Appendix II

Revised Environmental Assessment

Prepared for

New Season Global Limited

Prepared by

Ramboll Hong Kong Limited

SECTION 16 PLANNING APPLICATION FOR THE PRESERVATION AND REVITILISATION OF MARYKNOLL HOUSE, STANLEY, HONG KONG

ENVIRONMENTAL ASSESSMENT

Date	**10 January 2025**
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Project Reference	**CHPSTAMKEI00**
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CHAPTERS

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APPENDICES

1. INTRODUCTION

1.1 Project Background

1.1.1 The Application Site falls within an area zoned "Other Specified Uses (Residential Development with Historic Building Preserved)" ("OU" zone) on the Approved Stanley Outline Zoning Plan No. S/H19/16. The zone is restricted to +64mPD on the lower southwest portion, and +75mPD at the remainder northwest portion reflecting the height of Maryknoll House.

1.1.2 This planning application proposes a residential development which preserves and revitalises the Maryknoll House. The Proposed Scheme envisions to preserve most of the architectural heritage and to maintain a similar use to the original function of the Maryknoll House as an accommodation building. At the same time, the Proposed Scheme seeks to revitalise the Maryknoll House through good planning and design measures for the adaptive reuse of the heritage building and its surrounding environment.

1.1.3 Ramboll Hong Kong Limited has been commissioned by New Season Global Limited (hereinafter referred as "Applicant") to conduct an Environmental Assessment (EA) in support of the S16 planning application. The EA report will assess the major environmental issues (i.e. Air Quality and Noise Impact) of the Application Site and the surrounding area.

1.1.4 A Section 16 Planning Application (A/H19/82) was submitted in 2021 for proposed residential redevelopment at the Application Site. The application was approved by the Town Planning Board (TPB) in the meeting dated 24 December 2021.

1.1.5 Further to the completion year has been changed to Year 2028, the layout plan has been changed, the plot ratio has been proposed to be increased and the building height restriction has been proposed to be increased from 75.0mPD to 75.4mPD, this EA has been assessed with the updated traffic forecast and predicted worst-case scenario for the road traffic noise impact assessment.

1.2 Application Site and its Environ

1.2.1 The Application Site area is about 7646 m^2. The Application Site is located on a small ridge and to the north-western of Stanley Market. The Stanley Knoll development is located to the north and east of the Application Site, while the Carmel Hill development is to the south-eastern of the Application Site. To the south-west and south of the site is a retaining wall followed by a steep vegetated slope. The south-east and south-west boundaries of the site adjoin with the neighbouring area zoned as "Green Belt".

1.2.2 At present, the Application Site is accessible from Stanley Village Road of which is located to the north-eastern of the Application Site and via the internal access road of Stanley Knoll. Carmel Road connecting the Stanley Village Road is located to the south of the Application Site.

1.2.3 **Figure 1.1** shows the location of the Application Site and its environ.

1.3 Existing Development

1.3.1 The Application Site is occupied by the Maryknoll House while it is no longer operating.

1.4 Proposed Scheme

1.4.1 The development mainly consists of residential units and other supporting ancillaries such as underground carpark, private and garden decks, common and private swimming pools. **Appendix 1-1** shows the indicative Master Layout Plan of the Proposed Scheme.

1.5 Appraisal of Environmental Impact

Air Quality

1.5.1 The Application Site is situated on a small ridge, where bounded by Carmel Road and Stanley Village Road. Other carriageways are further away. Compliance with the separation distance requirement has been verified.

1.5.2 Moreover, the district that the Application Site resides is dominated by residential uses, vegetation area, and then school and commercial uses further apart. A survey has therefore been conducted to demonstrate absence of chimney stack in the surrounding.

1.5.3 The potential air quality has been addressed in Chapter 2 of this EA.

Noise

1.5.4 As mentioned, the surrounding area is dominated by residential uses. Few fixed noise sources have be identified at the Stanley Oriental Hotel and Stanley Municipal Services Building, which are MVAC system. The shortest distances between the boundary of the Application Site and the identified fixed noise sources are ~157m and ~201m respectively (as shown in **Figure 1.2**). There are existing noise sensitive receivers (such as Carmel Hill) located closer to the identified fixed noise sources (~74m and ~100m from the fixed noise sources respectively) and with direct line of sight to the identified fixed noise sources. It is believed that the noise impact generated by the identified fixed noise sources should satisfy the noise criteria of Noise Control Ordinance. Nevertheless, to be prudent, a fixed noise impact assessment has been conducted (Chapter 4) to cover all identified fixed noise sources in order to evaluate the significance of associated fixed noise impact.

1.5.5 The development is not environmentally polluting in nature and compatible with adjacent land uses. Should there be any fixed noisy facilities (e.g. fan system, HVAC for Common Facilities / E&M) provided in future, it will be designed to follow the HKPSG requirement (i.e. acceptable noise level minus 5 decibels) to ensure that there is no adverse impact on any noise sensitive use in the surrounding.

1.5.6 The proposed development is residential in nature. According to the design of the proposed development, Common Facilities / E&M will be provided. Therefore, there will be the potential fixed noise sources from the centralized air conditioning system and plant rooms (i.e. transformer room). Since there is no detail of the design available for the centralized air-conditioning system (e.g. type and number of equipment, etc.) and the plant room, the above-mentioned potential fixed noise sources will be designed to minimize the fixed noise impact and onsite noise control measures will be provided (if needed) in order to minimize the potential fixed noise impact and comply with HKPSG standard during the detailed design stage. Suitable silencers, acoustic louvers and enclosures will be adopted if required. Such requirement will be incorporated into the future tender so that the contractor for such building services equipment will need to comply with the standard in the detailed design.

1.5.7 Given that there will be increased population and in turn traffic flow induced, roads traffic noise has been assessed in Chapter 3 of this EA, taking into account future flow from carriageways within 300m study area.

1.6 Objectives

1.6.1 The objectives for this Environmental Assessment are listed as follows:

- To evaluate the potential air quality impact due to vehicular and chimney stack emissions sources, if any, in the vicinity of the Application Site; and

1.6.2 To evaluate and assess potential road traffic noise impact on the Proposed Scheme at the Application Site, and propose practicable noise mitigation measures to attenuate the impact;

2. AIR QUALITY IMPACT ASSESSMENT

2.1 Introduction

2.1.1 This section identifies potential air quality constraints arising from the traffic emissions along the road carriageways, chimney emission (if any) from industrial stack surrounding the Application Site and the odour impacts from the potential odour sources during the operation of the Proposed Scheme.

2.2 Assessment Criteria

2.2.1 The Hong Kong Planning Standards and Guidelines (HKPSG) has provided a set of guidelines to assess the potential air quality impacts generated from traffic. **Table 2-1** below is extracted from Table 3.1 in Chapter 9 of HKPSG, which shows the minimum horizontal buffer distance between kerb side of roads and sensitive uses for various types of road.

Table 2-1 Guidelines on Usage of Open Space Site (HKPSG Chapter 9: Environment)

Pollution Source	Parameter	Buffer Distance	Permitted Uses
Road and Highways	*Type of Road*		
	Trunk Road and Primary Distributor	>20 m	Active and passive recreation uses
		3 – 20 m	Passive recreational uses
		<3 m	Amenity area
	District Distributor	>10 m	Active and passive recreation uses
		<10 m	Passive recreational uses
	Local Distributor	>5 m	Active and passive recreation uses
		<5 m	Passive recreational uses
	Under Flyovers		Passive recreational uses
Industrial Areas	*Difference in Height between Industrial Chimney Exit and the Site*		
	<20 m	>200 m	Active and passive recreation uses
		5 – 200 m	Passive recreational uses
	20 – 30 m (*)	>100 m	Active and passive recreation uses
		5 – 100 m	Passive recreational uses
	30 – 40 m	>50 m	Active and passive recreation uses
		5 – 50 m	Passive recreational uses
	>40 m	>10 m	Active and passive recreation uses
Construction and earth moving activities	-	<50 m	Passive recreational uses
		>50 m	Active and passive recreation uses

Remarks:

(a) In situations where the height of chimneys is not known, use the set of guidelines marked with an asterisk for preliminary planning purpose and refine as and when more information is available.

(b) The buffer distance is the horizontal, shortest distance from the boundary of the industrial lot, the position of existing chimneys or the edge of road kerb, to the boundary of open space sites.

(c) The guidelines are generally applicable to major industrial areas but NOT individual large industrial establishments which are likely to be significant air pollution sources. Consult EPD when planning open space sites close to such establishments.

(d) Amenity areas are permitted in any situation.

(e) *Since there is no specific buffer distance requirement for residential/ domestic premises indicated in the HKPSG, consideration of buffer distance of the Proposed Scheme has been referred to "Open Space" site.*

2.3 Chimney Emission Impact

2.3.1 Since no chimneys are identified within the 200m of the Application Site, the Application Site is not subject to chimney emission impact.

2.3.2 On-site survey was conducted on 8 July 2024 to verify the presence of chimneys.

2.3.3 The surrounding area is dominated by residential use, school development and commercial use. The area within 200m from the Application Site is zoned green belt (GB), Residential (R(A), R(C)), Commercial (C), Open Space (O), Other Specified Uses (OU) and Government, Institution or Community (G/IC). There is no area zoned "industrial" within 200m from the Proposed Scheme. **Figure 2.1** shows the 200m survey area from the boundary of the Application Site.

2.3.4 Based on onsite survey, it was confirmed that there would be no chimney identified within 200m from the Application Site, which complies with recommended separation distance as stipulated in Chapter 9 of HKPSG.

2.3.5 It is anticipated that the Application Site would not be subject to adverse chimney emission impact. It is confirmed that the chimney emission data have been validated and updated by consultant's own survey. It is understood that if there are any errors subsequently found in their chimney data used, the assessment results may be invalidated.

2.4 Vehicular Emission Impact

2.4.1 The Application Site is bounded by Carmel Road and Stanley Village Road. According to the Annual Traffic Census (2022) published by the Transport Department, Carmel Road and Stanley Village Road are classified as Local Distributors. Other carriageways are sited at least 130m away and their associated impact is not likely significant.

2.4.2 **Figure 2.2** shows the buffer distance from the kerb side of Carmel Road and Stanley Village Road to the Application Site. It is confirmed that sufficient buffer distance is provided between the road networks and the Application Site.

2.4.3 There will be no air sensitive use/ fresh air intake/ openable window with inadequate air buffer distance maintained. It is expected that the Application Site would not be subject to adverse vehicular emission impact with respect to the HKPSG.

2.5 Impact arising from Proposed Scheme

2.5.1 The Proposed Scheme is residential in nature and not environmental polluting. No emission sources will be introduced by the Proposed Scheme, therefore there is no adverse air quality impact due to future operation of the Proposed Scheme is anticipated.

2.6 Conclusion

2.6.1 No chimneys were found within 200m from the Application Site. Therefore, no adverse air quality impact due to industrial emission is expected.

2.6.2 For vehicular emissions, either the buffer distance requirement is fulfilled or long vertical separation from roundabout with limited traffic flow is maintained. Therefore, no adverse vehicular emission impact on the Proposed Scheme is anticipated.

2.6.3 The development and associated facilities are not air polluting in nature and will unlikely create any significant air pollution.

3. ROAD TRAFFIC NOISE IMPACT ASSESSMENT

3.1 Introduction

3.1.1 This road traffic noise impact assessment is prepared to address potential road traffic noise impact on the noise sensitive uses of the Proposed Scheme and to recommend mitigation measures where practicable to attenuate the impact.

3.1.2 Based on discussion in **Chapter 1**, among the Proposed Scheme, the residential dwelling will rely on opened window for ventilation purpose whereas Common Facilities will be provided with centralized air conditioning and not rely on opened window for ventilation. Other uses such as carpark and E&M room are not noise sensitive in nature.

3.2 Assessment Criteria

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

3.2.2 Under the HKPSG, the criterion for road traffic noise impact for dwellings, is $L_{10(1\text{-hour})}$ 70 dB(A). The criteria apply to habitable rooms which rely on openable windows for ventilation.

3.3 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 Application 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 Worst-case scenario has been considered for this project, any building block of the Application Site have not considered in the noise model. It means that this assessment is not relied on the scheme design. Representative NSRs have been selected along the Application Site boundary, except for a part of the area on the southwest side of the Application Site. No openings, such as windows or doors, for noise-sensitive uses will be proposed within this area (shown in **Figure 3.1**).

3.3.4 Based on the tentative completion date of the proposed residential development (year 2028), traffic forecast for the year 2043 on the road carriageways situated in the vicinity of the Application Site was provided by the Traffic Consultant, CTA Consultants Limited for the prediction of the worst-case traffic noise impact within 15 years from the completion of the development. The projected traffic flows and vehicle composition are shown in **Appendix 3-1.**

3.3.5 The road surfacing type of all the carriageways within 300m assessment area of the Application Site is assumed impervious. Speed limit of 50 km/hr is assumed for all roads.

3.4 Noise Sensitive Receivers

3.4.1 As the layout of the proposed development has not been confirmed yet, representative NSRs have been selected to represent the noise sensitive uses of the proposed development, which are at the location worst affected by road traffic noise in this assessment. All assessment points were taken at 1.2 m above the floor and 1 m away from the façade of openable windows or doors of rooms of sensitive uses (e.g. living room, bedroom).

3.4.2 **Figure 3.1** illustrates the locations of the selected representative NSRs for road traffic noise impact assessment.

3.5 Assessment Result (Base Scenario)

3.5.1 The predicted road traffic noise levels on the selected representative NSRs based on the development scheme without any noise mitigation measures were assessed.

3.5.2 According to the assessment result under base case scenario as presented in **Appendix 3-2**, full compliance of road traffic noise standard is achieved.

3.6 Conclusion

3.6.1 Road traffic noise impact assessment has been carried out by selecting representative NSRs to represent the noise sensitive uses of the proposed development, which are at the location worst affected by road traffic noise.

3.6.2 Based on the road traffic noise impact assessment results, the road traffic noise level complies with relevant standards. Therefore, no adverse noise impact is anticipated. As mentioned above, the representative NSRs have been selected to represent the noise sensitive uses of the proposed development, which are at the location worst affected by road traffic noise. As long as the NSRs of the future layout will not located closer to the road, the NSRs will not be subject to advise road traffic noise impact.

4. FIXED NOISE IMPACT ASSESSMENT

4.1 Introduction

4.1.1 The aim of this study is to review potential noise impacts arising from the nearby fixed noise sources, including industrial buildings and activities within 300m of the Proposed Development. Practicable noise mitigation measures would be recommended, where necessary.

4.2 Assessment Criteria

4.2.1 Impacts of fixed noise sources on sensitive uses of the Proposed Development are controlled under the *Noise Control Ordinance* ("*NCO*"), which requires that the impacts must comply with the *Acceptable Noise Levels* ("*ANL*") laid down in Table 2 of the *Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites* ("*IND-TM*").

4.2.2 In setting the *ANL*, reference has to be made to the *Area Sensitivity Rating* ("*ASR*") in Table 1 of *IND-TM* reflecting the type of area where the noise sensitive receivers ("NSRs") are situated. As discussed before, the Application Site is surrounded by residential uses. In accordance with IND-TM, the type of the area where the Application Site located is considered to be "Type (II) Low density residential area consisting of low-rise or isolated high-rise developments". Future noise sensitive uses of the proposed development are not expected to be directly affected by influencing factors ("IF") such as major roads with Annual Average Daily Traffic ("AADT") in excess of 30,000 or significant scale of industrial operations. The Application Site is also not within 100m of "industrial" or "Industrial Estate" zones. An *ASR* of "A" is considered representative of the noise sensitive uses.

Table 4.1 Acceptable Noise Level

Time Period	ASR "A", Leq (30 min), dB(A)
Day & Evening (0700 – 2300 hours)	60
Night (2300 – 0700 hours)	50

4.3 Identification of Fixed Noise Sources

4.3.1 Regarding the Proposed Development, as mentioned in Chapter 1, the proposed development is residential in nature. The potential noise sources would include the centralized air conditioning system from common facilities and plant rooms. However, there are no details of the design at the current stage, HKPSG (i.e. ANL-5dB(A) or prevailing background whichever is lower) is observed and will be followed during detailed design stage of the project. Relevant requirement will be stipulated in future tender to ensure the standard can be complied with.

4.3.2 Regarding impact from fixed noise sources in the surrounding, the site investigations were conducted on 18 Oct 2024 and 20 Dec 2024 to identify the fixed noise sources. The identified fixed noise sources within the 300m study area were tabulated in and shown in **Figure 4.1**.

Table 4.2 Identified Fixed Noise Sources within the 300m Study Area

Building Name [Source ID]	Type of Noise Sources	Height	Separation from Nearest Site Boundary
The Stanley Oriental Hotel [SOH]	Cooling tower (1 no.) VRV (4 nos.)	~46mPD	~155m

Building Name [Source ID]	Type of Noise Sources	Height	Separation from Nearest Site Boundary
Stanley Municipal Services Building [SMSB]	Chiller (3 nos.) ^	~31mPD	~195m

^No night time operation

4.3.3 Since the operators did not provide the information for the fixed noise source and also not allow for the noise measurement. Furthermore, most of the identified fixed noise sources are located at rooftop, direct noise measurement is not possible. Therefore, the noise strength of the identified noise sources has been assumed based on reference equipment catalogue model of similar scale. The equipment catalogues for the reference of calculation are shown in **Appendix 4-1**.

4.4 Assessment Methodology

4.4.1 Assessment of noise impact arising from fixed noise sources has been based on standard acoustic principles and procedures given in the IND-TM. Noise impacts due to individual noise sources are calculated and logarithmically summed at each NSR to represent the overall impacts:

PNL = SWL + Cdist + Cfac + Cton + Cbar

where

PNL is the predicted noise level at the Noise Sensitive Receiver in dB(A)

SWL is the sound power level of the noisy industrial activities in dB(A)

Cqua is the correction for the number event/equipment in dB(A)

Cdist is the distance correction in dB(A) Distance Attenuation Correction, dB(A) = - 20×log(Dist) - 8 where Dist = slant distance measured from noise source to NSR

Cfac is façade correction, +3 dB(A)

Cton is correction for tonality as in IND-TM, if applicable

Cbar is barrier correction for substantial shielding by building structure, - 10 dB(A)

Note: Other correction for intermittency and impulsiveness are considered not applicable.

4.5 Representative Noise Sensitive Receivers

4.5.1 As the layout of the proposed development has not been confirmed yet, representative NSRs have been selected to represent the noise sensitive uses of the proposed development, which are at the location worst affected by fixed noise in this assessment. All assessment points were taken at 1.2 m above the floor and 1 m away from the façade of openable windows or doors of rooms of sensitive uses (e.g. living room, bedroom).

4.5.2 **Figure 4.1** illustrates the locations of the representative NSRs for fixed noise impact assessment.

4.6 Fixed Noise Impact Assessment Result of the Proposed Development (Base Case Scenario)

4.6.1 The predicted noise level at the representative NSRs under base case scenario has been calculated and detailed calculations are included in **Appendix 4-2**.

4.6.2 According to the assessment results, the predicted noise levels at the representative NSRs would comply with relevant standards without noise mitigation. No adverse fixed noise impact on the Proposed Development is anticipated.

4.7 Conclusion

4.7.1 According to the predicted result of fixed noise impact assessment, no adverse fixed noise impact due to surrounding fixed noise sources on the Proposed Development is anticipated.

4.7.2 In order to avoid adverse fixed noise impact of the future fixed noise sources onsite on the surrounding NSRs, the future contractor shall ensure that the equipment within the Proposed Development would be designed and installed to meet the HKPSG criteria and the NCO.

5. CONCLUSION

5.1.1 The environmental air quality and noise impacts have been assessed in this report with respect to the Proposed Scheme which is residential in nature.

Air Quality

5.1.2 For air quality, no chimney stacks were identified within the 200m assessment area.

5.1.3 The buffer distance requirement is fulfilled. Therefore, no adverse vehicular emission impact on the Proposed Scheme is anticipated.

5.1.4 The proposed residential development is not air polluting in nature so that no adverse air quality impact due to its future operation is anticipated.

5.1.5 Based on the mentioned, no adverse air quality impact on or arising from the Proposed Scheme is anticipated.

5.1.6 Among the Proposed Scheme, only residential dwelling will rely on openable window for natural ventilation while other uses (Common Facilities) will be provided with centralized air conditioning.

Road Traffic Noise

5.1.7 The worst-case scenario has been considered for this project. Based on the road traffic noise impact assessment results, the road traffic noise levels comply with relevant standards, and no adverse road traffic noise impact is predicted.

Fixed Noise

5.1.8 According to the predicted result of fixed noise impact assessment, no adverse fixed noise impact due to surrounding fixed noise sources on the Proposed Development is anticipated. No noise mitigation is considered necessary.

5.1.9 In order to avoid adverse fixed noise impact of the future fixed noise sources onsite on the surrounding NSRs, the future contractor shall ensure that the equipment within the Proposed Development would be designed and installed to meet the HKPSG criteria and the NCO.

Figures

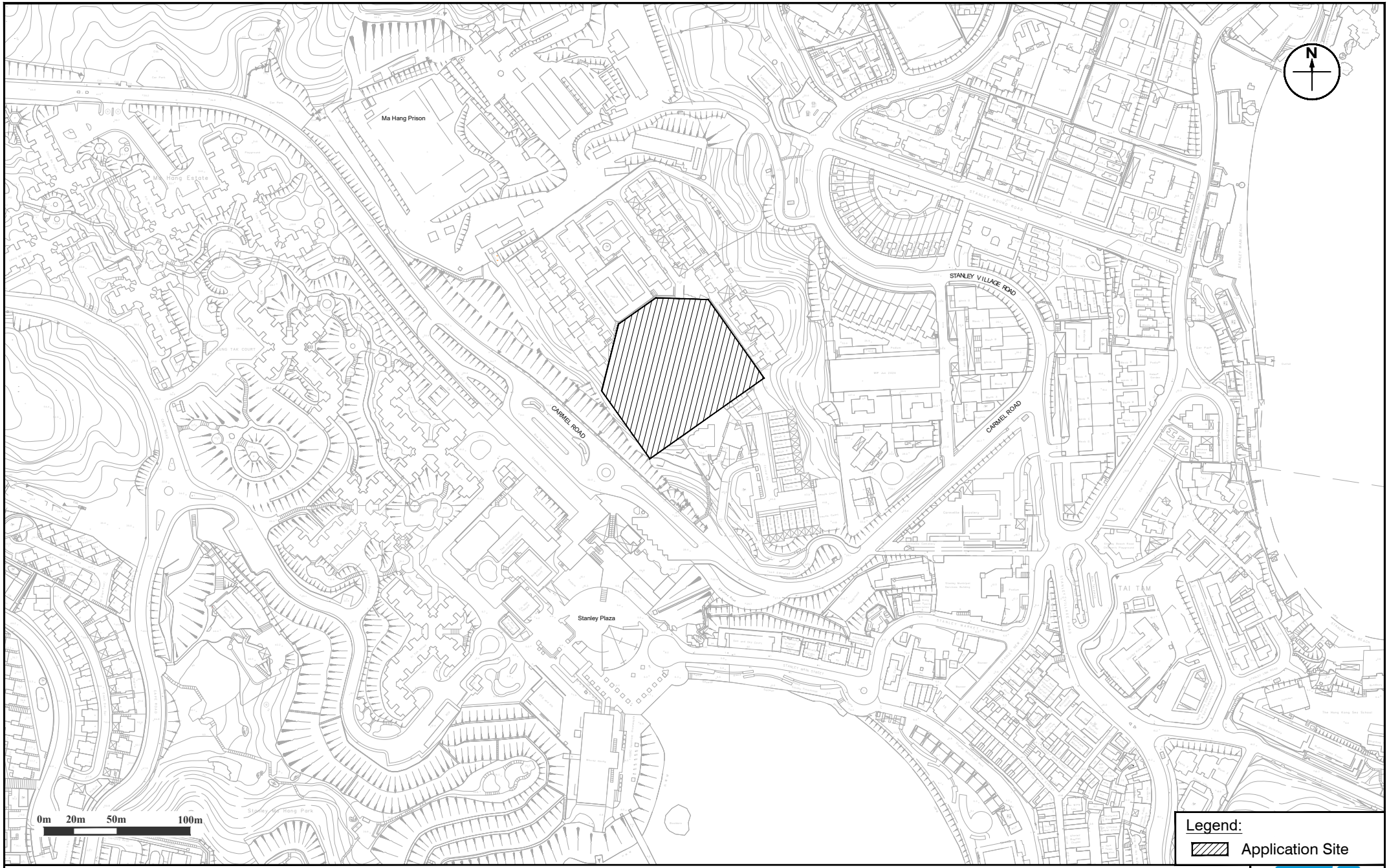

Figure: 1.1

Title: Location of the Application Site and its Environ

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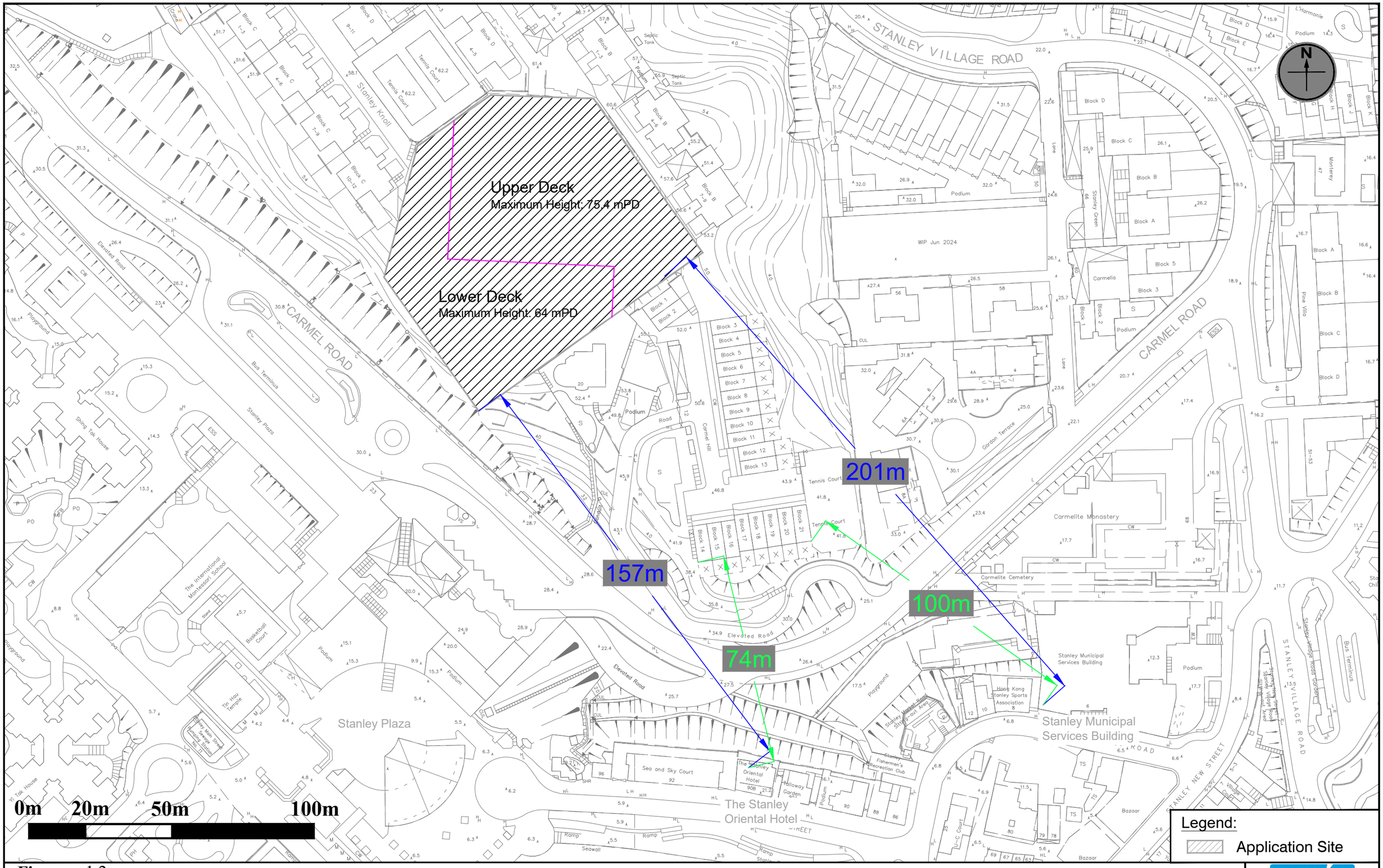

Figure: 1.2

Title: Locations of Identified Fixed Noise Sources

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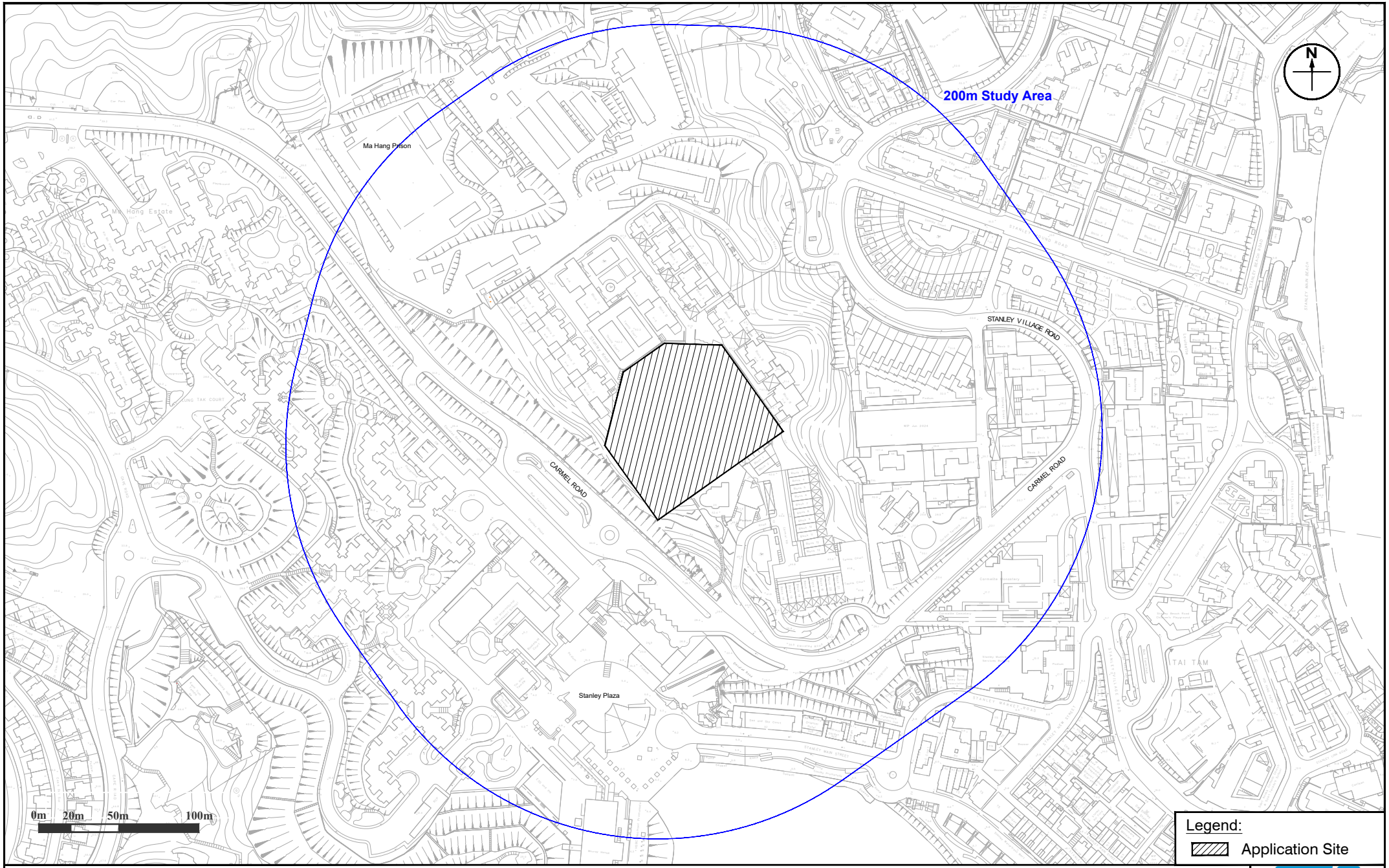

Figure: 2.1

Title: 200m Study Area from the Boundary of the Application Site

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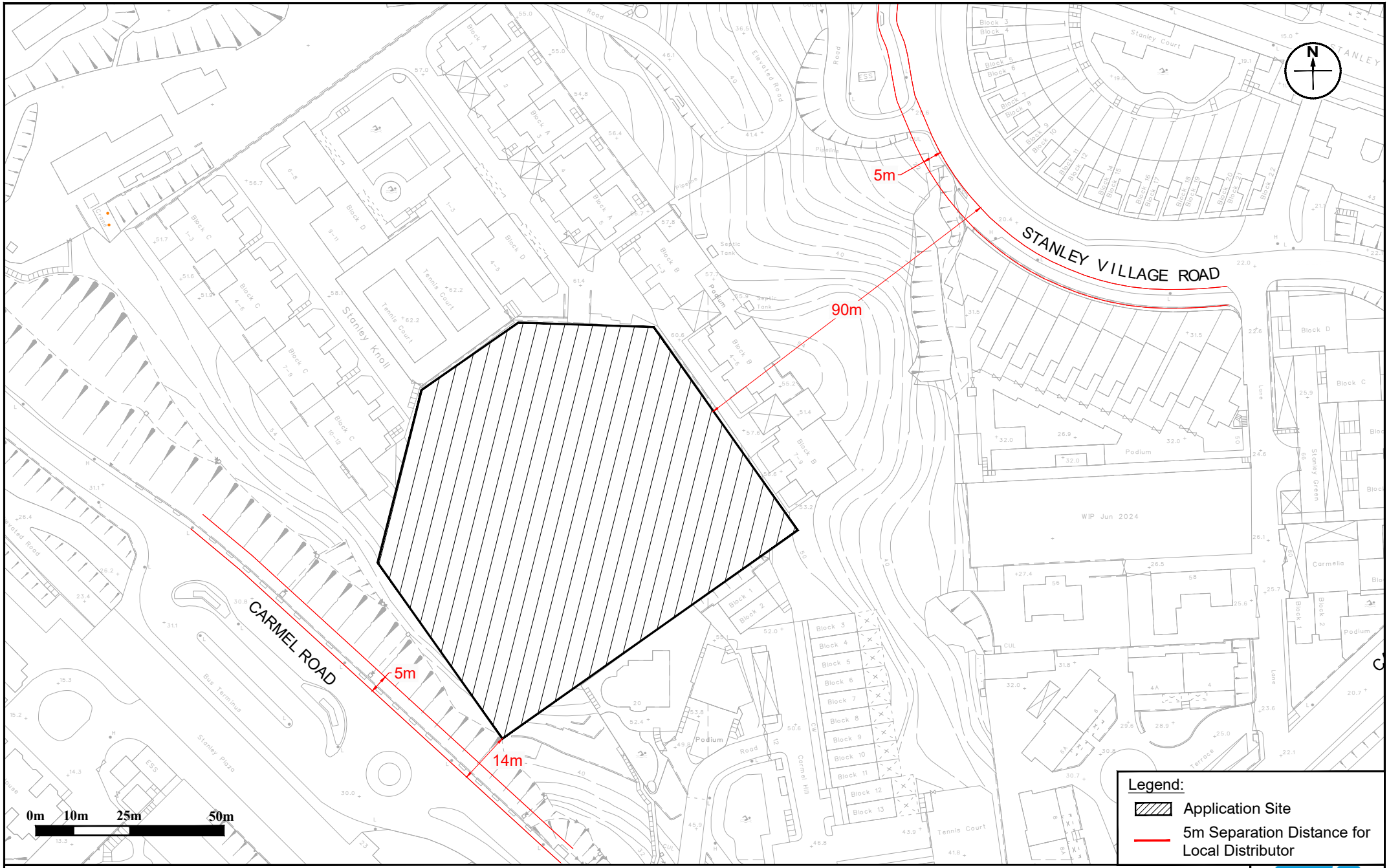

Figure: 2.2

Title: Buffer Distances from Kerb Side of Road Carriageways

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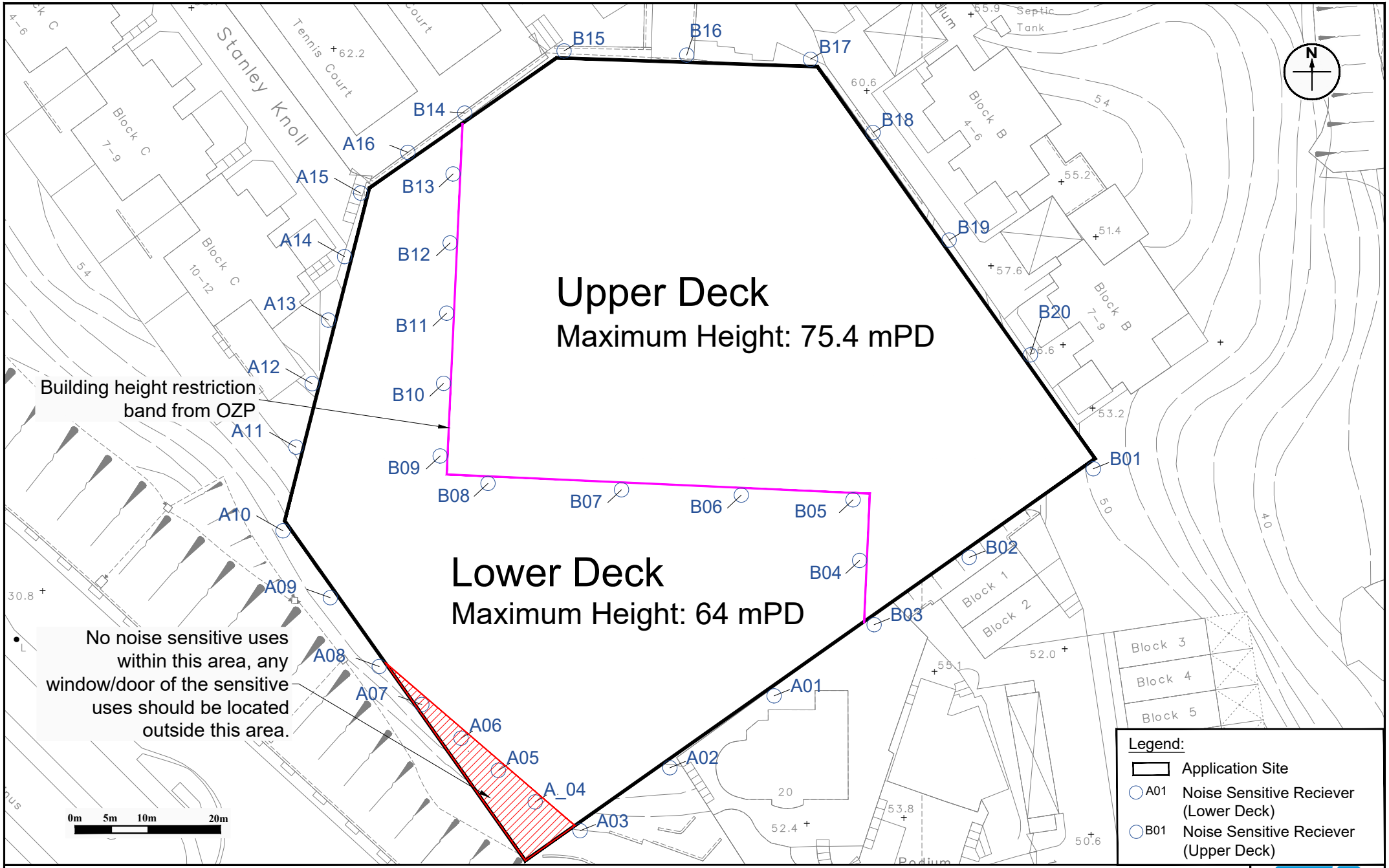

Figure: 3.1

Title: Locations of Representative Noise Sensitive Receivers for Road Traffic Noise Impact Assessment

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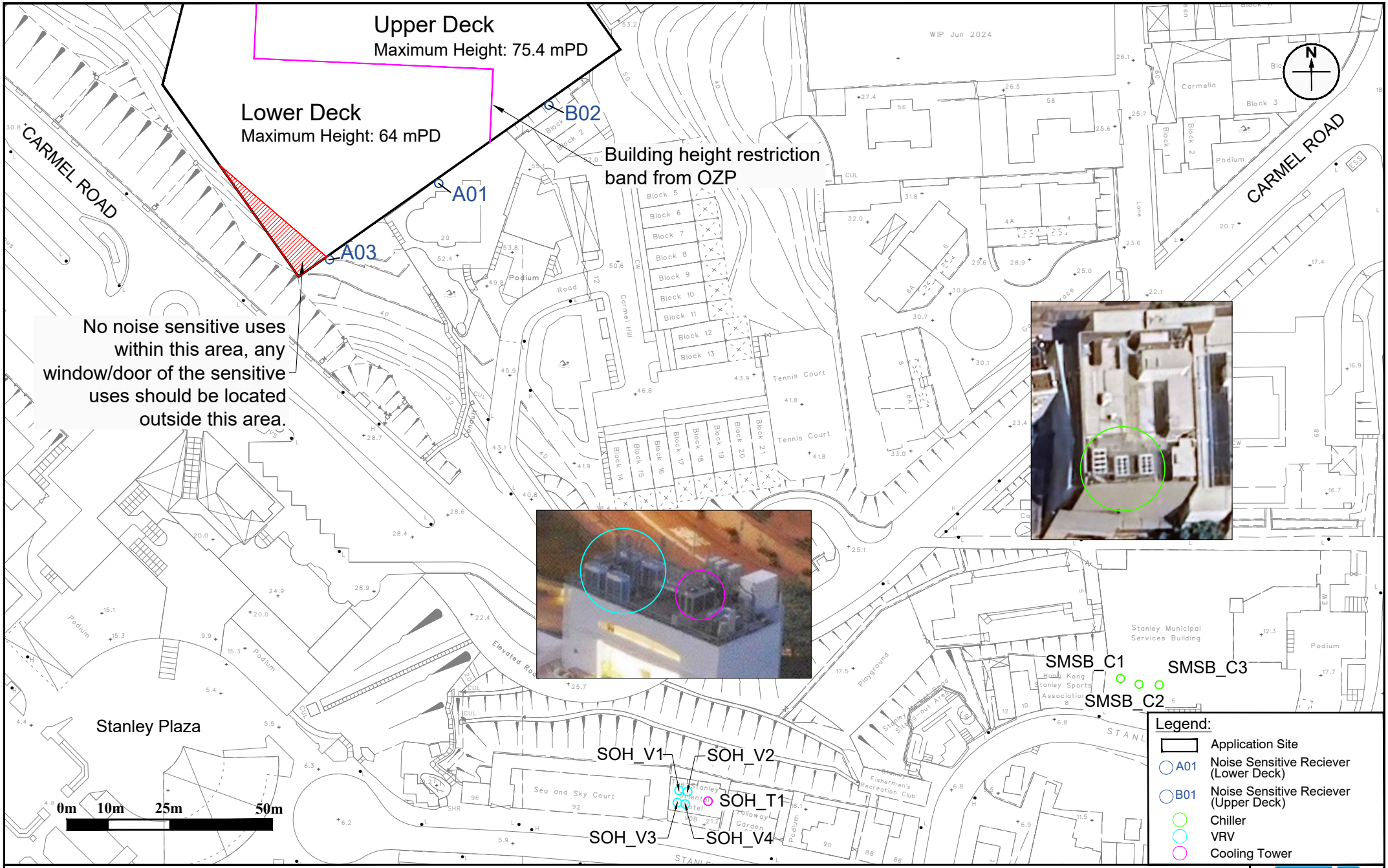

Figure: 4.1

Title: Location of Identified Fixed Noise Sources of the Surrounding Development and Representative Noise Sensitive Receivers for Fixed Noise Impact Assessment

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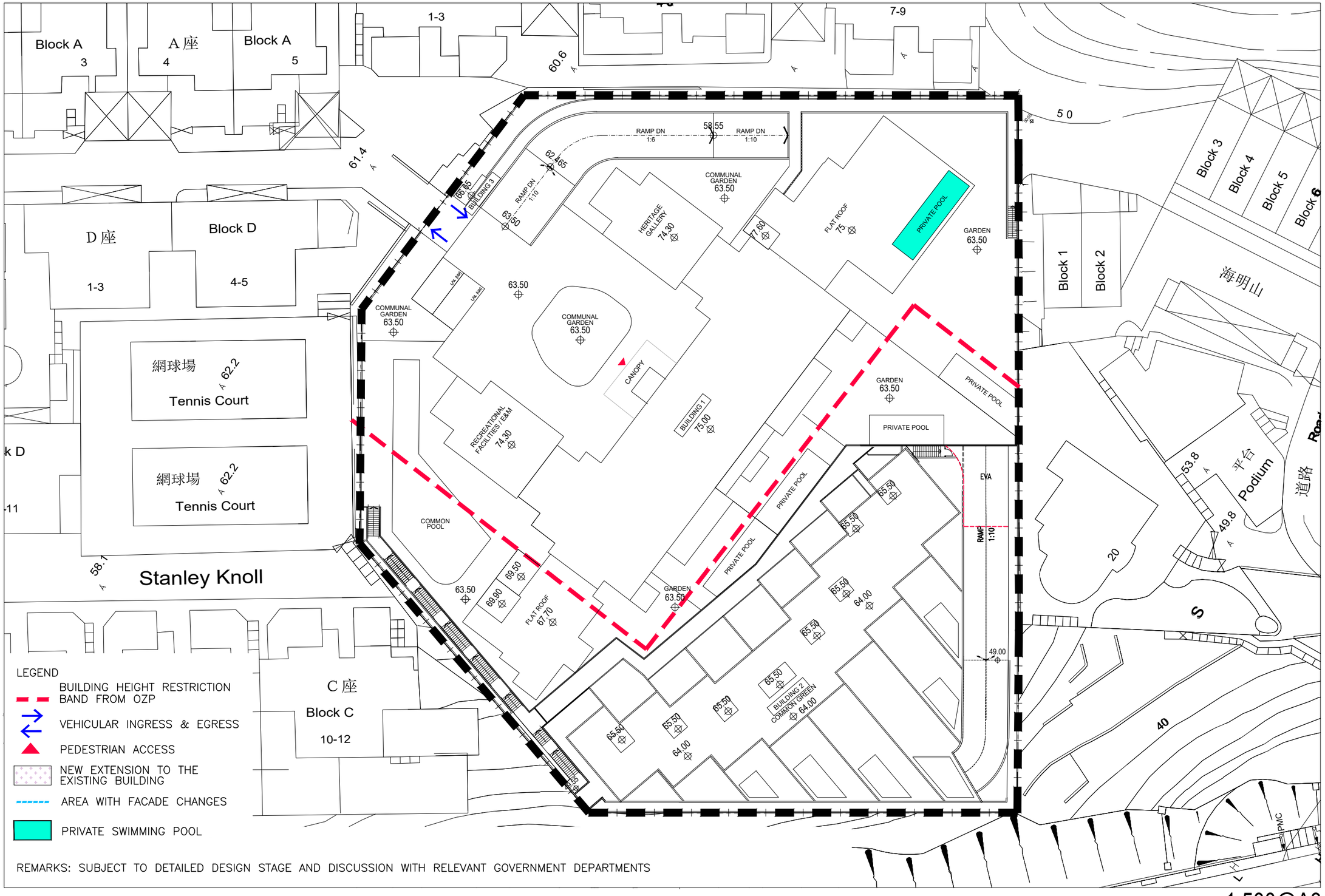
Appendix 1-1 Indicative Master Layout Plan of the Proposed Scheme

MARYKNOLL BUILDING, STANLEY
MASTER LAYOUT PLAN

15 AUG 2024



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MARYKNOLL BUILDING, STANLEY
SECTION A

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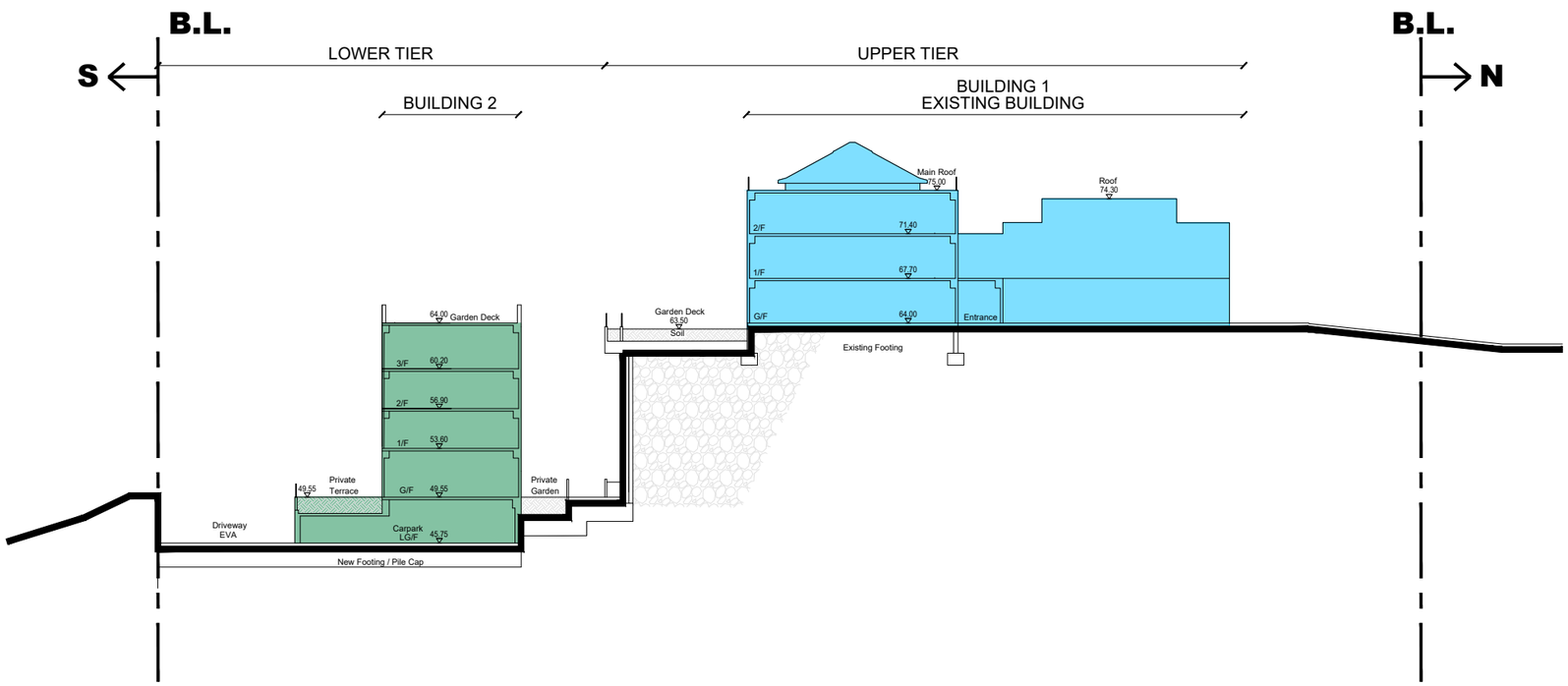

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MARYKNOLL BUILDING, STANLEY
SECTION B

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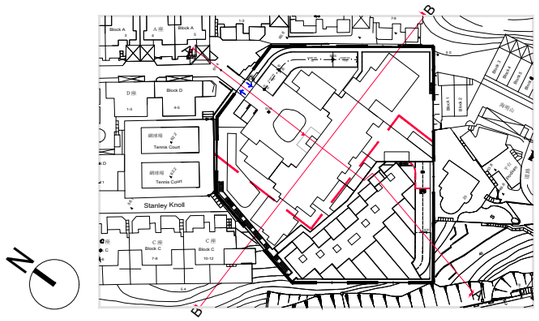
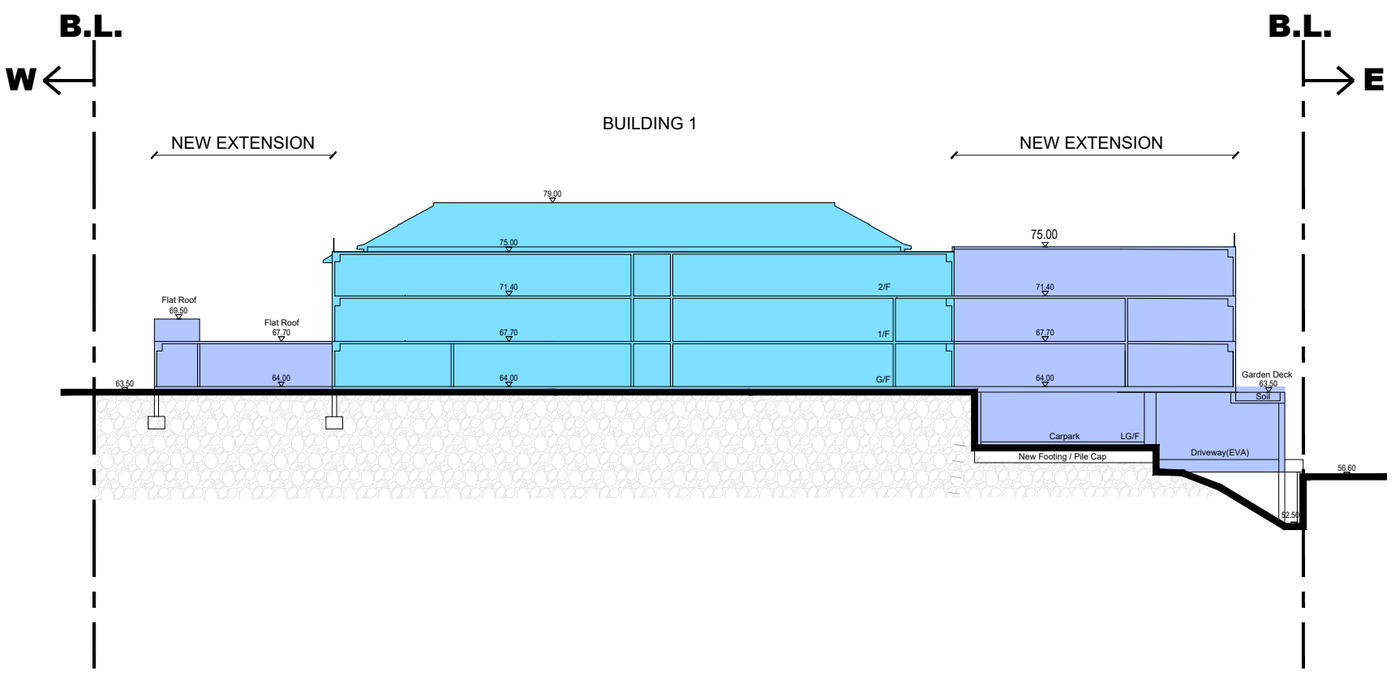
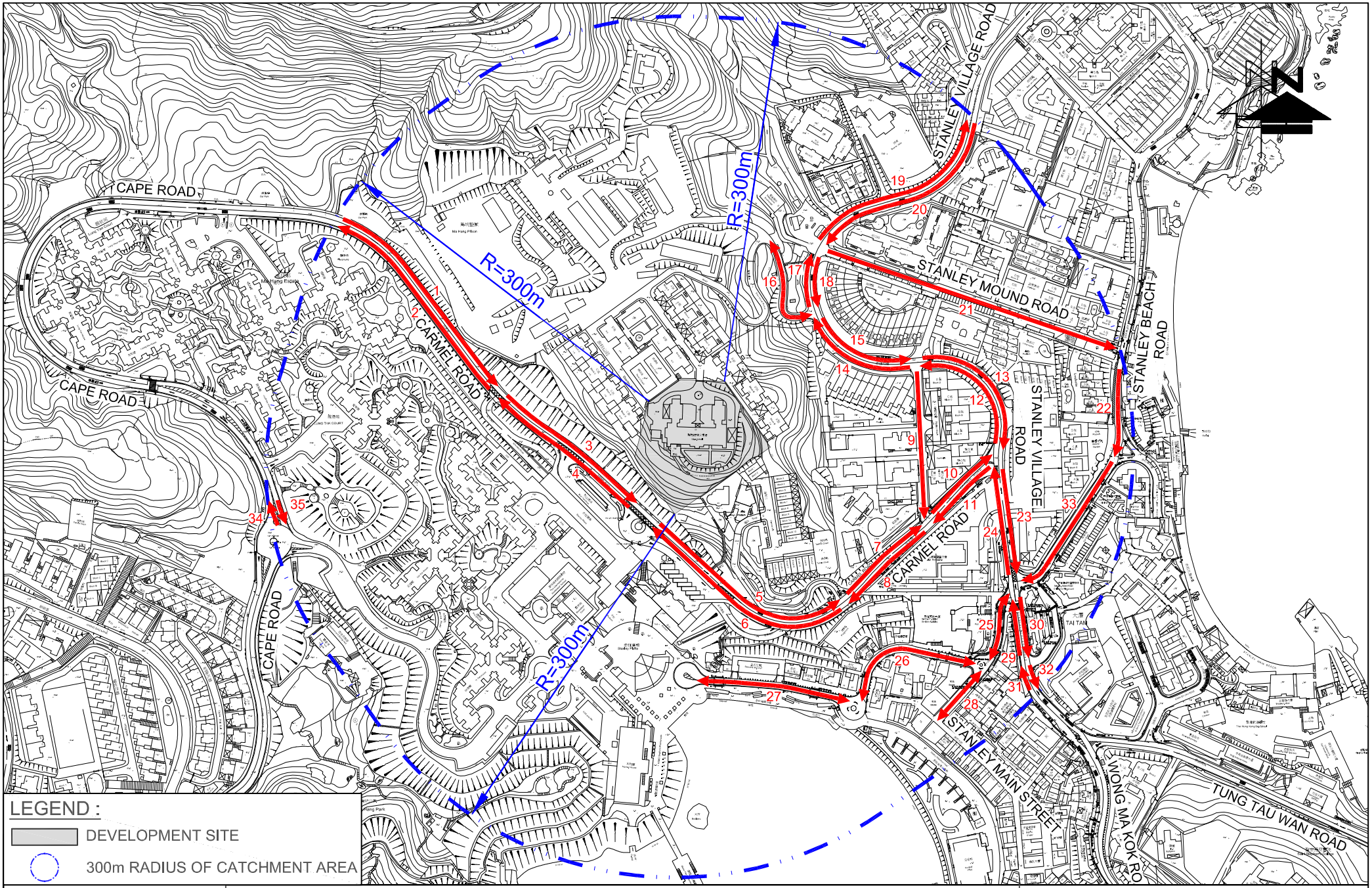




1:400@A3

Appendix 3-1 Year 2043 Traffic Forecast



LEGEND :

DEVELOPMENT SITE

300m RADIUS OF CATCHMENT AREA

FIGURE NO.: 1	PROJECT TITLE: Section 16 Planning Application for Minor Relaxation of Plot Ratio, Building Height & Site Coverage Restrictions for Proposed Residential Development at 44 Stanley Village Road, Hong Kong
PROJECT NO.: 24048HK	DRAWING TITLE: INDEX PLAN
SCALE: 1 : 4100 @A4 / DATE: 09 DEC 2024	

CTA Consultants Limited
志達顧問有限公司

2043 Traffic Forecasts for Traffic Noise Impact Assessment 24-Jan-25

Result

Road Link	Road Name	Direction	Road Speed	AM Peak		PM Peak	
				2043 Peak Hour Traffic Flows (in veh/hr)	% of HV(1)	2043 Peak Hour Traffic Flows (in veh/hr)	% of HV(1)
1	Carmel Road	EB	50	260	37%	300	39%
2	Carmel Road	WB	50	200	51%	240	39%
3	Carmel Road	EB	50	260	37%	300	39%
4	Carmel Road	WB	50	200	51%	240	39%
5	Carmel Road	EB	50	260	37%	300	39%
6	Carmel Road	WB	50	200	51%	240	39%
7	Carmel Road	EB	50	260	37%	300	39%
8	Carmel Road	WB	50	200	51%	240	39%
9	Access Road	SB	50	20	10%	20	10%
10	Carmel Road	EB	50	260	37%	300	39%
11	Carmel Road	WB	50	200	51%	240	39%
12	Stanley Village Road	WB	50	520	20%	510	14%
13	Stanley Village Road	EB	50	470	17%	270	17%
14	Stanley Village Road	WB	50	520	20%	510	14%
15	Stanley Village Road	EB	50	470	17%	270	17%
16	Access Road	2-way	50	30	14%	30	10%
17	Stanley Village Road	NB	50	540	20%	510	14%
18	Stanley Village Road	SB	50	480	17%	270	17%
19	Stanley Village Road	NB	50	500	19%	470	14%
20	Stanley Village Road	SB	50	490	17%	300	16%
21	Stanley Mound Road	EB	50	30	26%	50	14%
22	Stanley Beach Road	SB	50	320	34%	320	32%
23	Stanley Village Road	SB	50	580	23%	460	27%
24	Stanley Village Road	NB	50	720	24%	740	19%
25	Stanley New Street	2-way	50	240	10%	200	10%
26	Stanley Market Road	2-way	50	240	10%	200	10%
27	Stanley Market Road	2-way	50	240	10%	200	10%
28	Stanley New Street	2-way	50	10	10%	10	10%
29	Stanley Village Road	NB	50	410	20%	390	13%
30	Stanley Village Road	SB	50	590	23%	430	28%
31	Stanley Village Road	NB	50	410	20%	390	13%
32	Stanley Village Road	SB	50	590	23%	430	28%
33	Stanley Beach Road	SB	50	320	34%	320	32%
34	Cape Road	NB	50	250	37%	280	36%
35	Cape Road	SB	50	310	34%	310	47%

Notes:

(1) Including private light buses, public light buses, medium/heavy goods vehicles, non-franchised buses, single deck franchised bues and double deck franchised buses

Appendix 3-2 Results of Road Traffic Noise Impact Assessment (Base Case Scenario)

Predicted Road Traffic Noise Level (L10, dB(A)) at Representative Noise Sensitive Receivers (AM Peak)

Base Case

Lower Deck																	
Floor	mPD	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12	A13	A14	A15	A16
LGF	45.8	59	63	68	68	68	68	68	68	68	68	66	64	60	55	54	55
GF	49.6	59	66	69	69	69	69	69	69	69	69	67	65	61	56	55	55
1F	53.6	60	66	70	70	70	70	70	70	69	69	67	66	63	58	56	56
2F	56.9	60	67	70	70	70	70	70	70	70	69	68	66	63	58	56	56
3F	60.2	61	67	70	70	70	70	70	70	70	69	68	66	64	60	57	57
Exceedance		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Upper Deck																					
Floor	mPD	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
GF	64.0	58	57	61	60	60	61	63	65	66	64	62	60	59	57	58	53	58	61	55	56
1F	67.7	60	59	62	61	61	61	64	66	66	65	63	61	60	58	59	54	59	61	56	60
2F	71.4	61	60	63	62	61	62	64	66	66	65	63	62	60	59	59	56	61	62	59	62
Exceedance		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Sensitive Receivers (PM Peak)

Base Case

Lower Deck																	
Floor	mPD	A01	A02	A03	A04	A05	A06	A07	A08	A09	A10	A11	A12	A13	A14	A15	A16
LGF	45.8	59	64	68	68	68	68	68	68	68	68	66	64	61	55	54	54
GF	49.6	60	66	69	70	70	69	69	69	69	69	67	65	62	56	54	54
1F	53.6	60	67	70	70	70	70	70	70	70	69	68	66	63	57	55	55
2F	56.9	61	67	70	70	70	70	70	70	70	70	68	67	64	58	56	56
3F	60.2	61	67	70	70	70	70	70	70	70	70	68	67	64	60	57	56
Exceedance		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Upper Deck																					
Floor	mPD	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
GF	64.0	58	58	61	60	60	61	64	66	66	65	63	60	58	57	57	53	57	60	54	56
1F	67.7	60	59	62	61	61	62	64	66	66	65	63	61	59	58	58	54	58	60	56	59
2F	71.4	61	60	63	62	61	62	64	66	67	65	64	62	60	58	58	56	59	60	58	61
Exceedance		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 4-1 Catalogue of the Fixed Noise Sources of the Surrounding Development

Air cooled multi-scroll chiller

High efficiency

Reduced sound

EWAQ-F-XS/XL/XR MicroTech III

Cooling only				EWAQ-F-XR	170	190	210	240	300	310	330	340	390	410	430	500	580	650
Cooling capacity	Nom.			kW	165	188	211	236	304		340		385	407	433	502	579	645
Power input	Cooling	Nom.		kW	53.0	61.2	68.7	77.3	101		117		128	136	146	170	200	219
Capacity control	Method				Step													
	Minimum capacity			%	25.0	21.0	25.0	22.0	23.0		25.0		21.0	20.0	25.0	17.0	14.0	17.0
EER					3.12	3.07	3.08	3.05	3.00		2.92		3.01	2.99	2.96		2.90	2.95
ESEER					4.53	4.64	4.51	4.60	4.53	4.68	4.44	4.63	4.68	4.64	4.54	4.82	4.69	4.65
Dimensions	Unit	Height		mm	2,271					2,221	2,271		2,221					
		Width		mm	1,224					2,258	1,224		2,258					
		Depth		mm	4,413		5,313		6,213	3,210	6,213	3,210	4,110			5,010		5,910
Weight	Unit			kg	2,004	2,303	2,580	2,722	2,900	3,000	3,045	3,145	3,168	3,280	3,298	4,120	4,228	4,655
	Operation weight			kg	2,017	2,317	2,594	2,736	2,914	3,014	3,085	3,185	3,208	3,326	3,344	4,166	4,288	4,716
Water heat exchanger	Type				Plate heat exchanger													
	Water volume			l	12			14			40			46			60	
	Water flow rate	Cooling	Nom.	l/s	7.9	9.0	10.1	11.3	14.5		16.3		18.4	19.5	20.7	24.0	27.7	30.9
	Water pressure drop	Cooling	Nom.	kPa	24	25	31	39	21				28	26	27	38	40	51
Air heat exchanger	Type				High efficiency fin and tube type with integral subcooler													
Compressor	Type				Scroll compressor													
	Quantity				4											6		
Fan	Type				Direct propeller													
	Quantity				4		5		6				8			10		12
	Air flow rate	Nom.		l/s	16,743	16,285	20,618	19,522	24,428		23,426		32,570	31,235		39,044		46,852
	Speed			rpm	705													
Sound power level	Cooling	Nom.		dBA	83	84	85	86	87				89		90	89	90	92
Sound pressure level	Cooling	Nom.		dBA	64	65	66	67		68	67	68	69	70		69	70	71
Operation range	Water side	Cooling	Min.~Max.	°CDB	-13~18													
	Air side	Cooling	Min.~Max.	°CDB	-18~52													
Refrigerant	Type / GWP				R-410A / 2,087.5													
	Circuits	Quantity			2													
Refrigerant charge	Per circuit			kg/TCO_2Eq	14.0 / 29.2	15.5 / 32.4	16.5 / 34.4	20.0 / 41.8	24.0 / 50.1		26.0 / 54.3		31.0 / 64.7			35.0 / 73.1	36.0 / 75.2	41.5 / 86.6
Piping connections	Evaporator water inlet/outlet (OD)				3"													
Unit	Maximum starting current			A	276	332	346	401	472		501		618	632	646	628	754	801
	Nominal running current (RLA)	Cooling		A	107	116	125	139	180		204		226	239	255	300	347	380
	Maximum running current			A	132	143	157	173	220		249		283	296	310	377	419	465
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/400													

Air cooled screw chiller

Standard efficiency

Extra low sound

EWAD-D-SR/SX MicroTech III

Cooling only				EWAD-D-SX	210	230	250	270	290	300	310	370	410	450	490
Cooling capacity	Nom.			kW	202	230	252	270	285	298	308	369	412	449	490
Power input	Cooling	Nom.		kW	80.8	86.0	94.4	105	115	127	137	150	171	175	189
Capacity control	Method				Stepless										
	Minimum capacity			%	12.5										
EER					2.50	2.68	2.67	2.56	2.47	2.35	2.25	2.46	2.41	2.56	2.60
ESEER					3.29	3.52	3.41	3.44	3.34	3.29	3.15	3.14	3.39	3.50	3.47
Dimensions	Unit	Height		mm	2,420										
		Width		mm	2,234										
		Depth		mm	3,139	4,040									4,940
Weight	Unit			kg	3,110	3,475		3,425	3,430			3,560	4,302	4,506	4,581
	Operation weight			kg	3,200	3,590						3,735	4,472	4,676	4,746
Water heat exchanger	Type				Single pass shell & tube										
	Water volume			l	90	115		165	160			175	170		165
	Water flow rate	Cooling	Nom.	l/s	9.7	11.0	12.1	12.9	13.7	14.3	14.7	17.7	19.7	21.5	23.5
	Water pressure drop	Cooling	Nom.	kPa	45	34	38		35	38	41	45	44	50	45
Air heat exchanger	Type				High efficiency fin and tube type with integral subcooler										
Compressor	Type				Single screw compressor								Asymmetric single screw compressor		
	Quantity				2										
Fan	Type				Direct propeller										
	Quantity				6	8								9	10
	Air flow rate	Nom.		l/s	12,876	17,892	17,169					26,496		28,982	33,120
	Speed			rpm	500										
Sound power level	Cooling	Nom.		dBA	84	85									86
Sound pressure level	Cooling	Nom.		dBA	65										66
Operation range	Water side	Cooling	Min.~Max.	°CDB	-15~15										
	Air side	Cooling	Min.~Max.	°CDB	-18~48										
Refrigerant	Type / GWP				R-134a / 1,430										
	Circuits	Quantity			2										
Refrigerant charge	Per circuit			kg/TCO$_2$Eq	21.0 / 30.0	24.0 / 34.3	26.0 / 37.2	32.0 / 45.8	33.0 / 47.2	34.0 / 48.6			35.0 / 50.1	38.0 / 54.3	40.0 / 57.2
Piping connections	Evaporator water inlet/outlet (OD)				4"							5"			
Unit	Maximum starting current			A	218	232		276	284	296		406	457	475	
	Nominal running current (RLA)	Cooling		A	135	143	157	173	188	204	220	231	272	280	298
	Maximum running current			A	164	183	199	210	221	235	250	291	316	338	360
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/400										

SPECIFICATION

ITEM	MODER			ONE CELL							TWO CELLS					THREE CELLS			FOUR CELLS		
				FC-100	FC-125	FC-150	FC-175	FC-200	FC-225	FC-250	FC-300	FC-350	FC-400	FC-450	FC-500	FC-600	FC-675	FC-750	FC-800	FC-900	FC-1000
CAPACITY	27°C WB	circulating water flow rate	m^3/hr	78.0	97.5	117.0	136.5	156.0	175.5	195.0	234.0	273.0	312.0	351.0	390.0	468.0	526.5	585.0	624.0	702.0	780.0
		make-up water(approx.)	m^3/hr	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.3	3.9	4.5	5.0	5.6	6.7	7.5	8.4	8.9	10.0	11.2
	28°C WB	circulating water flow rate	m^3/hr	70	88	105	123	140	158	175	210	245	280	315	350	420	473	525	560	630	700
		make-up water(approx.)	m^3/hr	1.0	1.3	1.5	1.8	2.0	2.3	2.5	3.0	3.5	4.0	4.5	5.0	6.0	6.8	7.5	8.0	9.0	10.0
	Air flow rate(Approx.)		m^3/min	630	800	960	1135	1285	1460	1660	1920	2270	2570	2920	3320	3855	4380	4950	5140	5840	6640
	Hot water temperature		°C	37																	
	Cold water temperature		°C	32																	
OVERALL DIMENSION	Width		mm	1650	2000	2300	2600	4000			4600	5200				6900	7800		9200	10400	
	Length		mm	3650	4000	4300	4400	4000			4300	4400				4300	4400		4300	4400	
	Height		mm	3400																	
MATERIAL	Casing			FRP																	
	Steel structure			Steel (hot-dip galvanized)																	
	Filler			PVC																	
	Distribution tray			FRP																	
	Cold water basin			FRP																	
	Sump tank			FRP																	
	Fan			Blade : FRP , Hub : Aluminum Cast alloy																	
	Fan stack			FRP																	
FAN ASSEMBLY	Fan	TYPE		Axial-flow																	
		Diameter X Nos.	∅ mm	1400 x 1	1600 x 1		1800 x1	2000 x 1			1600 x 2		1800 x1	2000 x 2		1800 x3	2000 x 3		1800 x4	2000 x 4	
		Number of blades		4																	
		Fan speed(Approx.)	rpm	470	540	375	420	420	335	370	375	420	420	335	370	420	335	370	420	335	370
		Drive system		V-belt drive																	
	Motor	TYPE		Totally enclosed fan cooled outdoor 3 phase induction motor 4 poles																	
		Power source		380V / 3 / 50Hz																	
		Rated output	Kw	2.2 x 1	3.7 x 1		5.5 x 1			7.5 x 1	3.7 x 2		5.5 x 2		7.5 x 2	5.5 x 3		7.5 x 3	5.5 x 4	7.5 x 4
		Quantity		1							2					3			4		
DISTRIBUTION SYSTEM				Open gravity + redistribution layer																	
PIPING DIMENSION	Hot water inlet pipe		mm	∅100 x 2			∅125 x 2			∅150 x 4			∅125 x 4			∅125 x 6			∅125 x 8		
	Cold water outlet pipe		mm	∅125 x 1		∅150 x 1			∅200 x				∅250 x 1			∅200 x 2			∅250 x 2		
	Drain pipe		mm	∅50 x 1		∅ 50 x 1					∅ 50 x 1					∅50 x 2					
	Overflow pipe		mm	∅50 x 1		∅ 50 x 1					∅80 x 1					∅80 x 2					
	Float valve		mm		∅25 x 1				∅40 x 1				∅ 40 x 1			∅40 x 2			∅ 40 x 2		
	Manual make-up		mm		∅25 x 1				∅40 x 1				∅ 40 x 1			∅40 x 2			∅ 40 x 2		
MAKE-UP	Evaporation loss(Approx.)		%	Approx 0.83																	
	Drift loss		%	Less than 0.005																	
WEIGHT	Net weight		kg	970	985	1160	1205	1345	1390	1450	2270	2360	2640	2730	2850	3985	4120	4300	5280	5460	5700
	Operating weight		kg	2475	2490	2975	3020	3450	3750	3810	5455	5545	6400	7000	7120	9850	10755	10935	12800	14005	14245
NOISE LEVEL	Measuring point D=1.13$\sqrt{L \times W}$		dBA	64	65	65	66	66	66	67	67	68	68	69	70	70	71	71	72	73	73

ITEM	MODER			ONE CELL					TWO CELLS						THREE CELLS					FOUR CELLS		FIVE CELLS	
				FC/LN-100	FC/LN-125	FC/LN-150	FC/LN-175	FC/LN-200	FC/LN-250	FC/LN-300	FC/LN-350	FC/LN-400				FC/LN-450	FC/LN-500	FC/LN-600			FC/LN-700	FC/LN-800	FC/LN-900	FC/LN-1000
CAPACITY	27°C WB	circulating water flow rate	m^3/hr	78.0	97.5	117.0	136.5	156.0	195.0	234.0	273.0	312.0				351.0	390.0	468.0			546.0	624.0	702.0	780.0
		make-up water(approx.)	m^3/hr	1.1	1.4	1.7	2.0	2.2	2.8	3.3	3.9	4.5				5.0	5.6	6.7			7.8	8.9	10.0	11.2
	28°C WB	circulating water flow rate	m^3/hr	70	88	105	123	140	175	210	245	280				315	350	420			490	560	630	700
		make-up water(approx.)	m^3/hr	1.0	1.3	1.5	1.8	2.0	2.5	3.0	3.5	4.0				4.5	5.0	6.0			7.0	8.0	9.0	10.0
	Air flow rate(Approx.)		m^3/min	530	680	830	980	1100	1360	1660	1960	2200				2490	2940	3300			3920	4400	4900	5500
	Hot water temperature		°C	37																				
	Cold water temperature		°C	32																				
OVERALL DIMENSION	Width		mm	2000		2300		2600	4000		4600	5200				6900		7800			9200	10400	11500	13000
	Length		mm	4000		4300		4400	4000		4300	4400				4300		4400			4300	4400	4300	4400
	Height		mm	3700																				
MATERIAL	Casing			FRP																				
	Steel structure			Steel (hot-dip galvanized)																				
	Filler			PVC																				
	Distribution tray			FRP																				
	Cold water basin			FRP																				
	Sump tank			FRP																				
	Fan			Blade : FRP , Hub : Aluminum Cast alloy																				
	Fan stack			FRP																				
FAN ASSEMBLY	Fan	TYPE		Axial-flow																				
		Diameter X Nos.	∅ mm	1600 x 1		1800 x 1		2000 x 1	1600 x 2		1800 x 2	2000 x 2				1800 x 3		2000 x 3			1800 x 4	2000 x 4	1800 x 5	2000 x 5
		Number of blades		4																				
		Fan speed(Approx.)	rpm	270	340	300	360	310	340	300	360	310				360	310	360			360	310	360	310
		Drive system		V-belt drive																				
	Motor	TYPE		Totally enclosed fan cooled outdoor 3 phase induction motor 4 poles																				
		Power source		380V / 3 / 50Hz																				
		Rated output	Kw	1.5 x 1	2.2 x 1		3.7 x 1		2.2 x 2		3.7 x 2					2.2 x 3		3.7 x 3			3.7 x 4		3.7 x 5	
		Quantity		1					2							3					4		5	
DISTRIBUTION SYSTEM				Open gravity + redistribution layer																				
PIPING DIMENSION	Hot water inlet pipe		mm	∅100 x 2			∅125 x 2		∅100 x 4			∅125 x 4				∅100 x 6		∅125 x 6			∅100 x 8	∅125 x 8		∅125 x 10
	Cold water outlet pipe		mm	∅125 x 1		∅150 x 1			∅200 x 1			∅250 x 1				∅200 x 2					∅250 x 2		∅200 x 3	
	Drain pipe		mm	∅50 x 1		∅ 50 x 1			∅50 x 1			∅50 x 2				∅50 x 2								
	Overflow pipe		mm	∅50 x 1		∅ 50 x 1			∅80 x 1			∅80 x 2				∅80 x 2								
	Float valve		mm	∅25 x 1					∅40 x 1							∅40 x 2						∅ 40 x 2		
	Manual make-up		mm	∅25 x 1					∅40 x 1							∅40 x 2						∅ 40 x 2		
MAKE-UP	Evaporation loss(Approx.)		%	Approx 0.83																				
	Drift loss		%	Less than 0.005																				
WEIGHT	Net weight		kg	1080	1120	1240	1260	1530	2230	2450	2470	2880				3700	3800	4550			5000	6050	6100	7550
	Operating weight		kg	2250	2340	2640	2730	3170	4340	4920	5090	5910				7560	7820	9080			10180	11820	12910	14990
NOISE LEVEL	Measuring point D=1.13$\sqrt{L \times W}$		dBA	60	61	62	63	64	65	65	66	66				67	68	68			69	70	71	71

Note: Nominal cooling capacity is based on 131 / min/ RT(1RT=3,900 Kcal /hr) at 37 °C hot water in, 32°C cold water out 27°C ambient wet bulb. The SPLs are measured 1.13$\sqrt{W \times L}$ horizontally away from air intake side of the tower at 1.5m above the foundation level. Pump head of the cooling tower is approximate equal to the height of tower(H). Dimension shown in this catalogue is metric sized and specifications are subject to change without further notice for technical improvement of our products.

GUARANTEE:

All components are guaranteed against defective material for a period of one(1) year. When return to RYOWO with transportation prepaid, all parts found by factory inspection to be defective will be repaired or replaced without charge, FOB Hong Kong or FOB ShenZhen, PRC. No liability will be assumed for loss or damage resulting form misuse of our products.

室外机阵容

室外机																						
型号			RUXYQ8BB	RUXYQ10BB	RUXYQ12BB	RUXYQ14BB	RUXYQ16BB	RUXYQ18BB	RUXYQ20BB	RUXYQ22BB	RUXYQ24BB	RUXYQ26BB	RUXYQ28BB	RUXYQ30BB	RUXYQ32BB	RUXYQ34BB	RUXYQ36BB	RUXYQ38BB	RUXYQ40BB	RUXYQ42BB	RUXYQ44BB	RUXYQ46BB	RUXYQ48BB
匹数		HP	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
组合方式			——	——	——	——	——	——	——	——	RUXYQ10BB RUXYQ14BB	RUXYQ12BB RUXYQ14BB	RUXYQ8BB RUXYQ20BB	RUXYQ8BB RUXYQ22BB	RUXYQ10BB RUXYQ22BB	RUXYQ12BB RUXYQ22BB	RUXYQ14BB RUXYQ22BB	RUXYQ18BB RUXYQ20BB	RUXYQ18BB RUXYQ22BB	RUXYQ20BB RUXYQ22BB	RUXYQ22BB RUXYQ22BB	RUXYQ10BB RUXYQ14BB RUXYQ22BB	RUXYQ12BB RUXYQ14BB RUXYQ22BB
电源			三相 380V 50Hz														三相 380V 50Hz					三相 380V 50Hz	
额定制冷容量*1		kW	22.4	28.0	33.5	40.0	45.0	50.4	56.5	61.5	68.0	73.5	78.9	83.9	89.5	95.0	101.5	106.9	111.9	118.0	123.0	129.5	135.0
额定制热容量*2		kW	25.0	31.5	37.5	45.0	50.0	56.5	63.0	69.0	76.5	82.5	88.0	94.0	100.5	106.5	114.0	119.5	125.5	132.0	138.0	145.5	151.5
额定耗电量	制冷	kW	4.70	6.71	8.10	9.88	11.80	12.80	14.70	17.30	16.6	18.0	19.4	22.0	24.0	25.4	27.2	27.5	30.1	32.0	34.6	33.9	35.3
	制热	kW	5.24	6.72	8.48	10.50	12.10	13.30	15.30	17.00	17.2	19.0	20.5	22.2	23.7	25.5	27.5	28.6	30.3	32.3	34.0	34.2	36.0
风扇风量		m³/min	162	175	185	223	280	271	271	271	175+223	185+223	162+271	162+271	175+271	185+271	223+271	271+271	271+271	271+271	271+271	175+223+271	185+223+271
机器尺寸(H×W×D)		mm	1657×930×765			1657×1240×765					1657×930×765+1657×1240×765						1657×1240×765+1657×1240×765					1657×930×765 + 1657×1240×765 + 1657×1240×765	
运转音*3	正面运转音	dB(A)	53	54	56		57	58	59	60	58	59	60	61			62			63		62	63
	四面运转音	dB(A)	56	57	59		60	61	62	63	61	62	63	64			65			66		65	66
夜间静音运转		dB(A)	40														43					45	
室内/外机配管连接口管径*4	液管	mm	Φ9.5	Φ9.5	Φ12.7☆	Φ12.7	Φ12.7	Φ15.9☆	Φ15.9☆	Φ15.9☆	Φ15.9	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1
	气管	mm	Φ19.1	Φ22.2☆	Φ25.4	Φ25.4	Φ28.6☆	Φ28.6	Φ28.6	Φ28.6	Φ28.6	Φ31.8	Φ31.8	Φ31.8	Φ31.8	Φ31.8	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1	Φ38.1
室外机配管连接口管径*4	液管	mm	Φ9.5	Φ9.5	Φ9.5☆	Φ12.7	Φ12.7	Φ12.7☆	Φ12.7☆	Φ12.7☆							——					——	
	气管	mm	Φ19.1	Φ25.4☆	Φ25.4	Φ25.4	Φ25.4☆	Φ28.6	Φ28.6	Φ28.6							——					——	
重量		kg	189	196	196	250	280	300	300	300	446	446	489	489	496	496	550	600	600	600	600	746	746
冷媒	名称		R410A														R410A					R410A	
	自带填充量	kg	8.4	8.6	8.7	11.1	11.1	15.6	15.6	15.6	8.6+11.1	8.7+11.1	8.4+15.6	8.4+15.6	8.6+15.6	8.7+15.6	11.1+15.6	15.6+15.6				8.6+11.1+15.6	8.7+11.1+15.6
运转范围	制冷	℃DB	-15～54℃DB														-15~54℃DB					-15~54℃DB	
	制热	℃DB	-25～27℃DB														-25~27℃DB					-25~27℃DB	
最小线路电流*6	MCA	A	16.1	18.0	20.1	24.4	26	34.8	39.6	43.6	40.2	44	46.1	59.7	61.6	63.7	68	69.6	78.4	83.2	87.2	85.7	87.6
最大熔丝电流*6	MFA	A	20	20	25	32	32	40	50	50	50	50	63	80	80	80	80	80	100	100	100	100	100

室外机																						
型号			RUXYQ50BB	RUXYQ52BB	RUXYQ54BB	RUXYQ56BB	RUXYQ58BB	RUXYQ60BB	RUXYQ62BB	RUXYQ64BB	RUXYQ66BB	RUXYQ68BB	RUXYQ70BB	RUXYQ72BB	RUXYQ74BB	RUXYQ76BB	RUXYQ78BB	RUXYQ80BB	RUXYQ82BB	RUXYQ84BB	RUXYQ86BB	RUXYQ88BB
匹数		HP	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88
组合方式			RUXYQ8BB RUXYQ20BB RUXYQ22BB	RUXYQ10BB RUXYQ20BB RUXYQ22BB	RUXYQ10BB RUXYQ22BB RUXYQ22BB	RUXYQ12BB RUXYQ22BB RUXYQ22BB	RUXYQ14BB RUXYQ22BB RUXYQ22BB	RUXYQ20BB RUXYQ20BB RUXYQ20BB	RUXYQ18BB RUXYQ22BB RUXYQ22BB	RUXYQ20BB RUXYQ22BB RUXYQ22BB	RUXYQ22BB RUXYQ22BB RUXYQ22BB	RUXYQ12BB RUXYQ12BB RUXYQ22BB RUXYQ22BB	RUXYQ12BB RUXYQ14BB RUXYQ22BB RUXYQ22BB	RUXYQ12BB RUXYQ16BB RUXYQ22BB RUXYQ22BB	RUXYQ12BB RUXYQ18BB RUXYQ22BB RUXYQ22BB	RUXYQ10BB RUXYQ22BB RUXYQ22BB RUXYQ22BB	RUXYQ12BB RUXYQ22BB RUXYQ22BB RUXYQ22BB	RUXYQ14BB RUXYQ22BB RUXYQ22BB RUXYQ22BB	RUXYQ14BB RUXYQ22BB RUXYQ22BB RUXYQ22BB	RUXYQ16BB RUXYQ22BB RUXYQ22BB RUXYQ22BB	RUXYQ18BB RUXYQ22BB RUXYQ22BB RUXYQ22BB	RUXYQ20BB RUXYQ22BB RUXYQ22BB RUXYQ22BB	RUXYQ22BB RUXYQ22BB RUXYQ22BB RUXYQ22BB
电源			三相 380V 50Hz														三相 380V 50Hz						
额定制冷容量*1		kW	140.4	146.0	151.0	156.5	163.0	169.5	173.4	179.5	184.5	190.0	196.5	201.5	206.9	212.5	218.0	224.5	229.5	234.9	241.0	246.0
额定制热容量*2		kW	157.0	163.5	169.5	175.5	183.0	189.0	194.5	201.0	207.0	213.0	220.5	225.5	232.0	238.5	244.5	252.0	257.0	263.5	270.0	276.0
额定耗电量	制冷	kW	36.7	38.7	41.3	42.7	44.5	44.1	47.4	49.3	51.9	50.8	52.6	54.5	55.5	58.6	60.0	61.8	63.7	64.7	66.6	69.2
	制热	kW	37.5	39.0	40.7	42.5	44.5	45.9	47.3	49.3	51.0	51.0	53.0	54.6	55.8	57.7	59.5	61.5	63.1	64.3	66.3	68.0
风扇风量		m³/min	162+271+271	175+271+271	175+271+271	185+271+271	223+271+271	271+271+271	271+271+271	271+271+271	271+271+271	185+185+271+271	185+223+271+271	185+280+271+271	185+271+271+271	175+271+271+271	185+271+271+271	223+271+271+271	280+271+271+271	271+271+271+271	271+271+271+271	271+271+271+271
机器尺寸(H×W×D)		mm	1657×930×765 + 1657×1240×765 + 1657×1240×765				1657×1240×765 + 1657×1240×765 + 1657×1240×765					1657×930×765 + 1657×930×765 + 1657×1240×765 + 1657×1240×765	1657×930×765 + 1657×1240×765 + 1657×1240×765 + 1657×1240×765 + 1657×1240×765					1657×1240×765 + 1657×1240×765 + 1657×1240×765 + 1657×1240×765				
运转音*3	正面运转音	dB(A)	63			64				65	66	65			66		65	66					
	四面运转音	dB(A)	66			67				68	69	68			69		68	69					
夜间静音运转		dB(A)	45									46											
室内/外机配管连接口管径*4	液管	mm	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ22.2	Φ22.2	Φ22.2	Φ22.2	Φ22.2
	气管	mm	Φ38.1	Φ38.1	Φ38.1	Φ41.3	Φ41.3	Φ41.3	Φ41.3	Φ41.3	Φ41.3	Φ44.5	Φ44.5	Φ44.5	Φ44.5	Φ44.5	Φ44.5	Φ44.5	Φ44.5	Φ44.5	Φ44.5	Φ44.5
室外机配管连接口管径*4	液管	mm	——									——					——						
	气管	mm	——									——					——						
重量		kg	789	796	796	796	850	900	900	900	900	992	1046	1076	1096	1096	1096	1150	1180	1200	1200	1200
冷媒	名称		R410A									R410A											
	自带填充量	kg	8.4+15.6+15.6	8.6+15.6+15.6	8.6+15.6+15.6	8.7+15.6+15.6	11.1+15.6+15.6	15.6+15.6+15.6				8.7+8.7+15.6+15.6	8.7+11.1+15.6+15.6		8.7+15.6+15.6+15.6	8.6+15.6+15.6+15.6	8.7+15.6+15.6+15.6	11.1+15.6+15.6+15.6		15.6+15.6+15.6+15.6		
运转范围*5	制冷	℃DB	-15~54℃DB									-15~54℃DB											
	制热	℃DB	-25~27℃DB									-25~27℃DB											
最小线路电流*6	MCA	A	89.7	101.2	105.2	107.3	111.6	113.2	122	126.8	130.8	127.4	131.7	133.3	142.1	148.8	150.9	155.2	156.8	165.6	170.4	174.4
最大熔丝电流*6	MFA	A	100	125	125	125	125	125	140	140	160	160	160	160	160	200	200	200	200	200	200	200

SPL is measured at 1m.

备注:
*1 室内温度: 27℃DB, 19℃WB / 室外温度: 35℃DB
*2 室内温度: 20℃DB / 室外温度: 7℃DB, 6℃WB
*3 四面运转音是按照 GB18837 要求进行四点测试得到的值. 正面运转音为公司内部测量值. 在实际安装状态下, 因为周围噪音及反射的原因, 一般高于样本登载值
*4 室内/外机配管连接口管径与室外机配管连接口管径不同时 (☆标识处), 要进行变径处理, 以室内/外机配管连接口管径为主
*5 在-15～-5℃DB进行制冷运转时, 需满足以下条件
a. 室内机连接率不超过100%
b. 根据室内/室外温度的不同, 必须开启的室内机最小额定制冷量如右表所示
*6 根据MCA来选择电气配管线规格, 根据MFA来选择熔丝或空气开关

室外干球温度 A	室内湿球温度 B	最小开启室内机的额定制冷量 C
-15° CDB≤A<-5° CDB	17° CWB≤B	C＞2.2kW
	14° CWB≤B< 17° CWB	C＞2.8kW
	11° CWB≤B< 14° CWB	C＞3.6kW
	8° CWB≤B< 11° CWB	C＞5.6kW

Appendix 4-2 Predicted Fixed Noise Impact Assessment Result (Base Case Scenario)

Predicted Noise Level for Fixed Noise Impact Assessment - Base Case Scenario
Day/Evening Time

A01 NSR Coordinate: x = 839729.6 y = 809055.0

Source ID	Description	Industrial Noise Source Coordinate: x	y	SPL	Ref dist.	SWL	distance from source to NSR (m)	Distance Corr.	Façade Corr.	Barrier Corr.	Tonality Corr.	ANL
SOH_V1	VRV (Ref: Daikin RUXYQ44BA)	839788.3	808906.6	66.0	1.0	74.0	159.6	-52.1	3.0	0.0	3.0	27.9
SOH_V2	VRV (Ref: Daikin RUXYQ44BA)	839790.3	808906.3	66.0	1.0	74.0	160.6	-52.1	3.0	0.0	3.0	27.9
SOH_V3	VRV (Ref: Daikin RUXYQ44BA)	839787.9	808903.6	66.0	1.0	74.0	162.2	-52.2	3.0	0.0	3.0	27.8
SOH_V4	VRV (Ref: Daikin RUXYQ44BA)	839789.8	808903.3	66.0	1.0	74.0	163.2	-52.3	3.0	0.0	3.0	27.7
SOH_T1	Cooling Tower (Ref: Ryowo FC-350)	839795.3	808903.9	68.0	4.5	89.1	164.8	-52.3	3.0	0.0	3.0	42.8
SMSB_C1	Chiller (Ref: Daikin EWAQ-F-XR 650)	839896.2	808934.0	--	--	92.0	205.9	-54.3	3.0	0.0	3.0	43.7
SMSB_C2	Chiller (Ref: Daikin EWAD-D-SX 490)	839900.8	808932.6	--	--	86.0	210.5	-54.5	3.0	0.0	3.0	37.5
SMSB_C3	Chiller (Ref: Daikin EWAD-D-SX 490)	839905.6	808932.4	--	--	86.0	214.5	-54.6	3.0	0.0	3.0	37.4
								Noise standard:		**60**	**Overall**	**47**

Predicted Noise Level for Fixed Noise Impact Assessment - Base Case Scenario
Night Time

A01 NSR Coordinate: x = 839729.6 y = 809055.0

Source ID	Description	Industrial Noise Source Coordinate: x	y	SPL	Ref dist.	SWL	distance from source to NSR (m)	Distance Corr.	Façade Corr.	Barrier Corr.	Tonality Corr.	ANL
SOH_V1	VRV (Ref: Daikin RUXYQ44BA)	839788.3	808906.6	66.0	1.0	74.0	159.6	-52.1	3.0	0.0	3.0	27.9
SOH_V2	VRV (Ref: Daikin RUXYQ44BA)	839790.3	808906.3	66.0	1.0	74.0	160.6	-52.1	3.0	0.0	3.0	27.9
SOH_V3	VRV (Ref: Daikin RUXYQ44BA)	839787.9	808903.6	66.0	1.0	74.0	162.2	-52.2	3.0	0.0	3.0	27.8
SOH_V4	VRV (Ref: Daikin RUXYQ44BA)	839789.8	808903.3	66.0	1.0	74.0	163.2	-52.3	3.0	0.0	3.0	27.7
SOH_T1	Cooling Tower (Ref: Ryowo FC-350)	839795.3	808903.9	68.0	4.5	89.1	164.8	-52.3	3.0	0.0	3.0	42.8
								Noise standard:		**50**	**Overall**	**43**

Predicted Noise Level for Fixed Noise Impact Assessment - Base Case Scenario
Day/Evening Time

A03 NSR Coordinate: x = 839702.8 y = 809036.4

Source ID	Description	Industrial Noise Source Coordinate: x	y	SPL	Ref dist.	SWL	distance from source to NSR (m)	Distance Corr.	Façade Corr.	Barrier Corr.	Tonality Corr.	ANL
SOH_V1	VRV (Ref: Daikin RUXYQ44BA)	839788.3	808906.6	66.0	1.0	74.0	155.4	-51.8	3.0	0.0	3.0	28.2
SOH_V2	VRV (Ref: Daikin RUXYQ44BA)	839790.3	808906.3	66.0	1.0	74.0	156.8	-51.9	3.0	0.0	3.0	28.1
SOH_V3	VRV (Ref: Daikin RUXYQ44BA)	839787.9	808903.6	66.0	1.0	74.0	157.7	-52.0	3.0	0.0	3.0	28.0
SOH_V4	VRV (Ref: Daikin RUXYQ44BA)	839789.8	808903.3	66.0	1.0	74.0	159.0	-52.0	3.0	0.0	3.0	28.0
SOH_T1	Cooling Tower (Ref: Ryowo FC-350)	839795.3	808903.9	68.0	4.5	89.1	161.6	-52.2	3.0	0.0	3.0	42.9
SMSB_C1	Chiller (Ref: Daikin EWAQ-F-XR 650)	839896.2	808934.0	--	--	92.0	218.8	-54.8	3.0	0.0	3.0	43.2
SMSB_C2	Chiller (Ref: Daikin EWAD-D-SX 490)	839900.8	808932.6	--	--	86.0	223.6	-55.0	3.0	0.0	3.0	37.0
SMSB_C3	Chiller (Ref: Daikin EWAD-D-SX 490)	839905.6	808932.4	--	--	86.0	227.9	-55.2	3.0	0.0	3.0	36.8
								Noise standard:		**60**	**Overall**	**47**

Predicted Noise Level for Fixed Noise Impact Assessment - Base Case Scenario
Night Time

A03 NSR Coordinate: x = 839702.8 y = 809036.4

Source ID	Description	Industrial Noise Source Coordinate: x	y	SPL	Ref dist.	SWL	distance from source to NSR (m)	Distance Corr.	Façade Corr.	Barrier Corr.	Tonality Corr.	ANL
SOH_V1	VRV (Ref: Daikin RUXYQ44BA)	839788.3	808906.6	66.0	1.0	74.0	155.4	-51.8	3.0	0.0	3.0	28.2
SOH_V2	VRV (Ref: Daikin RUXYQ44BA)	839790.3	808906.3	66.0	1.0	74.0	156.8	-51.9	3.0	0.0	3.0	28.1
SOH_V3	VRV (Ref: Daikin RUXYQ44BA)	839787.9	808903.6	66.0	1.0	74.0	157.7	-52.0	3.0	0.0	3.0	28.0
SOH_V4	VRV (Ref: Daikin RUXYQ44BA)	839789.8	808903.3	66.0	1.0	74.0	159.0	-52.0	3.0	0.0	3.0	28.0
SOH_T1	Cooling Tower (Ref: Ryowo FC-350)	839795.3	808903.9	68.0	4.5	89.1	161.6	-52.2	3.0	0.0	3.0	42.9
								Noise standard:		**50**	**Overall**	**43**

Predicted Noise Level for Fixed Noise Impact Assessment - Base Case Scenario
Day/Evening Time

B02 NSR Coordinate: x = 839756.5 y = 809074.2

Source ID	Description	Industrial Noise Source Coordinate: x	y	SPL	Ref dist.	SWL	distance from source to NSR (m)	Distance Corr.	Façade Corr.	Barrier Corr.	Tonality Corr.	ANL
SOH_V1	VRV (Ref: Daikin RUXYQ44BA)	839788.3	808906.6	66.0	1.0	74.0	170.6	-52.6	3.0	0.0	3.0	27.4
SOH_V2	VRV (Ref: Daikin RUXYQ44BA)	839790.3	808906.3	66.0	1.0	74.0	171.3	-52.7	3.0	0.0	3.0	27.3
SOH_V3	VRV (Ref: Daikin RUXYQ44BA)	839787.9	808903.6	66.0	1.0	74.0	173.5	-52.8	3.0	0.0	3.0	27.2
SOH_V4	VRV (Ref: Daikin RUXYQ44BA)	839789.8	808903.3	66.0	1.0	74.0	174.1	-52.8	3.0	0.0	3.0	27.2
SOH_T1	Cooling Tower (Ref: Ryowo FC-350)	839795.3	808903.9	68.0	4.5	89.1	174.7	-52.8	3.0	0.0	3.0	42.3
SMSB_C1	Chiller (Ref: Daikin EWAQ-F-XR 650)	839896.2	808934.0	--	--	92.0	197.9	-53.9	3.0	0.0	3.0	44.1
SMSB_C2	Chiller (Ref: Daikin EWAD-D-SX 490)	839900.8	808932.6	--	--	86.0	202.2	-54.1	3.0	0.0	3.0	37.9
SMSB_C3	Chiller (Ref: Daikin EWAD-D-SX 490)	839905.6	808932.4	--	--	86.0	205.8	-54.3	3.0	0.0	3.0	37.7
								Noise standard:		**60**	**Overall**	**48**

Predicted Noise Level for Fixed Noise Impact Assessment - Base Case Scenario
Night Time

B02 NSR Coordinate: x = 839756.5 y = 809074.2

Source ID	Description	Industrial Noise Source Coordinate: x	y	SPL	Ref dist.	SWL	distance from source to NSR (m)	Distance Corr.	Façade Corr.	Barrier Corr.	Tonality Corr.	ANL
SOH_V1	VRV (Ref: Daikin RUXYQ44BA)	839788.3	808906.6	66.0	1.0	74.0	170.6	-52.6	3.0	0.0	3.0	27.4
SOH_V2	VRV (Ref: Daikin RUXYQ44BA)	839790.3	808906.3	66.0	1.0	74.0	171.3	-52.7	3.0	0.0	3.0	27.3
SOH_V3	VRV (Ref: Daikin RUXYQ44BA)	839787.9	808903.6	66.0	1.0	74.0	173.5	-52.8	3.0	0.0	3.0	27.2
SOH_V4	VRV (Ref: Daikin RUXYQ44BA)	839789.8	808903.3	66.0	1.0	74.0	174.1	-52.8	3.0	0.0	3.0	27.2
SOH_T1	Cooling Tower (Ref: Ryowo FC-350)	839795.3	808903.9	68.0	4.5	89.1	174.7	-52.8	3.0	0.0	3.0	42.3
								Noise standard:		**50**	**Overall**	**43**