 **Job No.: J7316**

Link ID	Road Section	From Road	To Road	Speed Limit	PM Peak Hour		
					Traffic Flows	Vehicle Composition	
					(veh/hr)	LV	HV
L001	Tuen Mun Road	Tsing Long Highway	Tsuen Wan Road	70	3,350	56.1%	43.9%
L002	Tuen Mun Road	Tuen Mun Road	Tuen Mun Road	70	3,450	67.9%	32.1%
L003	Tsing Long Highway	Tuen Mun Road	Tsing Long Highway	70	1,700	68.4%	31.6%
L004	Tuen Mun Road	Tsuen Wan Road	Tsing Long Highway	70	5,150	68.1%	31.9%
L005	Ting Yat Road	Castle Peak Road - Ting Kau	cul-de-sac	50	50	75.0%	25.0%
L006	Ting Yat Road	cul-de-sac	Castle Peak Road - Ting Kau	50	50	88.9%	11.1%
L007	Castle Peak Road - Ting Kau	Slip Road to Grand Riviera	Ting Yat Road	50	100	86.7%	13.3%
L008	Castle Peak Road - Ting Kau	Ting Yat Road	Slip Road to Grand Riviera	50	50	80.6%	19.4%
L009	Castle Peak Road - Ting Kau	Ting Yat Road	Castle Peak Road - Ting Kau Roundabout	50	150	85.6%	14.4%
L010	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau Roundabout	Ting Yat Road	50	100	81.5%	18.5%
L011	Castle Peak Road - New Ting Kau	Castle Peak Road - Ting Kau Roundabout	Castle Peak Road - Ting Kau	70	400	76.4%	23.6%
L012	Castle Peak Road - New Ting Kau	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau Roundabout	70	900	76.9%	23.1%
L013	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau Roundabout	70	350	74.8%	25.2%
L014	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau Roundabout	Castle Peak Road - Ting Kau	70	900	77.0%	23.0%
L015	Castle Peak Road - Ting Kau Roundabout	Castle Peak Road - Ting Kau	Castle Peak Road - New Ting Kau	50	400	76.5%	23.5%
L016	Castle Peak Road - Ting Kau Roundabout	Castle Peak Road - Ting Kau	Castle Peak Road - Ting Kau	50	350	74.6%	25.4%
L017	Castle Peak Road - Ting Kau Roundabout	Castle Peak Road - New Ting Kau	Castle Peak Road - Ting Kau	50	900	76.9%	23.1%
L018	Castle Peak Road - Ting Kau	Slip Road to Royal View Hotel	Castle Peak Road - New Ting Kau	50	50	80.0%	20.0%
L019	Castle Peak Road - Ting Kau	Castle Peak Road - New Ting Kau	Slip Road to Royal View Hotel	50	100	87.7%	12.3%

Note: "LV" includes motorcycle, private car and taxi
"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus

Reply E-mail from Transport Department dated 24th April 2024

CKM Asia

Reply E-mail from TD

From: Ho Pong SIN <hpsin@td.gov.hk>
Sent: Wednesday, 24 April 2024 6:21 PM
To: CKM Asia
Subject: RE: Proposed Development at Lot 453 in DD 399, Ting Kau - Traffic Forecast for Noise Impact Assessment
Attachments: J7316_5.pdf

Dear Eric,

I refer to your email on 24.4.2024 and remain no objection in principle to the methodology used to produce 2043 traffic flows, which will be adopted solely in the environmental assessment for the captioned development.

Regards,
Stanley SIN
E/TW2, TD
Tel: 2399 2233

From: CKM Asia <mail@ckmasia.com.hk>
To: Ho Pong SIN <hpsin@td.gov.hk>
Date: 2024/04/24 下午 06:15
Subject: RE: Proposed Development at Lot 453 in DD 399, Ting Kau - Traffic Forecast for Noise Impact Assessment

---

Dear Stanley,

Thank you very much for your reply on 11 April 2024.

However, it is found that there was a typo in the lot number on our previous letter, and the correct address is Lot 453 in **DD399**.
To correct the mistake, we write to submit attached herewith an updated letter (CKM Ref: J7316/5) for record superseding our previous submission. No change has been made to the letter except for the address highlighted.

It is highly appreciated if you can review and reply with the same feedback as in your preceding e-mail on 11 April 2024.
We sincerely apologize for the confusion caused.

Should you have any question, please feel free to contact us.

Thank you for your attention.

Regards,
Eric WONG

CKM Asia Limited
Tel : (852) 2520 5990
Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk
Website: www.ckmasia.com.hk

From: Ho Pong SIN [mailto:hpsin@td.gov.hk]
Sent: Thursday, 11 April 2024 13:52
To: CKM Asia
Cc: Ho Pong SIN
Subject: Re: Proposed Development at Lot 453 in DD 339, Ting Kau - Traffic Forecast for Noise Impact Assessement

Dear Eric,

Proposed Development at Lot 453 in DD 339, Ting Kau - Traffic Forecast for Noise Impact Assessment

I refer to your letter ref: J7316/3 dated 22 March 2024 enclosed in the preceding email.

We have no objection in principle to the methodology used to produce 2043 traffic flows, which will be adopted solely in the environmental assessment for the captioned development.

Regards,
Stanley SIN
E/TW2, TD
Tel: 2399 2233

From: CKM Asia <mail@ckmasia.com.hk>
To: "hpsin@td.gov.hk" <hpsin@td.gov.hk>
Date: 2024/03/22 下午 05:58
Subject: Proposed Development at Lot 453 in DD 339, Ting Kau - Traffic Forecast for Noise Impact Assessement

---

Dear Mr Sin,

We refer to the captioned project.

CKM Asia Limited is the Traffic Consultant engaged to produce the future traffic data for the purpose of conducting the Noise Impact Assessment ("NIA") by the project Environmental Consultant.
We write to submit attached letter for your review, and the original hardcopy is being posted to your attention.

It is highly appreciated if you can provide your feedback at your earliest convenience.

Should you have any question, please feel free to contact us.

Thank you for your attention.

Regards,
Eric WONG

CKM Asia Limited
Traffic and Transportation Planning Consultant
21st Floor, Methodist House
36 Hennessy Road
Wan Chai
Hong Kong
Tel : (852) 2520 5990
Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk
Website: www.ckmasia.com.hk

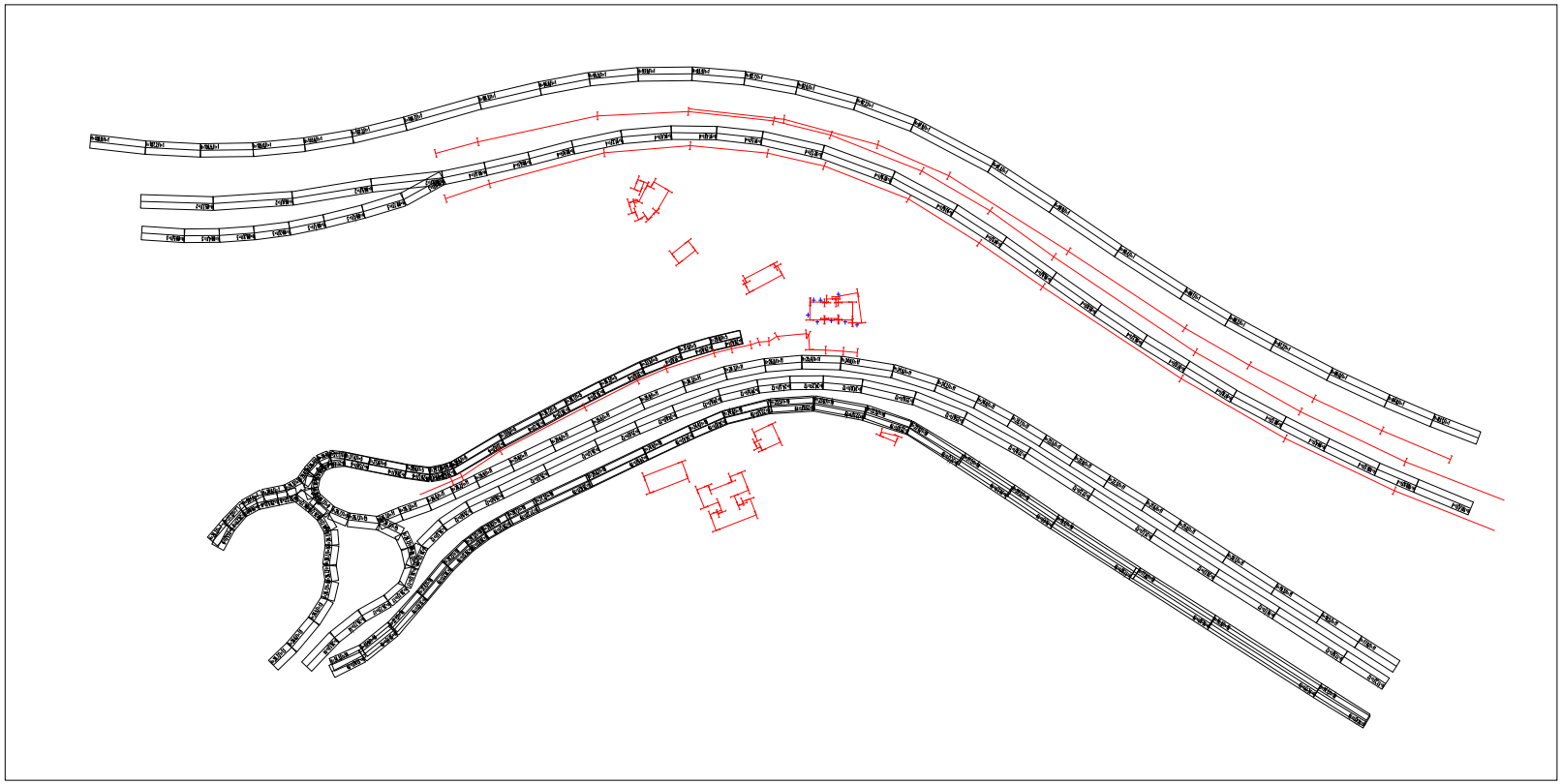
Appendix 2.2

Modelling layout for Road Traffic Noise Impact Assessment

BHATK453E100_AM_GF.MAS

825900 826700

825900 825900



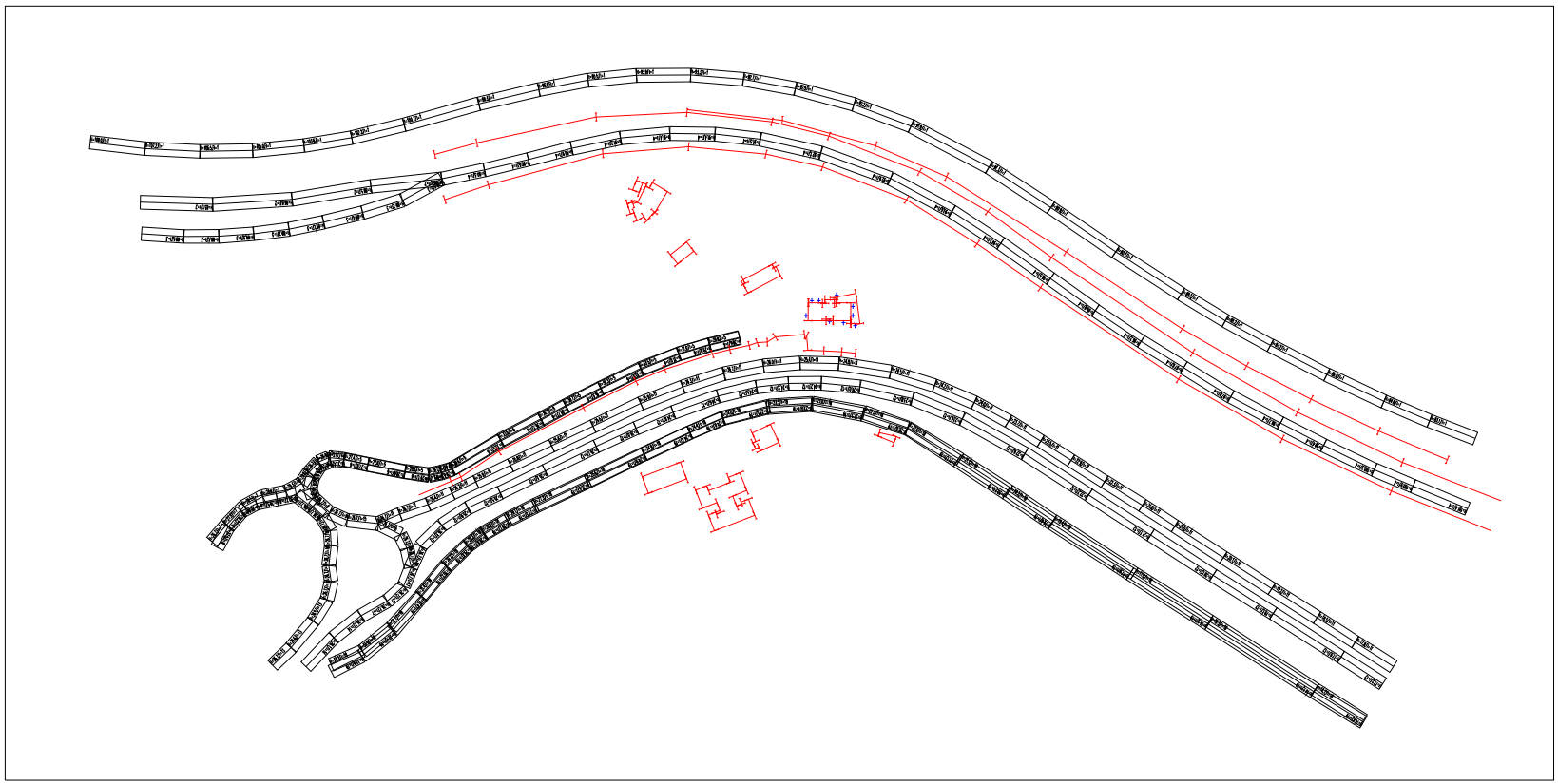
825500 825500

825900 826700

BHATK453E100_AM_1F.MAS

825900 826700

825900 825900



825500 825500

825900 826700

Appendix 2.3
Results of Road Traffic Noise Impact Assessment
(Base Scenario)

Predicted Road Traffic Noise [L_{10}(1h) dB(A)] at Representative Sensitive Receivers (Based on Year 2047 Traffic Forecast)
Unmitigated Scenario (AM)

Floor	mPD	GF-01	GF-02	GF-03	GF-04	GF-05	GF-06	GF-07	GF-08
G/F	47.5	65.1	65.5	73.3	74.9	74.6	74.8	75	64.7
Exceedance		0	0	1	1	1	1	1	0
No. of rooms with exceedance		0	0	1		1	1	1	0

Floor	mPD	1F-01	1F-02	1F-03	1F-04	1F-05	1F-06	1F-07	1F-08	1F-09
1/F	52.0	65.7	66	73.2	74.5	74.6	74.8	63.9	63.9	65.3
Exceedance		0	0	1	1	1	1	0	0	0
No. of rooms with exceedance		0	0	1	1	1	1	0	0	0

Max Noise Level (dB(A)) =	75

Predicted Road Traffic Noise [L_{10}(1h) dB(A)] at Representative Sensitive Receivers (Based on Year 2047 Traffic Forecast)
Unmitigated Scenario (PM)

Floor	mPD	GF-01	GF-02	GF-03	GF-04	GF-05	GF-06	GF-07	GF-08
G/F	47.5	65.8	66.1	72.3	73.6	73.2	73.3	73.5	65.4
Exceedance		0	0	1	1	1	1	1	0
No. of rooms with exceedance		0	0	1		1	1	1	0

Floor	mPD	1F-01	1F-02	1F-03	1F-04	1F-05	1F-06	1F-07	1F-08	1F-09
1/F	52.0	66.3	66.6	72.3	73.1	73.2	73.4	64	64	65.9
Exceedance		0	0	1	1	1	1	0	0	0
No. of rooms with exceedance		0	0	1	1	1	1	0	0	0

Max Noise Level (dB(A)) =	73.6

Appendix 2.4

**Relative Noise Reduction (RNR) for
Innovative Noise Mitigation Measures (INMD) and
results of Road Traffic Noise Impact Assessment (Mitigated Scenario)**

Project Case				Referenced Configuration of INMD						Noise Reduction Performance		Mitigation Noise Level	
Noise Assessment Point	Predicted Max. Noise level	Noise Exceedance	Room Area	Noise Mitigation Measure		Relative Noise Reduction	Outer Opening Area	Overlapping Length	Rm size	Adjustment for Room Size	RNR Expected	Assumed Noise Reduction	**Mitigated Nosie Level**
	dB(A)	dB(A)	sqm	Description	Abbreviation	dB(A)	sqm	mm	sqm	dB(A)	dB(A)	dB(A)	**dB(A)**
GF-03	73.3	2.9	43	Fixed Glazing	**FG**								
GF-04	74.9	4.5	43	Acoustic Window (Baffle Type)	**EAW_NPE**	8.8	3.2	253	38.8	0.0	8.8	4.5	**70**
GF-05	74.6	4.2	38.5	Acoustic Balcony (Baffle Type)	**EAB_NPE**	8.8	3.2	253	38.8	0.0	8.8	4.2	**70**
GF-06	74.8	4.4	34.0	Acoustic Window (Baffle Type)	**EAW_NPE**	8.8	3.2	253	38.8	-0.6	8.2	4.4	**70**
GF-07	75	4.6	38.0	Acoustic Window (Baffle Type)	**EAW_NPE**	8.8	3.2	253	38.8	-0.1	8.7	4.6	**70**
1F-03	73.2	2.8	17.4	Fixed Glazing	**FG**								
1F-04	74.5	4.1	15.7	Acoustic Window (Baffle Type)	**AW_PN_18**	7	1.125	100	18	-0.6	6.4	4.1	**70**
1F-05	74.6	4.2	19.8	Acoustic Balcony (Baffle Type)	**EAB_NPE**	8.8	3.2	253	38.8	-2.9	5.9	4.2	**70**
1F-06	74.8	4.4	15.7	Acoustic Window (Baffle Type)	**AW_PN_18**	7	1.125	100	18	-0.6	6.4	4.4	**70**

Appendix 3.1

Road Type of Nearby Road Network,

Correspondence with TD on Road Type

Tak Kwong Wong

From: Wing Hin CHO <whcho@td.gov.hk>
Sent: Monday, December 18, 2023 2:47 PM
To: CKM Asia
Cc: Edwin Wing Chow CHAN
Subject: Re: Proposed Redevelopment at Lot 453 in DD 339, Ting Kau - Road Type for Environmental Assessment
Attachments: J7316_1.pdf

Dear Alvord,

Please note that environmental assessment is outside the area of purview by TD and we are not in the position to offer comments on the related matters. Notwithstanding, with respect to the listed road types in Table 1 of your letter dated 7 December 2023 (ref. no. J7316/1), I have no adverse comments from a traffic engineering viewpoint.

Regards,
Wing Hin, CHO
E/TW2, TD
Tel: 2399 2233

From: CKM Asia <mail@ckmasia.com.hk>
To: "whcho@td.gov.hk" <whcho@td.gov.hk>
Date: 07/12/2023 17:59
Subject: Proposed Redevelopment at Lot 453 in DD 339, Ting Kau - Road Type for Environmental Assessment

---

Dear Mr. Cho,

We are writing to submit attached letter for the captioned project, and the original hardcopy is being posted to your attention.

It is highly appreciated if you can review and provide your feedback at your earliest convenience.

Should you have any question, please feel free to contact us.

Thank you for your attention.

Regards,
Alvord NG

CKM Asia Limited
Tel : (852) 2520 5990
Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk
Website: www.ckmasia.com.hk

CKM ASIA LIMITED 陳錦敏亞洲有限公司
Traffic and Transportation Planning Consultants 交通及運輸策劃顧問

Our Ref: J7316/1 7th December, 2023

Transport Department
NT Regional Office
Traffic Survey & Support Division
Tsuen Wan Section
Room 1015, 10/F,
Mongkok Government Offices
30 Luen Wan Street
Mong Kok, Kowloon

Attn: Mr. CHO Wing Hin, Issac (Engr / Tsuen Wan 2)

(BY POST & E-mail: whcho@td.gov.hk)

Dear Mr. Cho,

Proposed Redevelopment
at Lot 453 in DD 339, Ting Kau

Road Type for Environmental Assessment

We are the Traffic Consultant for the captioned project and the location of the captioned site is shown in Figure 1.

To facilitate the preparation of the Environmental Assessment for the captioned, we would like to seek confirmation from your office on the road type of road sections located in the vicinity. The road sections are listed in Table 1.

TABLE 1 LIST OF ROAD LINK AND ROAD TYPE

Road Name	Road Type	Remarks
1. Tsing Long Highway	Expressway	Road type is as per ATC Station No. 5033
2. Tuen Mun Road	Expressway	Road type is as per ATC Station No. 5035
3. Castle Peak Road – New Ting Kau	Rural Road	Road type is as per ATC Station No. 6209
4. Castle Peak Road – Ting Kau	Rural Road	Road type is as per ATC Station No. 6209
5. Ting Yat Road	Local Distributor	Not specified in the ATC, and Ting Yat Road only serves limited establishments, including 4 residential houses (Lindo Green, The Wonderland, Vodana Court, and La Casetta), upper part of Ting Kau Village, and the water works road of Water Supplies Department.

We would greatly appreciate it if your office could confirm the road type of above road sections in Table 1 at your earliest convenience.

21st Floor, Methodist House, 36 Hennessy Road, Wanchai, Hong Kong
香港灣仔軒尼詩道36號循道衛理大廈21樓
Tel 電話 : (852) 2520 5990 Fax 傳真 : (852) 2528 6343
Email 電郵 : mail@ckmasia.com.hk Website 網址 : http://www.ckmasia.com.hk

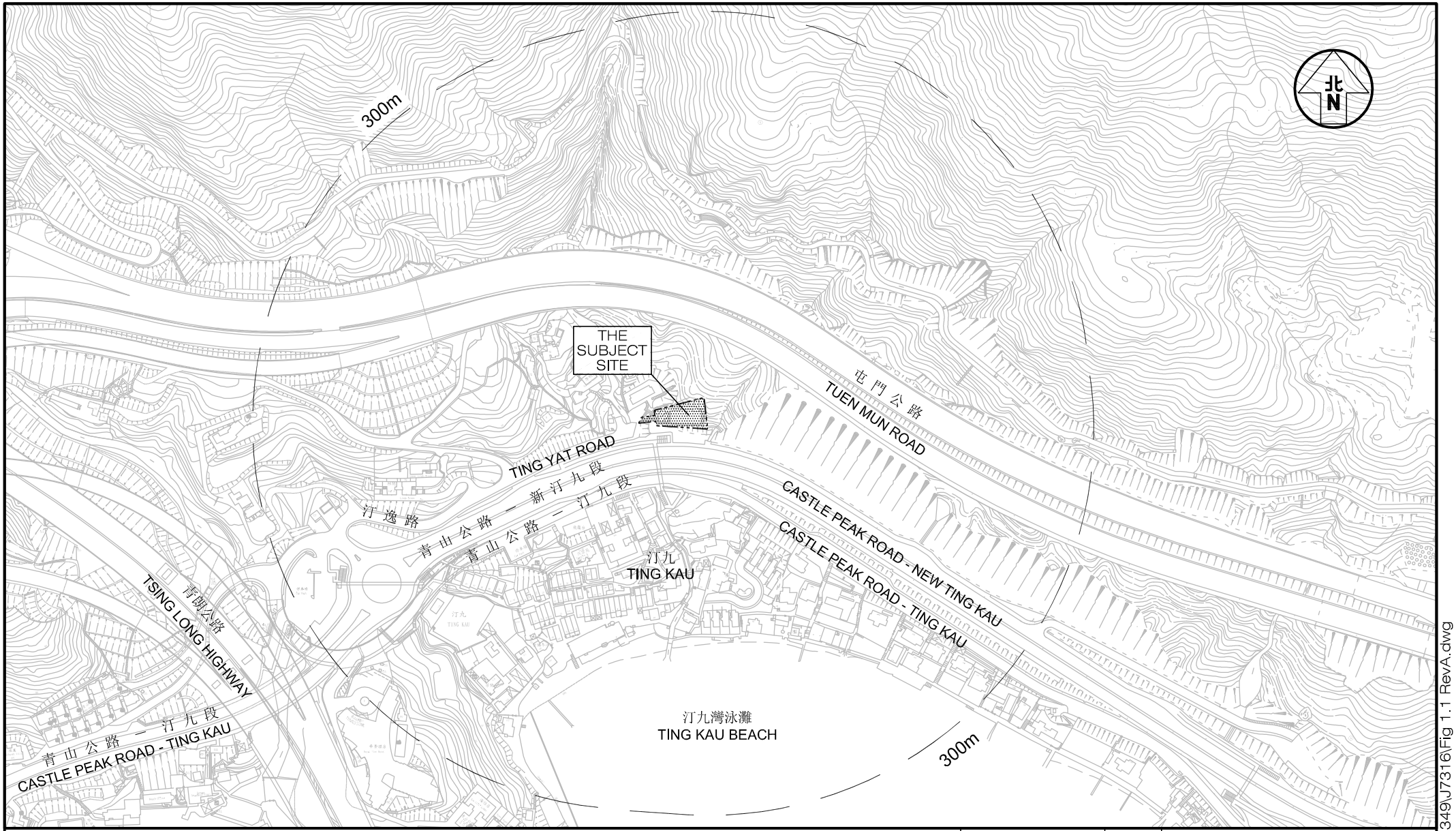
Should you have any queries, please do not hesitate to contact the undersigned.

Thank you for your attention.

Yours sincerely,

CHIN Kim Meng
Director

cc: Architect / Authorised Person
Environmental Consultant
Client



Project Title: PROPOSED REDEVELOPMENT OF LA CASETTA DD399 LOT453 TING KAU J7316	Figure No. 1	Revision A	CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk
Figure Title: LOCATION OF THE SUBJECT SITE	Designed by N C L / Drawn by S C Y / Checked by K C		
	Scale in A4 1 : 4,000	Date 07 DEC 2023	

T:\JOBJ7300-J7349\J7316\Fig 1.1 RevA.dwg

Appendix 3.2

Potential Concurrent Projects

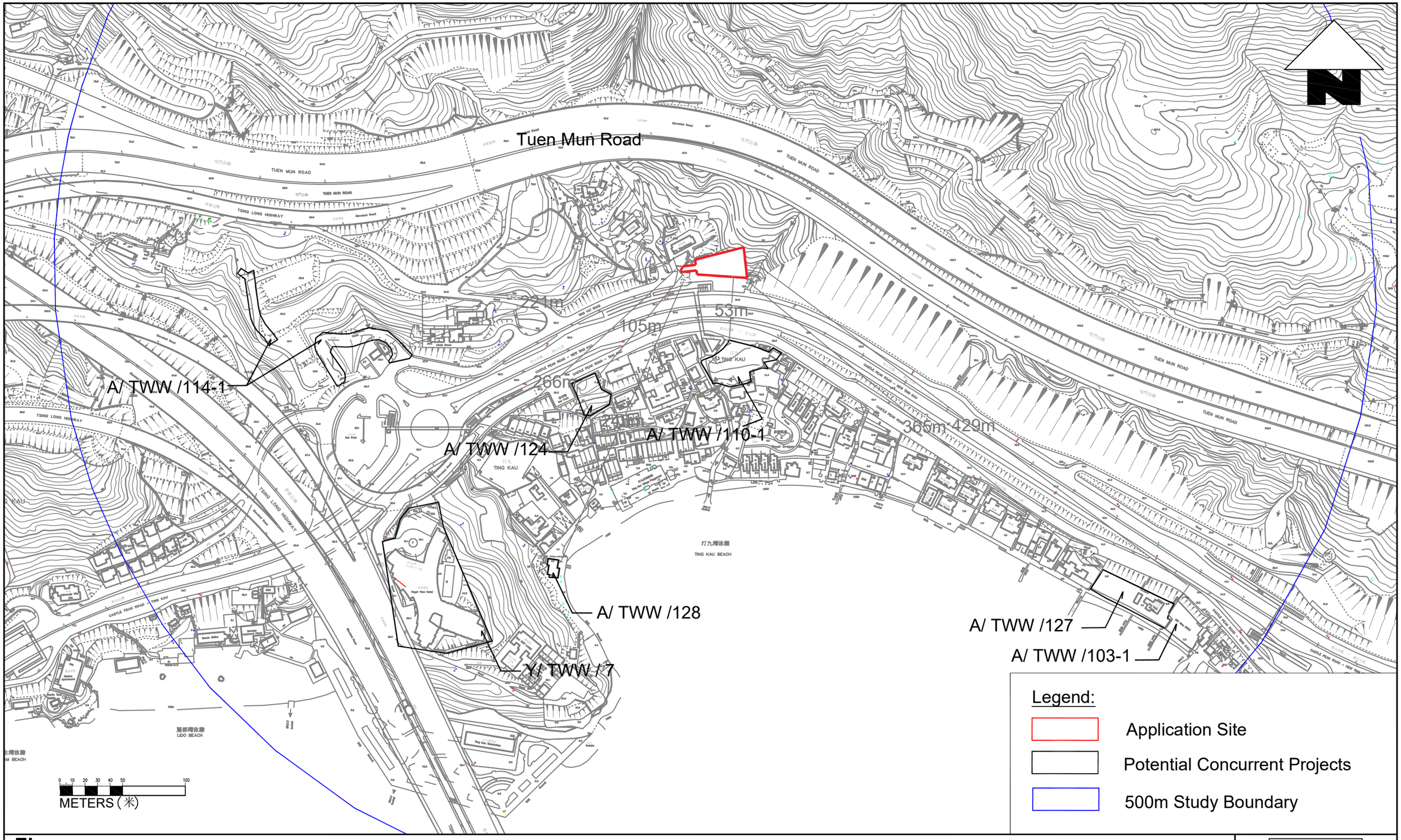


Figure:

Title: Location of Potential Concurrent Projects

Project: Proposed Redevelopment at Lot 453 in DD399, Ting Kau

Drawn by:	CL
Checked by:	TW
Rev.:	1.3
Date:	Apr 2025

\\aphkfps3\Drive Q\Projects\BHATK453EI00\05 Assessments\BHA_AQIA_Arial 20250417.dwg

Appendix 3.3

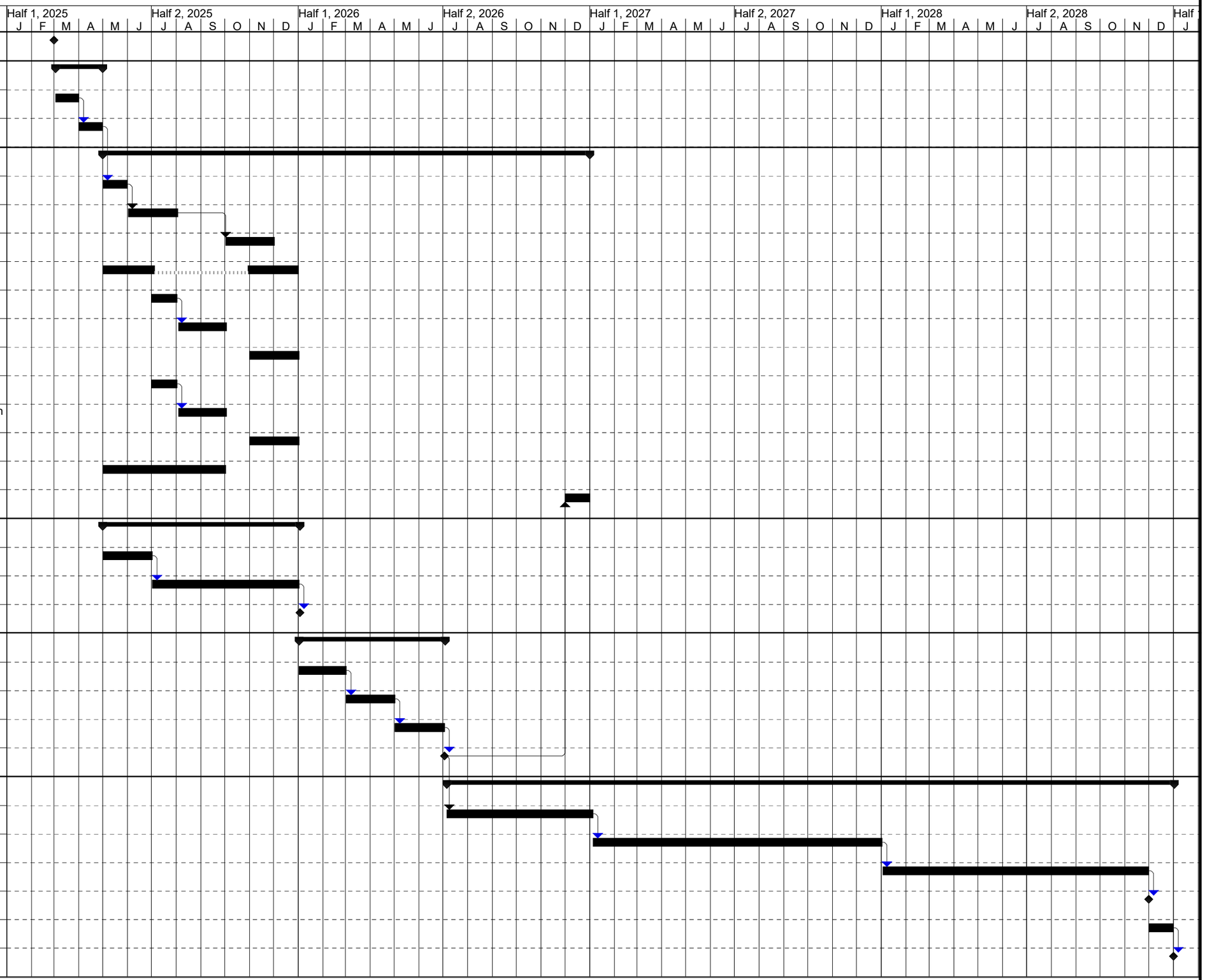
Tentative Development Programme

Project No.: 202327
Project Title : Proposed Residential Redevelopment at La Casetta, Lot 453 in D.D. 399, Ting Kau, Hong Kong

Date : 11/09/2024

Construction Program

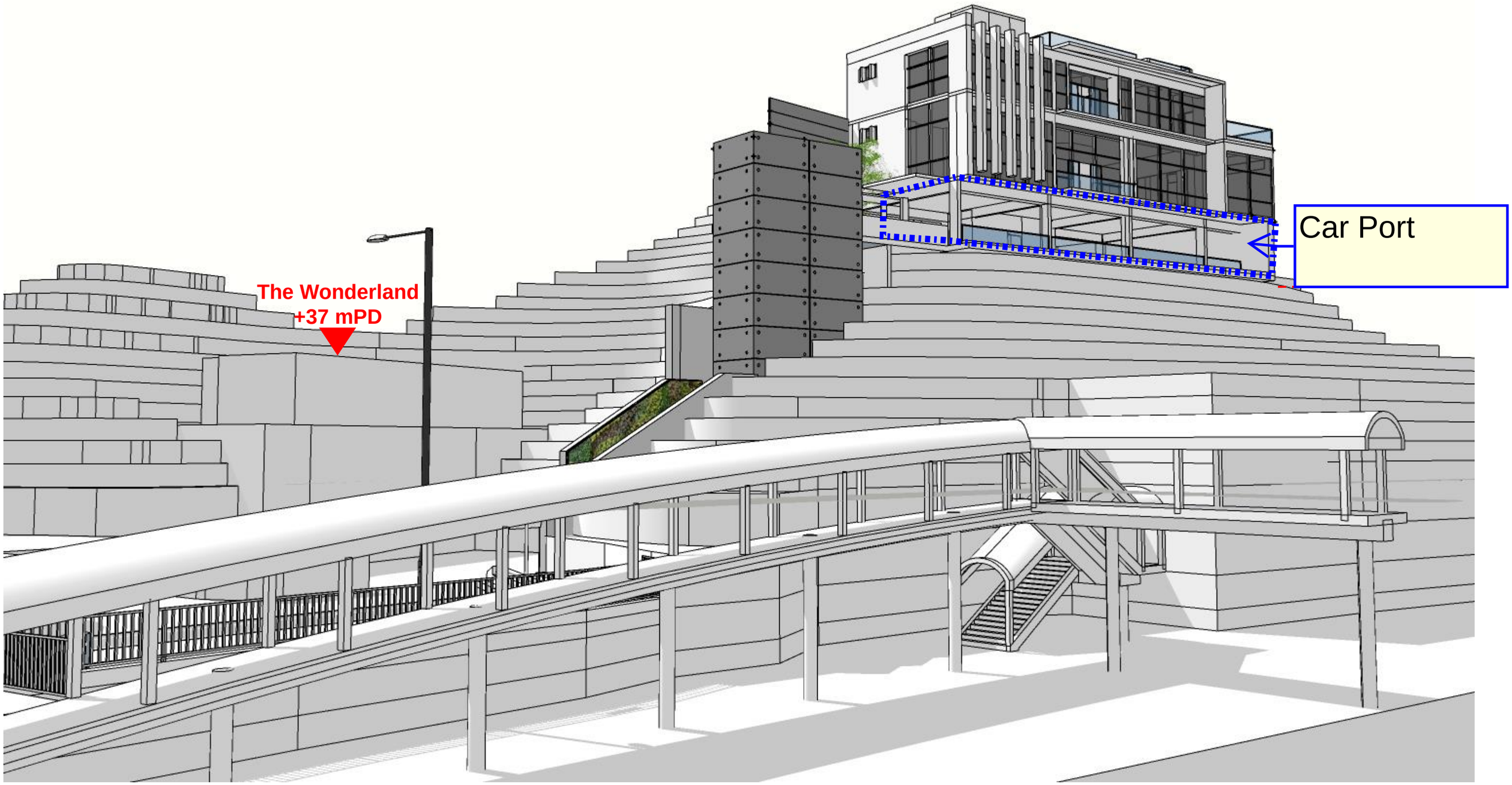
ID	Task Name
1	Town Planning Board Approval
2	**Design**
3	Feasibility Study / Preliminary Design
4	Detailed Design
5	**Statutory Submissions**
6	Preparation of GBP
7	GBP Submission
8	Resubmission of GBP
9	Hoarding Submission
10	Preparation of Drainage Plans
11	Drainage Plans Submission
12	Resubmission of Drainage Plans
13	Preparation of Slope Stability/ Footing and Structural Plans
14	Slope Stability/ Footing and Structural Plans Submission
15	Resubmission of Slope Stability/ Footing and Structural Plans Submission
16	GI Works Tender, Construction and Report Submission
17	Consent Application
18	**Tree Removal Submission**
19	Preparation of Tree Removal Application to DLO
20	Submission of Tree Removal Application
21	Approval by DLO
22	**Main Contract Tender Procedures**
23	Preparation of Main Contract Tender
24	Tender
25	Tender Return and Analysis
26	Award of Main Contract
27	**Construction Works**
28	Car Lift Ordering & Contractor's BD Submission
29	Tree Removal/ Foundation/ Slope Works
30	Superstructure Construction Works
31	Project Completion
32	Apply to BD for OP
33	Issue of OP



Appendix 3.4

Design Sypnosis of Carport

Perspective View



Natural Ventilated

Tentative E&M Room Exhaust Location and Direction.

N

PROPOSED RETAINING WALL

EXISTING RETAINING WALL

+47.393

+47.393

+44.74

E&M ROOM

E&M ROOM

UP

Storeroom

1100

1100

+44.043

6400

CAR LIFT

2590

3125

+44.043

CARPORT

+44.043

R3000

TURNTABLE

1

2

3

4

5

B

C

D

E

F

G

LEGENDS:

DEVELOPMENT AREA BOUNDARY LINE

BUILDING LINE (UNDER LEASE)

GFA FOR LG/F: 55.752 sq.m

- / LP-01 LG PLAN

SCALE: 1:100 (A3)

何 周 禮 建 築 設 計 事 務 所 有 限 公 司

REMARKS: DO NOT SCALE THIS DRAWING. ALL MEASUREMENTS MUST BE CHECKED ON SITE.

APPROVED:	-
DATE:	-
CHECKED:	MM
DATE:	-
DRAWN:	BC
DATE:	DEC 2023

BARRIE HO ARCHITECTURE - INTERIORS LTD

PROJECT: LA CASETTA, TING KAU

TITLE: LG PLAN

DWG NO.: LP-01

JOB NO.: 202327

SCALE: 1:100 (A3)

REVISION	DATE	DRAWN	CHECKED
A	MAY 2024	GL	MM

PLANNING SUBMISSION

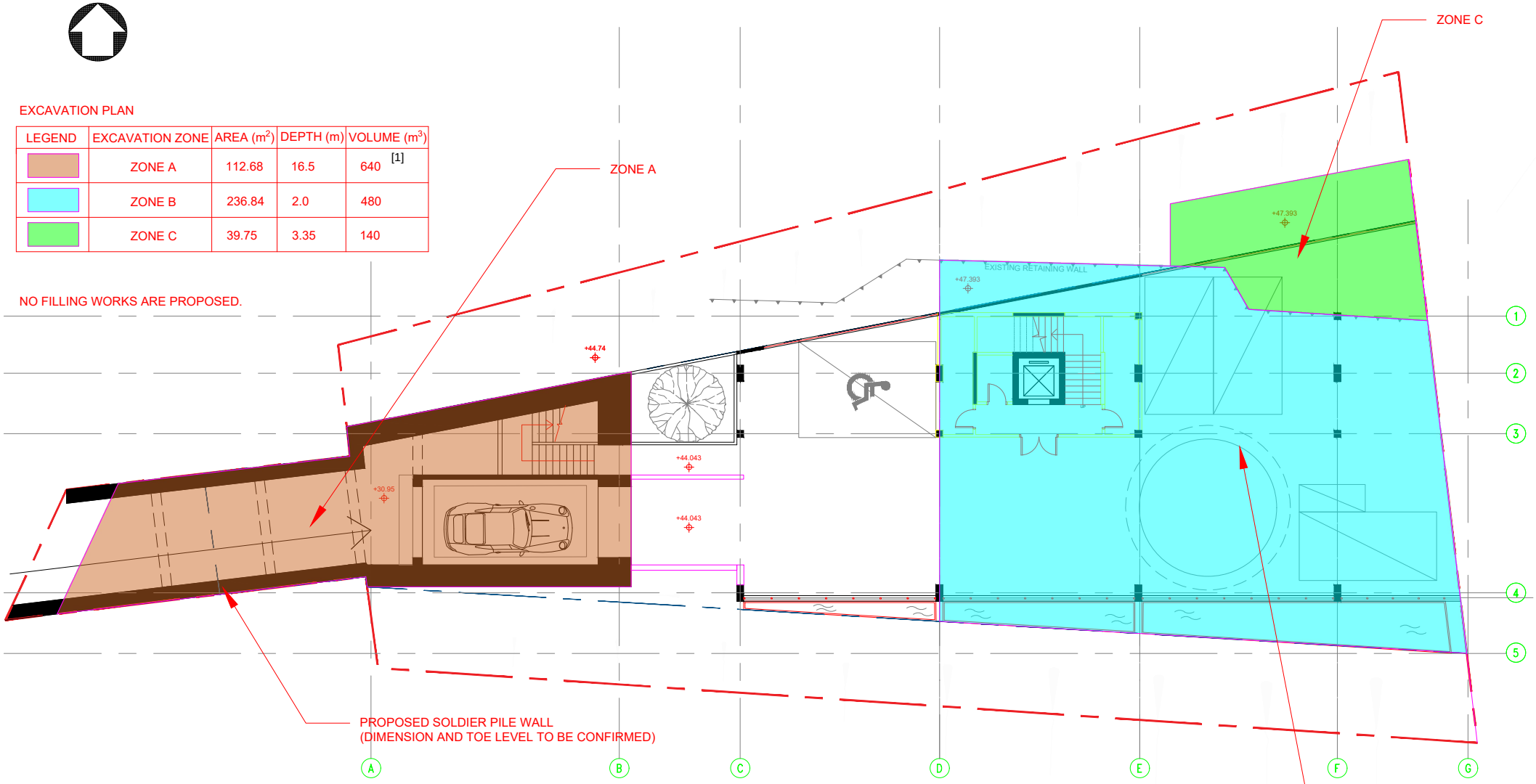
Appendix 4.1

Tentative Excavation Extent

EXCAVATION PLAN

LEGEND	EXCAVATION ZONE	AREA (m^2)	DEPTH (m)	VOLUME (m^3)
	ZONE A	112.68	16.5	640 [1]
	ZONE B	236.84	2.0	480
	ZONE C	39.75	3.35	140

NO FILLING WORKS ARE PROPOSED.



Remarks:

[1] *The ground level of Zone A is sloped, and thus the 16.5m referred to the maximum depth in the excavation zone. The volume is preliminarily estimated as 640 m^3.*

SMEC
Member of the Surbana Jurong Group

PROPOSED DEVELOPMENT OF LA CASETTA DD399 LOT 453 TING KAU

EXCAVATION PLAN

SCALE	1:200 (A4)	DATE	SEP 24
DRAWN BY	HW	CHECKED BY	EH
JOB NO.	7076981	REVISION	A