

**Attachment 5: Replacement Pages of Environmental
Assessment**

3. NOISE IMPACT ASSESSMENT

3.1 Introduction

- 3.1.1 The Subject Site is bounded by Pok Fu Lam Road to the northeast which is identified the major road traffic noise source. The noise environment onsite is dominated by road traffic noise. There is no industrial use in the surrounding and no noticeable noise from fixed noise source or industrial activities. Potentially noisy facilities of the proposed development will be designed so that they will meet relevant standard stipulated in the HKPSG. No unacceptable fixed noise impact due to the operation of the Proposed Development is anticipated.
- 3.1.2 Traffic noise impact assessment is prepared to address potential road traffic noise impact on the proposed residential redevelopment in future.

3.2 Assessment Criteria

- 3.2.1 Noise standards are recommended in the HKPSG for planning against noise impact from sources such as road traffic, railway and aircraft etc. The proposed development is residential in nature. Associated facilities such as plantroom are not considered noise sensitive uses. According to the guidelines, the maximum noise level from road traffic, measured in terms of L_{10} (1-hr) is recommended to be 70 dB(A) at typical facades of new dwellings.

3.3 Road Traffic Noise Impact Assessment Methodology

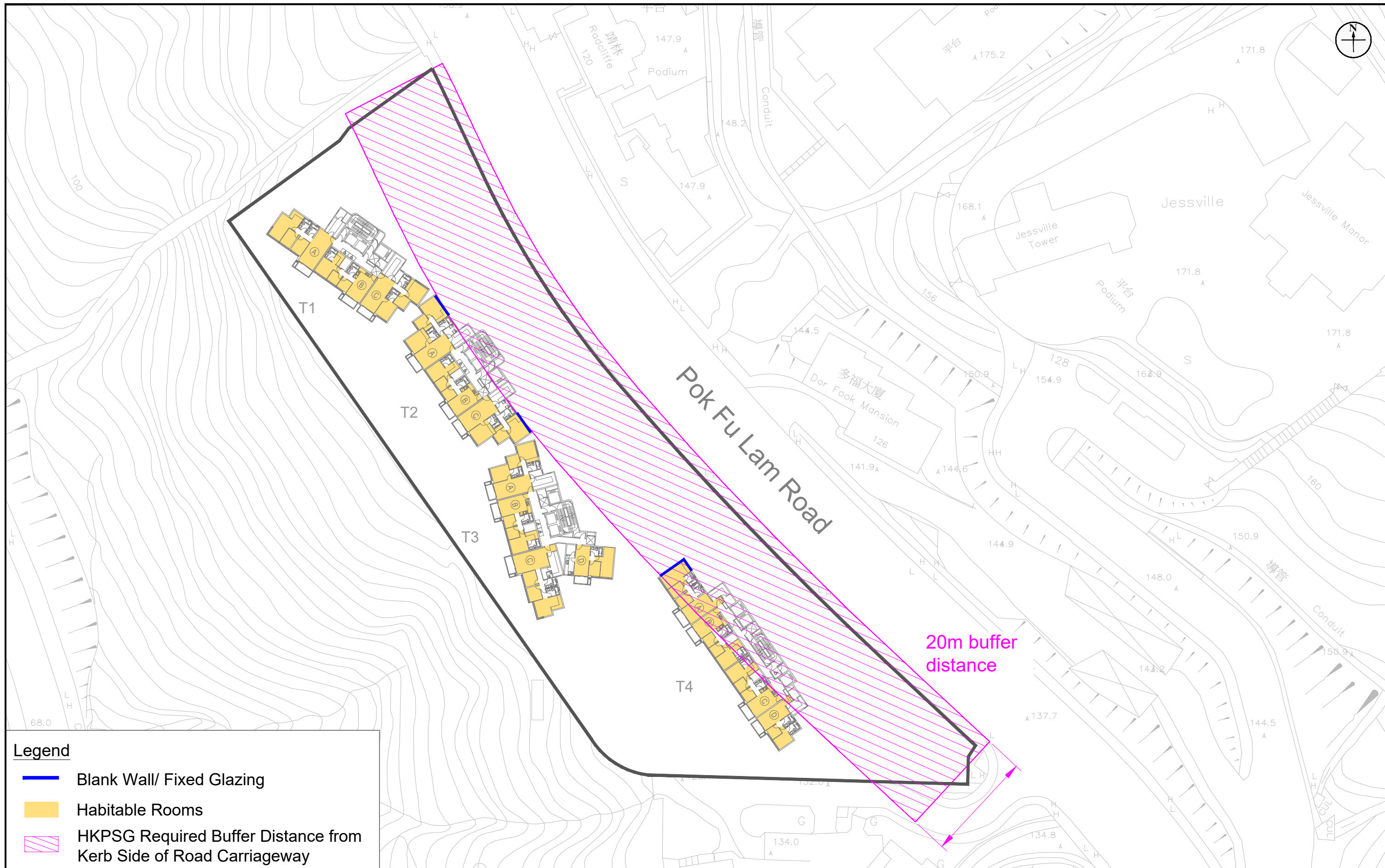
- 3.3.1 The assessment approach and methodology involved the prediction of future noise impacts on Noise Sensitive Receivers (NSRs) arising from traffic flows on existing and future road carriageways situated in the vicinity of the Subject Site.
- 3.3.2 The U.K. Department of Transport's procedure "Calculation of Road Traffic Noise" (CRTN) was used to predict the hourly L_{10} noise levels generated from road traffic at selected representative NSRs.
- 3.3.3 The Proposed development is applied for commencing operation in 2034. Traffic forecast for year 2049 representing the worst situation within 15 years from the operation is provided by project traffic consultant and included in **Appendix 2. Letter from traffic consultant with reply from Transport Department (TD) regarding endorsement of methodology is also appended in the same appendix.**

3.4 Noise Sensitive Receivers

- 3.4.1 NSRs within the Subject Site have been selected for openable window of habitable rooms to represent the noise sensitive uses of the proposed development. Locations of the NSRs are shown in **Figure 4.**
- 3.4.2 The assessment points have been taken to be situated at 1.2 m above floor slabs and at 1 m away from the external facade of openable windows of habitable room of the flats.

3.5 Predicted Road Traffic Noise Level under Base Case Scenario

- 3.5.1 The proposed development is designed with due consideration of road traffic noise impact. Single-aspect building design is adopted which means that all openable window (for ventilation purpose) of habitable rooms of residential blocks will be facing away from Pok Fu Lam Road. Nevertheless, assessment points are assigned to the glazing location under Base Case Scenario for completeness.



Legend

- Blank Wall/ Fixed Glazing
- Habitable Rooms
- HKPSG Required Buffer Distance from Kerb Side of Road Carriageway

Figure: 3a

Title: Buffer Separation between Kerb Side of Road Carriageway and Nearest Air Sensitive Uses in the Subject Site

Project: Section 16 Application - Layout Plan Submission and Proposed Minor Relaxation of Building Height Restriction for Permitted Flat Use At 131 Pok Fu Lam Road, Hong Kong, RBL 136RP

RAMBOLL

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Rev.: 2.1

Date: Dec 2023



Legend

- No opening / fresh air intake for air sensitive use
- HKPSG Required Buffer Distance from Kerb Side of Road Carriageway

Figure: 3b

Title: Buffer Separation between Kerb Side of Road Carriageway and Nearest Air Sensitive Uses in the Subject Site

Project: Section 16 Application - Layout Plan Submission and Proposed Minor Relaxation of Building Height Restriction for Permitted Flat Use At 131 Pok Fu Lam Road, Hong Kong, RBL 136RP

RAMBOLL

Drawn by: AL

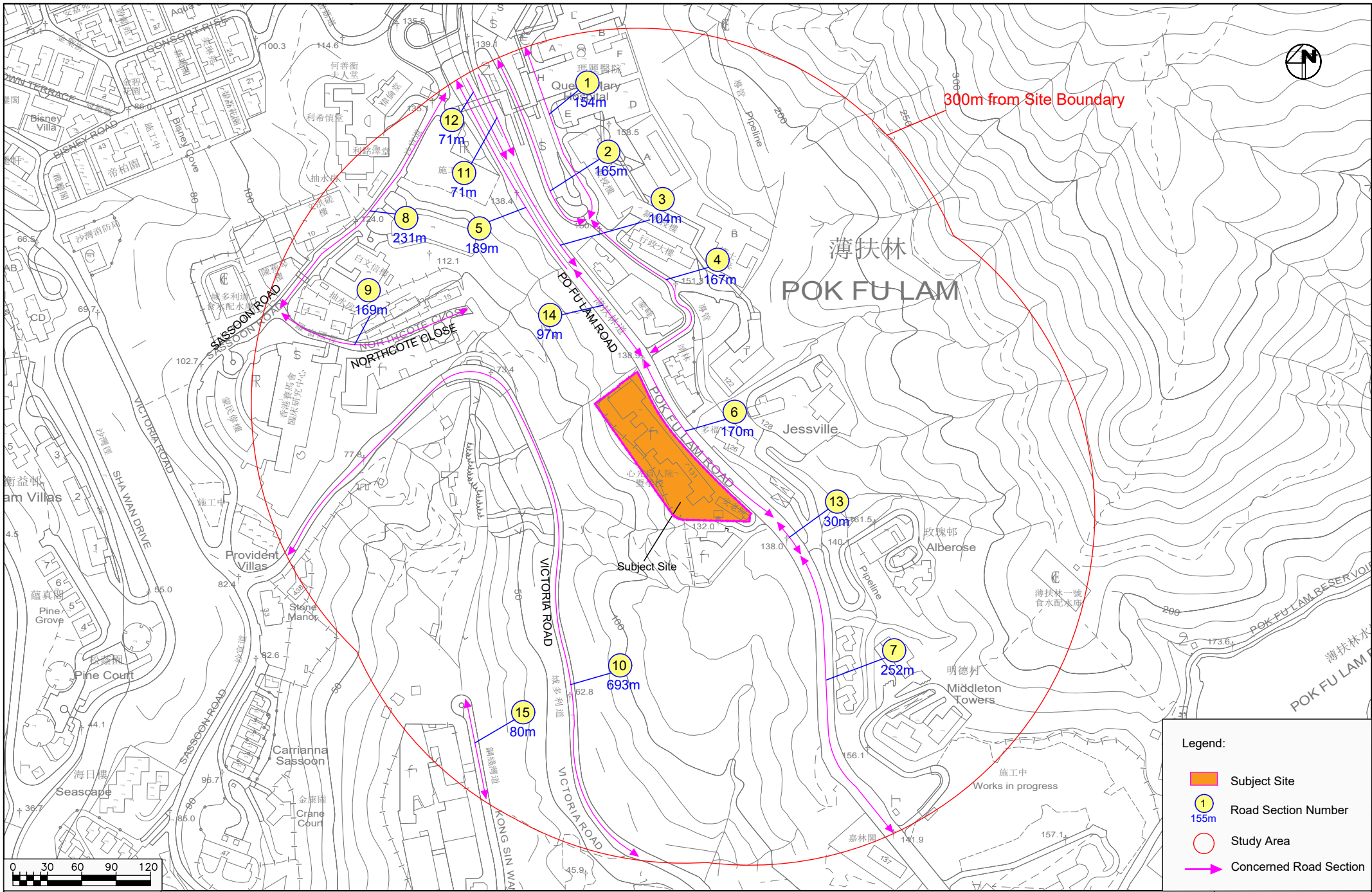
Checked by: CC

Rev.: 2.1

Date: Dec 2023

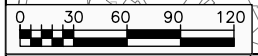
**Appendix 2 Traffic Forecast for Year 2049 Provided by Project Traffic
Consultant**

X:\Oz\082210 - Planning Applications for a Proposed Residential Development at Pok Fu Lam\Map\82210-Figure 1.dwg 2023/08/07 16:46:52



Legend:

- Subject Site
- Road Section Number
- Study Area
- Concerned Road Section



Project Title	
Section 16 Planning Application for Proposed Residential Development at Pok Fu Lam Road	
Noise Impact Assessment Study Area	
Date	Scale
07/08/2023	1:3000

Project No. 82210	Rev.
Dwg No. S16/Figure 1	-

2049 Peak Hour Traffic Forecast for Traffic Noise Impact Assessment

Road ID	Road Name	Section Between		1- or 2-Way	Direction	Road Type	Length (m)	AM Peak Hour		PM Peak Hour	
								Flow (veh/hr)	% HV	Flow (veh/hr)	% HV
1	Access Road from Pok Fu Lam Road	Queen Mary Hospital Professorial Block	Queen Mary Hospital Main Block	2-way	NB/SB	LD	154	793	19.1%	618	16.4%
2	Access Road from Pok Fu Lam Road	Queen Mary Hospital Professorial Block	Elevated Road	2-way	NB/SB	LD	165	881	19.1%	687	16.4%
3	Pok Fu Lam Road	Elevated Road	Royalton	1-way	SB	PD	104	975	26.4%	857	22.2%
4	Access Road from Pok Fu Lam Road	Royalton	Queen Mary Hospital Professorial Block	2-way	NB/WB	LD	167	372	0.7%	236	1.1%
5	Pok Fu Lam Road	Royalton	Elevated Road	1-way	NB	PD	189	1421	21.9%	1175	18.4%
6	Pok Fu Lam Road	Royalton	Ebenezer New Hope School Podium	2-way	NB/SB	PD	170	2688	21.2%	2218	18.3%
7	Pok Fu Lam Road	Ebenezer New Hope School Podium	Pok Fu Lam Reservoir Road	2-way	NB/SB	PD	252	2624	21.3%	2118	17.1%
8	Sassoon Road	Northcote Close	Pok Fu Lam Road	2-way	NB/SB	DD	231	1470	8.8%	1265	6.4%
9	Northcote Close	Sassoon Road	Cul-De-Sac	2-way	EB/WB	LD	169	79	9.8%	91	7.1%
10	Victoria Road	Sassoon Road	The ISF Academy (Secondary)	2-way	WB/SB	DD	693	1082	13.6%	817	13.0%
11	Pok Fu Lam Road Ramp	Sassoon Road Flyover	Elevated Road	1-way	SB	LD	71	241	65.7%	176	67.0%
12	Pok Fu Lam Road	Sassoon Road Flyover	Elevated Road	1-way	SB	PD	71	734	14.7%	681	12.4%
13	Pok Fu Lam Road	Elevated Road	Access Road to Alberose	2-way	NB/SB	PD	30	2624	21.3%	2118	17.1%
14	Pok Fu Lam Road	Elevated Road	Royalton	2-way	NB/SB	PD	97	2396	23.7%	2032	19.9%
15	Kong Sin Wan Road	Information Crescent	Cul-De-Sac	2-way	NB/SB	LD	80	375	4.5%	184	0.7%



Transport Planning • Traffic Engineering • Traffic Study •
Traffic & Civil Engineering Design • Traffic Review •
Temporary Traffic Management • TTM Implementation •
Traffic Impact Assessment • Traffic Surveys & Interview

16 January 2024

Our ref: 82786-20240116a

Your ref:

By Hand and email

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

Attention: Mr. Calvin CHIU

Dear Calvin,

**S16 Application for Layout Plan Submission and
Proposed Minor Relaxation of Building Height Restriction
for Permitted Flat Use at 131 Pok Fu Lam Road, Hong Kong, RBL 136RP**

Attached is a copy of the Technical Note detailing the forecast methodology and results of the 2049 traffic forecast for Traffic Noise Impact Assessment (TNIA), and the written endorsement by Transport Department.

We confirm that the forecasting methodology agreed by Transport Department is strictly adopted to produce the set of Year 2049 peak hour traffic forecast for road traffic noise impact assessment purpose.

Should you have any queries regarding the above, please feel free to contact the undersigned at 3488 5449.

Yours sincerely,

Oliver Cheung
encl.

HPN83

By Fax
3020 0370

本署檔案 Our Ref. : (HPQ2M) in TD HR146/192/POK-3(S)
來函檔號 Your Ref. : 82786-20231227a
電話 Tel. : 2829 5802
圖文傳真 Fax : 2824 0399
電郵 Email :

5 January 2024

OZZO Technology (HK) Ltd.
(Attn: Oliver Cheung)


Dear Sir/Madam,

**S16 Application for Layout Plan Submission and
Proposed Minor Relaxation of Building Height Restriction
for Permitted Flat Use at 131 Pok fu Lam Road, Hong Kong, RBL 136RP
Technical Note for Forecast Methodology for Traffic Noise Impact Assessment**

I refer to your above letter dated 27.12.2023 regarding the captioned subject.

2. Please be advised that I have no particular comment on your proposed traffic forecasting methodology presented under the above submission from the viewpoint of traffic engineering.

Yours faithfully,


(LEE Chun-yeung)
for Commissioner for Transport

市區(香港)分區辦事處
Urban Regional Office (Hong Kong)
香港灣仔告士打道七號入境事務大樓三十七樓
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Project	S16 Application for Layout Plan Submission and Proposed Minor Relaxation of Building Height Restriction for Permitted Flat Use At 131 Pok Fu Lam Road, Hong Kong, RBL 136RP	Date	27/12/2023
Note	2049 Forecast Traffic Data for Traffic Noise Impact Assessment Study	Page	1 of 5

1 *Introduction*

- 1.1 The Applicant intends to redevelop the site at No. 131, Pok Fu Lam Road, Pok Fu Lam (“the Application Site”), currently the Ebenezer School & Home for the Visually Impaired, to a residential development (“Proposed Development”). **Figure 1** shows the location of the Application Site.
- 1.2 This Technical Note presents the methodology for forecasting the traffic data required for the Traffic Noise Impact Assessment (TNIA), together with the resultant forecast traffic data.
- 1.3 As the requirement of traffic forecast for carrying out the EAS is stipulated in the Environmental Impact Assessment Ordinance (Section 5.1 of Annex 13, Page 2 & Section 4.5 of GN12, page 4), the assessment year for the proposed development should be 15 years from the proposed opening year of 2034, hence, the design year for the traffic forecast is set as 2049.

2 *TNIA Traffic Data Requirement*

- 2.1 **Figure 1** shows the assessment area for the TNIA Study and which includes all the road links within 300m of the Application Site. A total of 15 road sections are identified. To support the TNIA Study, the following data is required for each of the road sections:
- Peak hour traffic flows on all the concerned road links for the assessment year of 2049;
 - Vehicles are classified by the following two types:
 - Heavies (Vehicles > 1.5t laden weight) and
 - Others.

3 *Forecast Methodology*

- 3.1 The same forecast methodology adopted in the Traffic Impact Assessment (TIA) Study in support of the S16 Planning Application is used for forecasting the 2049 traffic flows as summarised below:

2049 Background Flows = 2023 Observed Flows (Section 4) x
Background Growth Factor (Section 5)

2049 Reference Flows = 2049 Background Flows + Additional Flows by
Planned Development (Section 6)

2049 Design Flows = 2049 Reference Flows + Additional Flows by
Proposed Development (Section 7)

4 *Collection of 2023 Observed Traffic Flows*

4.1 Manual classified count surveys were undertaken on 5 September 2023 (Tuesday) over the AM and PM peak periods between 07:00 to 10:00 and 16:00 to 19:00 respectively.

4.2 The peak hours for the assessment area for Noise Impact Assessment study, i.e. within 300m from the Application Site, is identified to occur at 07:45 – 08:45 in the morning and 17:45 - 18:45 in the evening.

5 *2049 Background Traffic Flows*

5.1 In determining the growth factor between 2023 and the forecast years of 2049, references have been made to the following information:

- Historical traffic growth from Annual Traffic Census (ATC);
- The population and employment forecasts from the 2019-based Territorial Population and Employment Data Matrices (TPEDM) published by Planning Department;
- Population Projections from Census and Statistics Department.

5.2 **Table 1** shows the historical trend of traffic growth in the vicinity of the Application Site over the 5-year period of 2013 to 2018. It is noted that due to the impact of social events in 2019 and Covid-19 over the period of 2020-2022, the ATC traffic data between 2019 and 2021 are not included in the assessment of historic trend of traffic growth in the area. An average annual growth of +0.62% per annum was recorded over the period of 2013 – 2018.

Table 1 Average Annual Daily Traffic from Annual Traffic Census

Station	Road	Between		2013	2014	2015	2016	2017	2018	Average Growth Rate p.a.
2201	Pok Fu Lam Rd	Pokfield Rd	Mount Davis Rd	30,260	29,680	31,640	31,990	31,440	31,560	+0.84%
				--	-1.92%	-0.43%	1.11%	-1.72%	0.38%	
2407	Smithfield Rd	Pok Fu Lam Rd	Lung Wah St	8,510	8,000	9,160	8,840	9,910	10,400	+4.09%
				--	-5.99%	-0.43%	-3.49%	12.10%	4.94%	
1836	Mount Davis Rd	Victoria Rd	Pok Fu Lam Rd	1,770	1,760	1,700	1,930	1,890	1,900	+1.43%
				--	-0.56%	-0.43%	13.53%	-2.07%	0.53%	
1811	Pok Fu Lam Rd	Mount Davis Rd	Bisney Rd	36,080	35,920	36,380	42,330	39,700	40,390	+2.28%
				--	-0.44%	-0.43%	16.36%	-6.21%	1.74%	
1603	Pok Fu Lam Rd	Sassoon Rd	Bisney Rd	36,610	36,460	40,540	39,900	38,970	39,650	+1.61%
				--	-0.41%	-0.43%	-1.58%	-2.33%	1.74%	
2604	Bisney Rd	Pok Fu Lam Rd	Consort Rise	3,280	3,210	3,130	3,310	3,110	2,700	-3.82%
				--	-2.13%	-0.43%	5.75%	-6.04%	-13.18%	
1005	Pok Fu Lam Rd	Sassoon Rd	Chi Fu Rd	25,910	26,800	26,570	27,000	25,800	25,760	-0.12%
				--	3.43%	-0.43%	1.62%	-4.44%	-0.16%	
1405	Pok Fu Lam Rd	Chi Fu Rd	Victoria Rd	24,980	26,120	25,740	25,740	25,140	25,570	+0.47%
				--	4.56%	-0.43%	0.00%	-2.33%	1.71%	
2609	Chi Fu Rd	Pok Fu Lam Rd	Pok Fu Lam Rd	5,400	5,260	5,410	5,630	5,590	4,860	-2.09%
				--	-2.59%	-0.43%	4.07%	-0.71%	-13.06%	
1204	Shek Pai Wan Rd	Victoria Rd	Wah Fu Rd	36,710	26,440	26,780	26,780	26,150	33,340	-1.91%
				--	-27.98%	-0.43%	0.00%	-2.35%	27.50%	
Total				209,510	199,650	207,050	213,450	207,700	216,130	+0.62%
				--	-4.71%	3.71%	3.09%	-2.69%	4.06%	

Source: 2013-2018 Annual Traffic Census (ATC) Reports published by Transport Department

5.3 Reference is made to the 2019-based Territorial Population and Employment Data Matrices (TPEDM) planning data published by Planning Department in Southern District. **Table 2** presents the population and employment data 2019 and 2031.

Table 2 2019-Based TPEDM for Southern District

Category	2019	2031	% Growth p.a.
			2019 - 2031
Population	273,150	282,400	0.28%
Employment Places	114,900	116,300	0.10%
Total	388,050	398,700	0.23%

Source: 2019-based TPEDM published by Planning Department

5.4 As shown in the table, the predicted growth of population and employment places in Southern District from 2019 to 2031 is approximately 0.28% and 0.10% per annum respectively.

- 5.5 Since planning data beyond 2031 is not available in TPEDM, reference is made to the population projections in Hong Kong by Census and Statistics Department (Hong Kong Population Projections 2020-2069 [9 Sep 2020]). The projected population growth in Hong Kong is summarised in **Table 3**.

Table 3 Projected Population Growth in Hong Kong

Category	2021	2026	2032	2044
Population (in thousand)	7,580	7,806	7,971	8,101
Average Annual Growth Rate (% p.a.)	-	2021 - 2026	2026 - 2032	2032 - 2044
	-	0.59%	0.35%	0.13%

Source: Hong Kong Population Projections 2020-2069 [9 Sep 2020] by Census and Statistics Department

- 5.6 It is noted that the growth trend of population in Hong Kong is expected to decrease after 2026 and further after 2032.

Estimated Growth Factor

- 5.7 Taking into account the information discussed above, it is proposed to adopt a growth rate of +1.0% per annum which is higher than the historical traffic growth (Table 1), the TPEDM forecast planning data for Southern District (Table 2) as well as the CSD Hong Kong Population Projections (Table 3).
- 5.8 By applying the estimated growth factor of +1.0% p.a. to the 2023 Observed Traffic Flows, the 2049 Background Traffic Flows are derived.

6 2049 Reference Traffic Flows

- 6.1 The additional traffic to be induced by the planned and committed developments in Pok Fu Lam area are summarised in **Table 4**. These additional traffic flows are added to the 2049 Peak Hour Background Traffic Flows to derive the 2049 Peak Hour Reference Flows.

Table 4 Additional Peak Hour Traffic by Planned/Committed Developments

Location	Use	Traffic Flows (pcu/hour)			
		AM Peak Hour		PM Peak Hour	
		Out	In	Out	In
Five Public Housing Sites in Pok Fu Lam South	8,900 Public Rental Housing ⁽¹⁾	385	290	211	268
Wah Fu Estate Redevelopment	3,000 Additional Public Rental Housing ⁽¹⁾	130	98	71	90
Queen Mary Hospital Redevelopment (New Block)	Operational uses (41 car parking spaces)	40	40	40	40
Rural Building Lot No. 925, High West, Pok Fu Lam	Proposed Residential ⁽²⁾ Institution (Student Hostel)	27	5	5	16
Cyberport Expansion Project	Office / Data Services Platform / Multi-function Hall etc. (about 66,000 m ²) ⁽³⁾	108	143	96	89
New Academic Building at an Extension Site East of No. 3 Sassoon Road	HKU Academic Building ⁽⁴⁾	13	32	39	16
HKU Pokfield Campus Site	HKU New Academic Complex ⁽⁵⁾	60	66	69	52

Notes: (1) Peak Hour trip rates for Subsidized Public Rental Housing High-Density R(A), average size 40m², extracted from TPDM Volume 1, Chapter 3, Annex D, Table 1
(2) Source: Approved Planning Application A/H10/94 (Appendix 1 – Traffic Impact Assessment Report)
(3) Source: Planning Application A/H10/95 (Appendix 4 – Traffic Technical Note)
(4) Source: Planning Application A/H10/13 (Appendix 4 – Traffic Impact Assessment Report)
(5) Source: TIA report of Planning Application for Pokfield Campus Site

7 2049 Design Traffic Flows

7.1 The traffic flows to be generated by the Proposed Development, as indicated in **Table 5**, are then added to the 2049 peak hour Reference Flows to derive the 2049 Peak Hour Design Flows.

Table 5 Estimated Peak Hour Traffic by Proposed Development

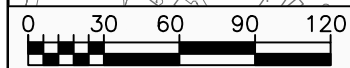
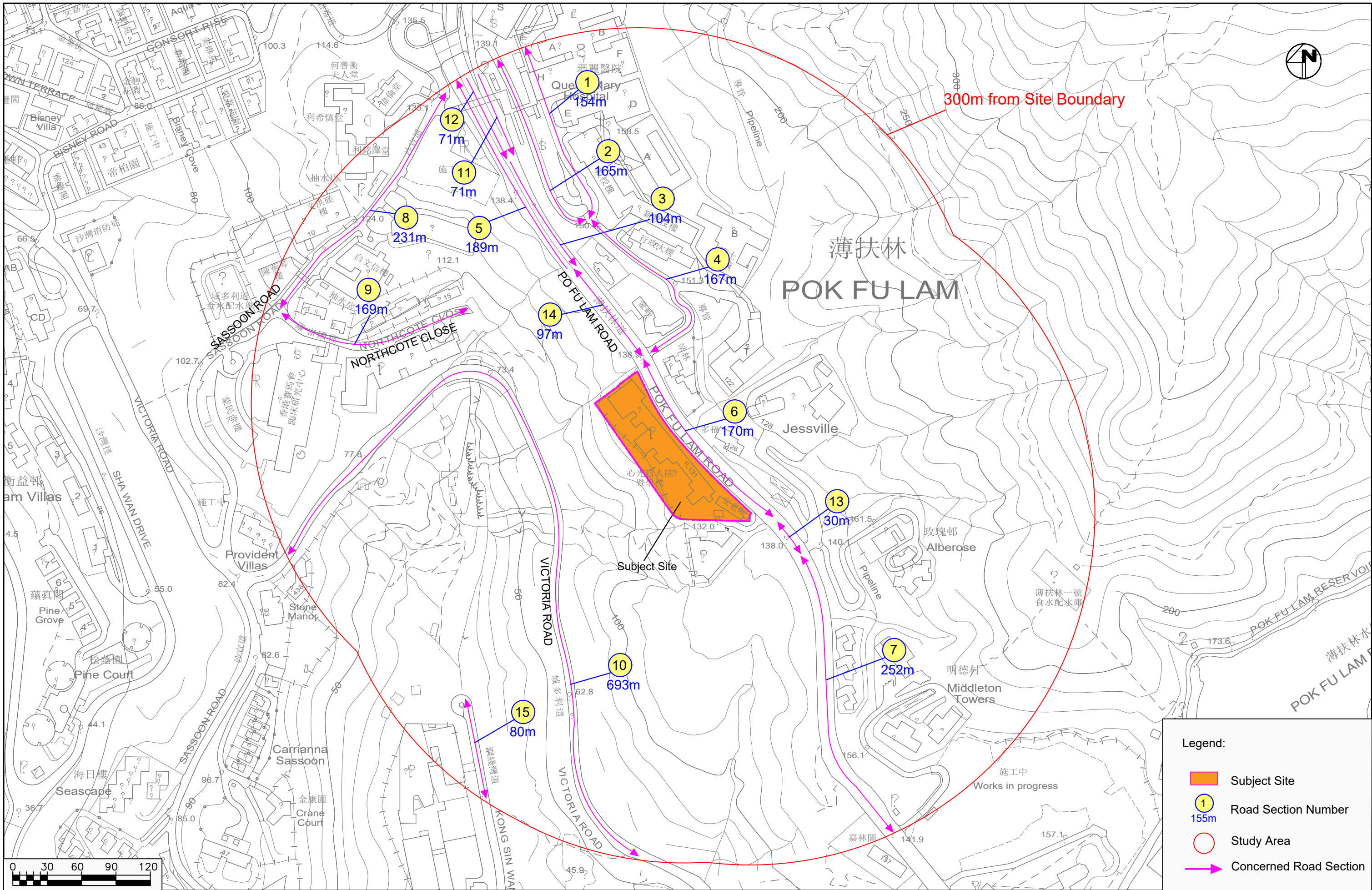
	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Proposed Development (average flat size 90.9 m ²)				
Trip Rates ⁽¹⁾ (pcu/hr/flat)	0.1219	0.2203	0.1563	0.1115
Traffic Flows (pcu/hr)	17	30	22	16
Total 2-way Trips (pcu/hr)	47		38	

Notes: (1) Peak Hour trip rates for Private Housing: High-Density / R(B) – Upper Limit with Average Flat Size 100m², extracted from TPDM Volume 1, Chapter 3, Appendix 1, Annex C, Table 1.

7.2 The 2049 peak hour flows on the concerned links shown in **Figure 1** are detailed in **Annex A**. The % of heavies observed on the concerned road links during the 2023 traffic surveys are adopted in the 2049 traffic forecasts.

Figure

X:\Ozzo\82786_S16 for Proposed Residential Development at 131 Pok Fu Lam Road\Drawings\82786-Figure 1.dwg 2023/12/20 10:29:17



Legend:

- Subject Site
- 1
155m Road Section Number
- Study Area
- Concerned Road Section

Date	07/08/2023
Scale	1:3000

Project Title

Section 16 Planning Application for Proposed Residential Development at Pok Fu Lam Road

Noise Impact Assessment Study Area

OZZO TECHNOLOGY

Project No. 82786	Rev.
Dwg No. Figure 1	-

Annex A

2049 TNIA Forecast Traffic Data

2049 Peak Hour Traffic Forecast for Traffic Noise Impact Assessment

Road ID	Road Name	Section Between		1- or 2-Way	Direction	Road Type	Length (m)	AM Peak Hour		PM Peak Hour	
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