Appendix 1

Revised Environmental Assessment

URBAN GREEN

Proposed Development of Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 In D.D.34. Tai Po

Environmental Assessment Report

Reference: P060/02 Issue 5
Date: February 2025
Confidential

URBAN GREEN

Proposed Development of Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 In D.D.34 Tai Po

Environmental Assessment Report

Reference: P60/02 Issue 5

Date: February 2025

Issue	Status	Prepared By	Date	Checked by	Date	Approved By	Date
1	Final	AIC	26/05/22	EMT	26/05/22	JOC	26/05/22
2	Draft	AIC	16/12/22	EMT	16/12/22	JOC	16/12/22
3	Draft	Various	27/02/24	EMT	27/02/24	JOC	27/02/24
4	Draft	Various	04/02/25	EMT	04/02/25	JOC	04/02/25

23/F, Wu Tat Centre, 55 Connaught Road West, Sheung Wan, Hong Kong
Tel: (852) 3114 1144

Contents

List of Figures

List of Tables

List of Appendices

1 Introduction

1.1 Background

1.1.1.1 The Applicant intends to develop a community service complex (hereafter as "the Proposed Development") for providing childcare and elderly care services at the remaining portion of Taxlord Lot No. T77 in D.D.34, Tai Po (hereafter as "the Site").

1.1.1.2 According to the Approved Tai Po Outline Zoning Plan (OZP) (OZP No.: S/TP/30) published by Town Planning Board in July 2022, the Site is in the "Government, Institution or Community" Zone.

1.1.1.3 Urban Green Consultants Limited (UGC) has been commissioned to conduct an Environmental Assessment (EA) to access the potential environmental impact on the Proposed Development.

1.2 Objectives of the EA

1.2.1.1 This EA has identified and addressed the following major environmental issues:

- Identify the sensitive uses that will likely be affected by the construction and the operation of the Site;
- Assess and evaluate the potential noise impacts due to site operation and construction phases upon the sensitive uses;
- Assess and evaluate the potential air quality impacts upon the sensitive users;
- Identify and addressed the potential water quality from the construction and operation of the Project on the relevant water system(s);
- Identify and addressed the waste arising as a result of the construction and operation activities of the Project;
- Identify the potential hazardous risks or detrimental effects due to land contamination as a result of industrial or commercial operations carried out on and around the Project Site over a number of years and currently; and
- Propose mitigation measures, where necessary, to reduce the environmental impacts to an acceptable level.

1.3 Report Structure

1.3.1.1 The remaining chapters of this report are shown below:

Chapter 2: Site Context

Chapter 3: Air Quality

Chapter 4: Noise – Road Traffic Noise

Chapter 5: Noise – Fixed Source Noise

Chapter 6: Noise – Construction Noise

Chapter 7: Water Quality

Chapter 8: Waste Management

Chapter 9: Land Contamination

Chapter 10: Conclusion

2 Site Context

2.1 Site Location and Its Environs

2.1.1.1 The Site is bounded by Tai Po Road – Tai Po Kau to its South. The Japanese International School is located at the West of the Site, while Po Leung Kuk Tin Ka Ping Millennium Primary School is at the Northeast of the Site. The site area is approximately 2,210.2m^2.

2.1.1.2 Figure 2.1 shown the Site Location and its environs.

2.2 Proposed Development

2.2.1.1 The Proposed Development is a 10-storey building which consists of seven department units, i.e. Special Child Care Centre (SCCC), Care and Attention Home Providing Continuum of Care (CoC Home), Small Group Home (SGH), Foster Care Service and Agency-based Enhancement of Professional Staff Support Services (FCS), Staff Training Unit (STU), and Child Care Centre (CCC). There will also be residential places for the elderly, a basement carpark, and a localized sewage treatment plant (STP) on B2/F. The installed capacity of the STP is 168.4m^3/day which is not classified as a Designated Project (DP) under EIAO as it has an installed capacity of not more than 5,000m^3 /day and no reclaimed water will be generated for public use. The anticipated commissioning year of the Proposed Development is 2030.

2.2.1.2 The Proposed Development will involve earthworks and building works, with no dredging operations. No upgrading of drainage channels or river training and diversion work is required for the Proposed Development. The project site is not located within the existing or gazetted country park or special area, conservation area, existing or gazetted marine park or marine reserve, site of cultural heritage, and site of special scientific interest, and no earthworks and building work will be conducted in the above natural reserve area. Therefore, the Proposed Development does not classify as a designated project under EIAO as well as no environmental permit is required.

2.2.1.3 As the noise sensitive rooms within the Proposed Development are potentially subject to adverse noise impacts, noise mitigating designs could be incorporated in Proposed Development, if and when necessary, to alleviate the potential noise impacts.

2.2.1.4 The master layout plan with the floor plans and section drawings are presented in Appendix A.

3 Air Quality

3.1 Introduction

3.1.1.1 This section aims to assess the potential air quality impacts arising from the Proposed Development during construction and operation phases.

3.2 Criteria and Guidelines

3.2.1.1 The air quality impact assessment criteria are made reference to the *Air Pollution Control Ordinance* (APCO) (Cap. 311) and the *Hong Kong Planning Standards and Guidelines* (HKPSG).

3.2.1.2 The APCO provides a statutory framework for establishing the Air Quality Objectives (AQO) and stipulating the anti-pollution requirements for air pollution sources. The AQOs have been identified for seven pollutants and are presented in Table 3.1.

Table 3.1 Hong Kong Air Quality Objectives

Pollutant	Averaging time	Concentration limit ($\mu g/m^3$)	Number of exceedances allowed
Sulphur dioxide (SO_2)	10-minute	500	3
	24-hour	50	3
Respirable suspended particulates (PM10)	24-hour	100	9
	Annual	50	Not applicable
Fine suspended particulates (PM2.5)	24-hour	50	35
	Annual	25	Not applicable
Nitrogen dioxide (NO_2)	1-hour	200	18
	Annual	40	Not applicable
Ozone (O_3)	8-hour	160	9
Carbon monoxide (CO)	1-hour	30,000	0
	8-hour	10,000	0
Lead (Pb)	Annual	0.5	Not applicable

3.2.1.3 A desktop study has been conducted to compare the value of Annual Average Daily Traffic (AADT) of the Tai Po Road against other local distributors with similar or grater traffic flow and located in Tai Po district. Shan Tong Road, Ting Lai Road, On Cheung Road and Ting Kok Road have been selected for the comparison. Table 3.2 shows the summary of the comparison.

Table 3.2 Summary of Traffic Flow Comparison

Road Segment	Road Type	ID	AADT				
			2019	2020	2021	2022	2023
Shan Tong Road (Nan Wan Road to Shan Tong Road	LD	6662	NA	NA	NA	7,520	7,080
Ting Lai Toad (Ting Tai Road to Chung Nga Road)	LD	6070	6,740	6,460	6,720	7,250	6,990
On Cheung Road (Tai Po Tai Wo Road to On Chee Road)	LD	6620	13,560	13,050	13,680	13,160	13,600
Ting Kok Road (Tai Po Tai Wo Road to Kwong Fuk Road)	LD	6621	14,790	14,810	15,210	12,960	12,550
Tai Po Road – Ma Liu Shui (Chung Chi College to Yuen Chau Tsai Interchange) * Road segment include Tai Po Road – Tai Po Kau	RR	6210	7,640	7,970	8,260	7,650	7,340

Note: The values of AADT are extracted from the Annual Traffic Census 2023 published by the Traffic Department.

3.2.1.4 As demonstrated in the analysis above, all four roads exhibit traffic flow volumes that are comparable to or greater than Tai Po Road. According to Table 3.1 in Chapter 9 of the HKPSG, a minimum buffer distance of 5m is required between roads and air sensitive uses for these roads. Given that Tai Po Road shares similar traffic characteristics, the same 5m buffer distance requirement is deemed applicable to it.

Table 3.3 Required Buffer Distance between the Pollution Sources and the Air Sensitive Receiver

Pollution Source	Difference in Height between Chimney Exit and the Site	Required Buffer Distance
Industrial Area	<20m	> 200m (Active and passive recreational uses)
	20 – 30m	5 - 200m (Passive recreational uses)
		> 100m (Active and passive recreational uses)
	30 – 40m	5 - 100m (Passive recreational uses)
		> 50m (Active and passive recreational uses)
	40m	5 - 50m (Passive recreational uses)
		> 10m (Active and passive recreational uses)
Odour Source	NA	200m
Dusty Uses		100m

3.2.1.5 The relevant regulations specified by APCO also include the followings:

- Air Pollution Control Ordinance (Cap. 311);
- Air Pollution Control (Construction Dust) Regulation (Cap. 311R);
- Air Pollution Control (Smoke) Regulation (Cap. 311C);
- Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Cap. 311Z);
- Air Pollution Control (Fuel Restriction) Regulations (i.e. using liquid fuel with a sulphur content of less than 0.005% by weight); and
- Recommended Pollution Control Clauses for Construction Contracts

3.3 Representative Air Sensitive Receivers

3.3.1.1 Representative existing ASRs located within the 500m study area from the Project Site are identified. Details of the ASRs are provided in Table 3.4 below and their locations are shown in Figure 3.1.

Table 3.4 Representative Air Sensitive Receivers

ASR ID	Location	Uses	Horizontal distance from near site boundary (m)	Building height above ground (approx.) (m)
ASR 1	Villa Costa	Residential	369	8
ASR 2	Villa Castell	Residential	190	8

ASR ID	Location	Uses	Horizontal distance from near site boundary (m)	Building height above ground (approx.) (m)
ASR 3	Deerhill Bay	Residential	78	36
ASR 4	Japanese International School	Educational	7	21
ASR 5	PLK Tin Ka Ping Millennium Primary School	Educational	7	21
ASR 6	Sun Fong Chung College	Educational	63	21
ASR 7	Banyan Villa	Residential	445	9
ASR 8	Proposed Development (NSR 2 in 2/F)	Residential	NA	90

3.4 Existing and Future Background Air Quality Data

3.4.1.1 The nearest EPD fixed air quality monitoring station is located at Tai Po. The annual average monitoring data recorded at EPD's air quality monitoring station have shown general declining trend of pollutant concentrations in the past five years. The recent five years (2019 - 2023) observed concentrations of the key air pollutants relevant to the assessment area are presented in Table 3.5.

Table 3.5 Concentrations of Pollutants in the Recent Five Years (Year 2019 – 2023) at Tai Po EPD Air Quality Monitoring Station

Pollutant	Averaging Time	Observed Concentration (µg/m^3)					5-year Average (µg/m^3)
		2019	2020	2021	2022	2023	
Sulphur dioxide (SO_2)	4th Highest 24-hour	10	7	8	5	4	7
	4th Highest 10-minutes	20	19	15	12	27	19
Nitrogen Dioxide (NO_2)	19th Highest 1-hour	142	106	115	93	95	110
	Annual	36	30	32	27	27	30
Respirable Suspended Particulates (RSP)	10th Highest 24-hour	65	58	60	48	53	57
	Annual	31	24	26	21	25	25
Fine Suspended Particulates (FSP)	36th Highest 24-hour	35	28	27	25	26	28
	Annual	20	15	16	14	15	16

Ozone (O_3)	10th Highest 8-hour	197	165	168	188	163	176
	Annual	61	58	59	63	62	61
CO	1st Highest 8-hour	-	-	-	-	-	-
	Annual	-	-	-	-	-	-

Notes:
1) CO concentration is not available at Tai Po Station
2) The number highlighted in red indicates the exceedance against the AQO
3) Source: https://cd.epic.epd.gov.hk/EPICDI/air/station/?lang=en

3.4.1.2 Based on the background air quality data, it appears that the concentrations of all pollutants have decreased over the years from 2019 to 2023 in general. This could indicate improvements in air quality over the year. By comparing with the Air Quality Objectives in Table 3.1, the concentration of all air pollutants falls within the standard except ozone.

3.4.1.3 Future background air quality has been predicted based on hourly concentration data extracted from the "Pollutants in the Atmosphere and their Transport over Hong Kong" (PATH v3.0) model. The Project commissioning year is Year 2030. The best available data from PATH v3.0 will be the projected background scenario in Year 2030. Pollutant concentration in PATH Grid (42,45) in Year 2030 was extracted and summarized in Table 3.6:

Table 3.6 Background Air Pollutant in Year 2030 Extracted from the PATH v3.0 Model

Pollutant	Averaging Time	PATH Grid (42, 45) Concentration (µg/m³)
Sulphur Dioxide (SO_2)	10-minute (4th Highest)	24.34
	24-hour (4th Highest)	6.99
Nitrogen Dioxide (NO_2)	1-hour (19th Highest)	43.23
	Annual	11.02
Respirable Suspended Particulates (RSP)	24-hour (10th Highest)	48.72
	Annual	19.1
Fine Suspended Particulates (FSP)	24-hour (36th Highest)	25.4
	Annual	11.64

Ozone (O3)	8-hour (10th Highest)	169.09
CO	1-hour (1st Highest)	527.27
	8-hour (1st Highest)	490.27

Notes:
1. *Source: PATH v3.0 data for grid cell (42,45) at levels L1 from https://aqia.epd.gov.hk/*
2. *The number highlighted in red indicates the exceedance against the AQO*

3.5 Potential Impact during Construction Phase

3.5.1.1 The relevant statutory requirements during construction phase of the Project include the *APCO and Air Pollution Control (Construction Dust) Regulation*. Referring to the *Air Pollution Control (Construction Dust) Regulation*, the proposed project works are considered to be "construction work" as defined in the regulation.

3.5.1.2 The potential sources of air quality impact associated with the proposed construction activities include foundation works and construction works, which will be expected to generate construction dust and smoke emission.

3.5.1.3 According to the information provided by the project team. The excavation area will be around 2,210m^2 with a maximum depth 19m while that of filling of land will be approximately 1902m^2 and the maximum depth of filling is 7m. Given a dump truck capacity of 28m^3, approximately 1024 dump trucks would be required throughout the construction period. The whole excavation process will be lasted for 12 months with total 296 working days (including Saturday). 4 trips per day is therefore anticipated. And 2 dump trucks will travel approximately twice per day for excavated material transportation. The use of bulldozer, dump truck, auger, crane, air compressor, and concrete lorry mixer will be essential for the construction. Table 3.7 below summarizes the number of dump trucks and mechanical equipment to be used per time over the work site during construction.

Table 3.7 Number of Dump Trucks and Mechanical Equipment

Equipment	Quantity
Stage 1 – Hoarding	
Concrete crusher mini-robot mounted	1
Bulldozer, tracked	1
Dump truck (≤38 tonnes)	2
Stage 2 – Piling	
Rotary bored piling – cast in situ (Crane mounted auger)	2
Wheeled mobile crane	2

Equipment	Quantity
Air compressor (≤10 m^3/min)	4
Stage 3 – Excavation & Pile Cap	
Wheeled mobile crane	1
Excavator, wheeled/tracked	1
Bar bender and cutter (electric)	1
Compactor, vibratory	2
Large lorry concrete mixer	1
Dump truck (≤38 tonnes)	2
Stage 4 – Superstructure	
Wheeled mobile crane	1
Bar bender and cutter (electric)	1
Compactor, vibratory	2
Large lorry concrete mixer	1
Dump truck (≤38 tonnes)	1
Lorry (≤38 tonnes)	1

Note:
[1] The listed equipment is quiet PME suggested in the Technical Memorandum on Noise from Construction Work Other Than Percussive Training.

3.5.1.4 During construction, dust generating construction activities will include vehicle movement, site clearance, drilling, ground excavation, and material handling. Vehicle washing facilities will be provided at the entrances and exits of the work site to minimize dust nuisance created to nearby ASRs. The main dust impacts will arise from truck moments along the unpaved haul roads. Secondary impacts will arise through the stockpiling and removal of spoil during hoarding, piling, and excavation works period.

3.5.1.5 Construction dust shall be controlled in accordance with the requirements as listed in the Schedule of the Air Pollution Control (Construction Dust) Regulation of APCO. Also, notice of notifiable works as defined under the Regulation shall be completed by the Contractor and sent to the Environmental Protection Department (EPD). The road improvement work will as well follow relevant guidelines stipulated by EPD to ensure no adverse air quality impact will be induced to nearby ASRs. In addition, there is no concurrent project in the vicinity of the Project Site, thus no cumulative air quality impact is anticipated.

3.5.1.6 Non-road mobile machinery (NRMM) used on construction sites, such as excavators, bulldozers, and cranes, are significant sources of air pollution, emitting pollutants like nitrogen oxides (NOx), carbon dioxide (CO2), and particulate matter (PM). To mitigate these emissions, several measures can be implemented, including adherence to prescribed emission standards.

3.5.1.7 All the non-road vehicles should follow the emissions standards of the following types of newly approved non-road vehicles. For Regulated machines, which include any mobile machines or transportable industrial equipment, must comply with specific emission standards based on their engine type and power output. For compression-ignition engines, the standards are as follows:

Table 3.8 Prescribed Emissions Standards for Regulated Machine

Rated Engine Power Output (P) in kW	Emission Standards Adopted
Compression-ignition Engines	
37 ≤ P ≤ 560	EU Stage IIIA, US Tier 3 or Japan MoE standards
19< P < 37	EU Stage IIIA, US Tier 2 or Japan MoE standards
Positive-ignition Engines	
19< P ≤ 560	US Tier 2 or Japan MoE standards

3.5.1.8 Mitigation measures for NRMM emissions during the construction including:

1. Advanced Engine Technologies: Utilizing machinery equipped with technologies such as selective catalytic reduction (SCR) and diesel particulate filters (DPF) to reduce NOx and PM emissions;

2. Regular Maintenance: Ensuring regular maintenance and timely repairs to prevent increased emissions due to engine wear and malfunctioning emission control systems;

3. Fuel Quality: Using cleaner fuels with lower sulfur content to reduce the formation of harmful pollutants. Biodiesel and other alternative fuels can also be considered to lower emissions;

4. Retrofitting Older Equipment: Upgrading older NRMM with modern emission control technologies to meet current standards; and

5. Operational Practices: Implementing best practices such as minimizing idling time, optimizing engine load, and using energy-efficient machinery. For example, shutting down engines when not in use and scheduling construction activities to avoid peak pollution periods can be effective.

3.6 Mitigation Measures during Construction Phase

3.6.1.1 During construction phase, it will be ensured that the Contractor or relevant parties implement dust control measures in accordance with the requirements of the *Air Pollution Control (Construction Dust) Regulation* and all dust control measures recommended in regulation, where applicable, will also be implemented. All dusty processing will be avoid or rearrange on non-school hour and keep school management informed of any possible impact. Typical dust control measures include:

- The work area shall be sprayed with water before, during and after the construction works so as to maintain the entire surface wet;
- Restricting heights from which materials are to be dropped, as far as practicable to minimize the fugitive dust arising from unloading/ loading;
- Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from its body and wheels;
- 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 do not leak from the vehicle;
- Travelling speeds should be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks;
- Erection of hoarding of not less than 2.4 m high from ground level along the site boundary;
- 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; and
- 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;
- Electric power supply should be provided for on-site machinery as far as practicable;
- Avoid the use of diesel generators and machinery to minimize gaseous and articulate emissions

3.6.1.2 With the implementation of the mitigation measures, no adverse construction dust impact is anticipated.

3.7 Potential Impact during Operation Phase

3.7.1.1 The Proposed Development is mainly for community service and residential uses. No chimney will be provided in the Proposed Development. As a result, there is no expected air pollutants emissions during operation phase and no air sensitive receivers (ASRs) are assigned for the assessment. Moreover, the design and operation of the proposed carparks for the Project will follow *ProPECC PN 2/96 on Control of Air Pollution in Car Parks*. The exhaust outlets of the proposed carpark will be located at the roof floor which faced away from nearby ASRs as far as applicable.

3.7.1.2 According to the Sewerage Impact Assessment (SIA), an underground Sewage Treatment plant (STP) will be provided at the basement under the Proposed Development. The propose STP would treat sewage generated from the Proposed Development only. The Installed capacity of the proposed STP is 168.41 m^3/day. It is not classified as a Designated Project (DP) under EIAO as it will has an installed capacity of not more than 5,000m^3 /day and no reclaimed water will be generated for public use.

3.7.1.3 The proposed STP will be enclosed underground and the potential odour emission impact from the STP would be minimized. General mitigation measures, including enclosure of odorous facilities, maintaining negative pressure to prevent foul air from flowing out, and provision of deodorisation (DO) unit of at least 99.5% removal efficiency (i.e. H2S), will be implemented to control potential odour impacts. And all odorous emission points, including the vent exhaust of the deodorisation unit, will be located at the roof floor which faced away from nearby ASRs as far as applicable. Good housekeeping practices should also be implemented, including regular inspection of treatment components where odour could be produced, regular cleaning and flushing of screens and other sewage handling equipment, and disposal of collected grit and sludge. After the implementation of the above measures, the potential odour impact due to the operation of the on-site STP would be minimal or negligible

3.7.1.4 According to the desktop survey and the site survey on 10 Jun 2024, no chimney was found within 200m nearby the Site. Thus, no adverse air quality impact will be brought to the Proposed Development by surrounding chimney.

3.7.1.5 Vehicular emission from Tai Po Road -Tai Po Kau is the potential source of air quality impact upon the of the Proposed Development. As confirmed by the Transportation Department, Tai Po Road – Tai Po Kau is classified as a rural road with limited traffic flow. Although the Hong Kong Planning Standards and Guidelines (HKPSG) do not mandate a buffer distance for rural road, a 5m buffer distance will be implemented between Tai Po Road and the Proposed Building. This proactive measure is expected to mitigate any potential air quality impacts from vehicular emissions. Therefore, no adverse air quality impacts associated with vehicular emission to the Proposed Development is anticipated. The detail of the buffer distance is shown in Figure 3.2.

Table 3.9 Required Buffer Distance between the Surrounding Road and the Air Sensitive Receivers of the Proposed Development

Road	Type	Required Buffer Distance	Buffer Distance Provided
Tai Po Road – Tai Po Kau	Rural Road	Not required according to the HKPSG Ch9	>5m

Remark: The identified road type is based on Transport Department's confirmation, please refer to Appendix B.

3.8 Mitigation Measures during Operation Phase

3.8.1.1 The mentioned mitigation measures shall follow the "*Guidelines for the Design of Small Sewage Treatment Plants"* published by EPD. Given the proper handling of the STP, no potential air quality impact is expected due to the Proposed Development.

4 Noise – Road Traffic Noise

4.1 Introduction

4.1.1.1 This section aims to assess the road traffic noise impact from the nearby road upon the Proposed Development during occupancy.

4.2 Assessment Criteria

4.2.1.1 Noise standards are stipulated in Chapter 9 of the *Hong Kong Planning Standards and Guidelines (HKPSG)* for planning against possible noise impact from road traffic. According to the HKPSG, the road traffic noise standard of L10(1-hour) 70 dB(A) for the use of "All domestic premises including temporary housing accommodation" should be followed.

4.3 Assessment Locations

4.3.1.1 Noise sensitive receivers (i.e. dormitory only) were assigned with assessment points. In general, assessment points were assumed at a height of 1.2m above each residential floor and 1m away from the opened window for ventilation of the noise sensitive receivers. Confirmed by the Project Proponent, only dormitories are relied on opened window for ventilation. Other sensitive uses for example office, conference room, sick / isolation /quiet room, end-of-life room, training room, etc. will all rely on central AC system for ventilation. Therefore, only dormitories are assigned with assessment points. Assessment point of the noise sensitive receivers for the road traffic noise impact assessment are shown in Figures 4.1a-d.

4.4 Assessment Assumption and Methodology

4.4.1.1 As advised by the Project Traffic Consultant, there is no major road infrastructure development in the vicinity of the Site. It is anticipated that the traffic will grow continuously within 15 years from occupation of the Proposed Development (i.e. Year 2045 = Year of occupancy (Year 2030) + 15 years). Therefore, the road traffic noise levels were predicted based on the projected peak hour traffic flows for the worst year within 15-year from the year of occupancy. The traffic forecast in Year 2045 was provided by the traffic consultant under the same application. The traffic consultant has confirmed that traffic data is prepared based on the methodology which approved by TD. The traffic data from peak hour was taken into consideration in the assessment. All major roads within 300m from the Site were included in the assessment. The traffic forecast data with the TD's endorsement is presented in Appendix B.

4.4.1.2 The road traffic noise impact at the assessment points were predicted using the computer model "NoiseMap Enterprise - RoadNoise" which implements the calculation method as prescribed in the Calculation of Road Traffic Noise (CRTN) developed by UK Department of Transport, Welsh Office in 1988. The predicted noise levels were then compared against the HKPSG noise criterion for evaluating the impact.

4.5 Assessment Results

4.5.1.1 Based on the road traffic noise assessment results, the predicted traffic noise levels range from 36 to 78 dB(A). Further eliminate the road traffic noise is essential in use of practicable noise mitigation measures.

4.5.1.2 The predicted traffic noise levels at the identified NSRs without the application of mitigation measures are given in Appendix C1.

4.6 Noise Mitigation Measures

4.6.1.1 According to the result of the predicted noised levels under the base case, a low noise road surface is proposed as an initial mitigation measure to reduce road traffic noise. Low Noise Road Surface (LNRS) effectively reduces traffic noise by absorbing the noise generated from tyre-road interactions and minimizing tyre tread impact and shock noise. According to the EPD website "Innovation Noise Mitigation Design and Measures", approximately 2.5dB(A) of noise reduction level in average can be achieved. The predicted traffic noise levels at the identified NSRs with the application of low noise road surface are given in Appendix C2.

4.6.1.2 As indicated by the result of the road traffic noise analysis with proposed LNRS, the predicted traffic noise levels in the simulation range from 36 to 75 dB(A). To comply with the HKPSG's road traffic noise standards (i.e. L10(1-hour) 70 dB(A)), acoustic window application is further proposed.

4.6.1.3 The acoustic window (baffle type) comprises two layers of glass panes. The outer layer has openings for ventilation while the inner layer is a sliding panel aimed at shielding noise. Additional sound absorptive materials can also be applied on the top and both sides of the window frame for further noise reduction.

4.6.1.4 The inner sliding glass panel is introduced to a conventional side-hung window in a staggering position. By properly positioning the openings, noise entering indoor can be reduced while allowing air flow into the room through the air gap between the two layers of glass panel. This design leverages the principle of sound wave interference and absorption. The staggered positioning of the glass panels creates a labyrinthine path for sound waves, which helps in dissipating their energy. The air gap acts as an additional buffer, reducing the transmission of sound. Furthermore, the sound absorptive materials on the window frame enhance the overall noise reduction by absorbing residual sound waves that might penetrate through the glass layers.

4.6.1.5 The Practice Note on Lighting and Ventilation requirements (APP-130) issued by the Building Department (BD) states that the air gap (i.e. the overlapping between the inner and outer window layers) should have an overlapping length of not less than 100mm and a width between 100mm to 175mm, for optimal performance in a closed position.

4.6.1.6 In accordance with the recommended *ProPECC PN 5/23 Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise*. the baffle type acoustic window configuration was considered for noise attenuation purposes. The acoustic window in two different types is proposed and the typical configurations are presented in Figure 4.3a-b. The reference of acoustic window proposed are presented in Appendix E and the summarised of key configuration table are shown in Table 4.1.

4.6.1.7 There are two different types of acoustic windows proposed. For Type A acoustic window, it features two windows and is suitable for larger rooms ranging from 16.9 to 43.1 m² in the Proposed Building. Both the inner and outer window opening are 750 (W) x 1500 (H)mm², with an overlapping length of 200 mm and a gap width of 100 mm. Compared to the reference acoustic window recommended in *ProPECC PN 5/23*, both the inner and outer window openings of the Type A acoustic window share the same dimensions, with a gap width of 100mm. However, the overlapping length of the Type A acoustic window is twice as large as the reference. This indicates that the Type A acoustic window will perform better, ensuring that the noise reduction standards proposed in *ProPECC PN 5/23* can be achieved. This type includes Sound Absorption Material (SAM) and offers an adjusted noise reduction level between 5.2dB(A) and 5.5dB(A) after room size and window opening adjustments. Due to the differences between the proposed acoustic window and the reference acoustic window, +3dB(A) correction factor has been applied for the adjustment in the number of windows.

4.6.1.8 On the other hand, Acoustic Window Type B consists of a single window, designed for smaller rooms between 16.9 and 6.6 m². It shares the same dimensions for the inner and outer window openings, overlapping length, and gap width as Type A acoustic window and also includes SAM. However, its adjusted noise reduction level ranges from 8.2 dB(A) to 4.5 dB(A) due to the different size of the served room. Compared to the reference acoustic window recommended in *ProPECC PN 5/23*, the Type B acoustic window has larger inner and outer openings. Both windows have a gap width of 100 mm. However, the overlapping length of the Type B acoustic window is twice as large as the reference. This indicates that the Type B acoustic window will perform better, ensuring that the noise reduction standards proposed in *ProPECC PN 5/23* can be achieved. Due to the window size differences between the proposed acoustic window and the reference acoustic window, +3dB(A) correction factor has been applied into the calculation.

4.6.1.9 After the implemented of the acoustic window, all the NSR complied with the noise criteria stated at Section 4.2.1.1 The configuration of noise reduction of acoustic window (baffle type) and noise reduction after adjustment for improvement measures, room size, etc are shown in Appendix D. The predicted noise level with mitigation measures is shown in Appendix C2.

Table 4.1 Key Configuration of Proposed Acoustic Window

Key Configuration	Acoustic Window (Type A)	Acoustic Window (Type B)
Number of Windows	2	1
Room Size (m^2)	43.1 – 27.1	16.9 - 6.6
Inner Window Opening (mm^2)	750(W) x 1500(H)	750(W) x 1500(H)
Outer Window Opening (mm^2)	750(W) x 1500(H)	750(W) x 1500(H)
Overlapping (mm)	200	200
Gap width (mm)	100	100
SAM	Yes	Yes

4.6.1.10 The locations of the proposed noise mitigation measures are listed in Table 4.2 below:

Table 4.2 Locations of Proposed Acoustic Windows

NSR ID	Recommended Mitigation Measure(s)	Implemented Floor(s)
NSR 1	Acoustic Window (Type A)	3/F-6/F
NSR 2		2/F
NSR 4		3/F-6/F
NSR 8		2/F-6/F
NSR 5		2/F
NSR 3	Acoustic Window (Type B)	8/F-9/F
NSR 6		8/F-9/F
NSR 7		8/F-9/F

4.6.1.11 With the further application of the proposed mitigation measure on the above NSRs, the traffic noise level will comply with the 70 dB(A) standard. Thus, no adverse traffic noise impacts are anticipated within the Proposed Development. The location of the acoustic window is shown in Figure 4.2a-d.

4.6.1.12 The predicted traffic noise levels at the NSRs with the application of mitigation measures including LNRS and acoustic window it is expected that the noise impact in each specific room will be effectively mitigated, and road noise impact will not be anticipated.

5 Noise – Fixed Source Noise

5.1 Introduction

5.1.1.1 This section aims to assess potential noise impacts upon the Proposed Development during occupancy and the noise impacts from the Proposed Development on the adjacent sensitive uses.

5.2 Criteria and Guidelines

5.2.1 Existing Fixed Source Noise

5.2.1.1 Under the Noise Control Ordinance (NCO), noise criteria for existing fixed noise sources are stipulated in the "*Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites*" (IND-TM).

5.2.1.2 The Site is situated in a residential area and is located to the southwest of Tolo Highway. Tolo Highway is considered to be an Influencing Factor (IF) since the annual average daily traffic flow was in excess of 30,000, according to "*The Annual Traffic Census 2023*" issued by Transport Department (TD). However, it should not cause noise effects on the Proposed Development, provided that the highway is 530m away from the Site and there are residential buildings in between.

5.2.1.3 Given the type of area for the Site is classified as Type (ii) "Low density residential area consisting of low-rise or isolated high-rise developments" and will not be affected by the IF, the Area Sensitivity Rating (ASR) of the subject site area is defined as "A". Noise standards for this fixed noise impact assessment are tabulated in Table 5.1 and shall be adopted for all time periods in the assessment.

Table 5.1 Noise Standards for Existing Fixed Noise Source

Time Period	Acceptable Noise Level (ANL) in IND-TM, dB(A)
Day (0700 to 1900 hours)	60
Evening (1900 to 2300 hours)	60
Night (2300 to 0700 hours)	50

5.2.2 Planned Fixed Source Noise

5.2.2.1 According to the HKPSG, the noise standards (in $L_{eq(30min)}$) from the planned fixed noise sources should be 5 dB(A) below the Acceptable Noise Level (ANL) as specified in the IND-TM or as the prevailing background noise level at the façade of the noise sensitive receivers (NSRs). The Acceptable Noise Levels (ANLs) and the HKPSG for the planned fixed noise source as tabulated in Table 5.2 should be followed.

Table 5.2 Noise Standards for Planned Fixed Noise Sources

Time Period	ANL in IND-TM (Area Sensitivity Rating "A")	Noise Standard for Planned Fixed Noise Source [ANL - 5 dB(A)], dB(A)
Day (0700 to 1900 hours)	60	55
Evening (1900 to 2300 hours)	60	55
Night (2300 to 0700 hours)	50	45

5.3 Noise Sensitive Receiver

5.3.1.1 Three representative NSRs were assigned near the Proposed Development. The first representative NSR is Japanese International School (NSR N1), located at approximately 34m to the northwest of the Site. PLK Tin Ka Ping Millennium Primary School (NSR N2) is the second NSR and is located at approximately 63m to the east of the Site. The third NSR is Deerhill Bay (NSR N3) which is approximately 67m away from the Site in the southeast direction. The details are provided in Table 5.3, and the NSR locations are presented in Figure 5.1.

Table 5.3 Representative Noise Sensitive Receiver

NSR ID	NSR Name	Uses	Area Sensitivity Rating
N1	Japanese International School	Educational institutions	A(1)
N2	PLK Tin Ka Ping Millennium Primary School	Educational institutions	A(1)
N3	Deerhill Bay	All domestic premises	A(1)

Note: (1) N1, N2 and N3 are considered to be located in the "Low-density residential area consisting of low-rise or isolated high-rise developments" area and are not affected by an IF, therefore an ASR of "A" has been assigned.

5.4 Background Noise Conditions

5.4.1.1 Noise surveys were conducted on 09 February 2022 and 07 September 2022 to obtain the prevailing background noise levels during daytime, evening time, and night time for determining the ANLs of NSRs N1, N2, and N3. The measurement points were taken at 1.2 m above the ground level. 1-hour L_{90} measurements were conducted for the daytime, evening time and night time, at the monitoring locations presented in Figure 5.1. The measured prevailing noise levels and established noise standard to be complied with according to IND-TM for fixed plant sources are summarized in Table 5.4. As the measurement points are open-field, 3 dB(A) are added to the measured noise levels.

Table 5.4 Measurement of Background Noise Levels

Measurement Period	NSR ID	Monitoring Location	Adjusted Measured Background Noise Level, dB(A)	IND-TM Noise Standard for Planned Fixed Noise Source, [ANL-5dB(A)], dB(A)
09 February 2022 15:55-16:55 (Daytime)	N1	Japanese International School	73.3	55
09 February 2022 21:55-22:55 (Evening Time)			66.1	55
07 September 2022 0:00-01:00 (Night Time)			53.0	45
09 February 2022 16:58-17:58 (Daytime)	N2	Entrance of PLK Tin Ka Ping Millennium Primary School	59.8	55
09 February 2022, 20:45-21:45 (Evening Time)			57.6	55
07 September 2022 1:06-2:06 (Night Time)			47.9	45
09 February 2022 17:59-18:59 (Daytime)	N3	Gate at Deerhill Bay	62.2	55
09 February 2022 19:43-20:43 (Evening Time)			60.4	55
07 September 2022 02:07-3:07 (Night Time)			61.4	45

5.4.1.2 Based on the results, the measured prevailing background noise at all locations are higher than the noise standards. The standards stated in the HKPSG and IND-TM (refer to Table 5.1 and Table 5.2) should therefore be followed.

5.5 Potential Impact during Operation Phase

5.5.1 Noise Impacts from the Proposed Development on the Existing NSRs

5.5.1.1 Potential fixed plant noise associated with the Proposed Development will include noise from the operation of mechanical ventilation and air-conditioning (MVAC), building services equipment and mechanical ventilation provisions for the plant rooms, etc.

5.5.1.2 The actual noise impact from the fixed noise source(s) to the existing NSRs shall be assessed during the detailed design stage of M&E equipment. E&M consultant or

contractor should ensure that the proposed E&M equipment shall be selected and installed to comply with the HKPSG's noise criteria stated in Table 5.2 (i.e. 55 dB(A) for day time and evening time; and 45 dB(A) for night time). As such, no adverse noise impact from fixed sources on existing NSRs is anticipated during operation.

5.5.2 Noise Impact from Potential Noise Sources within the Development

5.5.2.1 In general, building services equipment within the Proposed Development, such as pump unit, transformers, and emergency generator shall be placed at enclosed plant rooms with concrete building envelop. Typical acoustic treatment such as acoustic louvers and silencers shall be provided at the air intake and exhaust louvres of the plant rooms as required. Noise emission shall also be controlled by appropriate selection of equipment and noise control treatments such as acoustic silencers and noise enclosures, whenever necessary.

5.5.2.2 Fixed plant noise control measures, such as above-mentioned enclosed plant room, equipment selection and acoustic treatments, shall be adopted for potential noise sources of Proposed Development as necessary for the compliance with the fixed noise standards of recommended in HKPSG.

5.5.3 Noise Impact from Existing Noise Sources to the Development

5.5.3.1 A site survey conducted on 14 September 2024 identified four sets of chillers, each consisting of two units, located on the roof of the Japanese International School (JIS). Additionally, several outdoor air-conditioning units were observed on the roof and façade of a typical floor at PLK Tin Ka Ping Millennium Primary School. These units may contribute to potential noise impacts on the Proposed Development. The sound power levels of the AC units at PLK Tin Ka Ping Millennium Primary School were determined based on the identified equipment models. However, the noise data of some outdoor AC units (ST1 (2/F), TY-3, and TY-4) are not available. To address this issue, reference outdoor AC units with similar coefficients of performance (COP), dimensions, and cooling capacities were selected for the calculations. At JIS, on-site noise measurements were not permitted, and no chiller specifications were provided. A far-field measurement approach was deemed unsuitable due to potential interference from traffic and other fixed noise sources. Consequently, reference chillers were used to estimate the sound power levels. Site observations confirmed that each of chiller set at JIS consists of two individual chillers, each equipped with six fan motors. To accurately represent the chiller system, two reference chillers (each with six fan motors) were combined and evaluated as a single chiller set (12 fan motors in total) for the fixed noise calculations. The inventory of existing fixed noise sources is summarized in Table 5.5. Additionally, the relevant catalogue of fixed noise sources, along with photographs of the chillers on the roof of JIS and the catalogue reference chiller and AC units are provided in Appendix G.

Table 5.5 Inventory of Existing Fixed Noise Sources

ID	Location	Usage	Major Noise Source
ST1 to ST9	PLK Tin Ka Ping Primary School 1-2/F AC Platform	Educational	Split Type AC

ID	Location	Usage	Major Noise Source
ST1 to ST18	PLK Tin Ka Ping Primary School 3-7/F AC Platform	Educational	Split Type AC
TY3 (1 to 6)	PLK Tin Ka Ping Primary School R/F	Educational	VRV Outdoor Unit
TY4 (1 to 2)	PLK Tin Ka Ping Primary School R/F	Educational	VRV Outdoor Unit
TY5 (1 to 4)	PLK Tin Ka Ping Primary School R/F	Educational	VRV Outdoor Unit
TY6 (1 to 5)	PLK Tin Ka Ping Primary School R/F	Educational	VRV Outdoor Unit
JS1 to JS4	Japanese International School	Educational	Chiller

5.5.3.2 Noise data from equipment share the similar dimension have been applied for the calculation. Sound power level of the chiller in JIS have been estimated for calculation of the overall impacts and the catalogue are shown in Appendix G:

$$SWL = SPL + \left|10 \times \log_{10}\left(\frac{Q}{4\pi r^2}\right)\right|$$

where,

SWL	Sound power level, dB(A)
SPL	Sound pressure level, dB(A)
Q	Directivity Factors
r	Distance to sound source

5.5.3.3 Impact due to individual noise source have been calculated and logarithmically summed at the individual NSRs for calculation of the overall impacts:

$$PNL = \sum [SPL_i + C_{dist} + C_{impulse} + C_{tonality} + C_{barrier} + C_{facade} + C_{Intermittency}]$$

Where applicable

PNL = Overall sound pressure level arising from individual noise source after correction

SPL_i = Sound pressure level of individual noise source

C_{dist} = Correction for distance attenuation

$C_{impulse}$= Correction (+3dB(A)) for impulsive noise in IND-TM, if applicable

$C_{tonality}$ = Correction (+3dB(A)) for tonality as in IND-TM if applicable

$C_{barrier}$ = Correction (-5dB(A)) for barrier effects due to various architectural features/ obstacles/purpose-built noise barrier/ parapet wall, if any

C_{facade} = Correction (+3dB(A)) for façade reflection at receiver

$C_{Intermittency}$ = Correction (+3dB(A)) for sound pressure level repaid change in nighttime period

The distance attenuation is calculated by adopting the equation as shown below:

$$C_{dist} = 10 \times \log_{10}(\frac{Q}{4\pi r^2})$$

where,

Q=Directivity Factors
r=Distance to sound source, m

5.5.3.4 Fixed noise assessment is conducted to predict the noise level at the NSR of Proposed Development due to the existing fixed noise sources from the surrounding. The results showed that the predicted noise level at the NSRs is between 45dB(A) to 60dB(A) during daytime, which comply with the noise criteria as stipulated in IND-TM (i.e. 60dB(A) during daytime). In addition, as confirmed by the operator of JIS and PLK, the MVAC equipment will not operate at evening and night. Hence, only daytime noise levels are assessed. Therefore, no existing fixed noise impact is anticipated. In the calculation, no tonality correction is applied as no tonal quality is observed during site survey on 14 September 2024. For the intermittency correction, according to the Technical Memorandum issued by EPD, correction of intermittency is only applicable in nighttime period which is not apply for this case. Regarding the correction for impulsiveness, the assessed fixed noise sources, mainly chiller outdoor units and VRV outdoor units, do not exhibit any impulsive characteristics. Therefore, no Correction for Impulsiveness is applied. The Figure 5.3 and Figure 5.4 depict the cross-section diagram between the Proposed Development and the Japanese International School and PLK Tin Ka Ping Millennium Primary School respectively and the detail calculation are presented in Appendix G.

5.5.3.5 Furthermore, three chillers were located on the premises of the Hong Kong & Kowloon Kaifong Women's Association Sun Fong Chung College. Considering the height difference between the observed fixed noise sources and the noise receivers, no direct line of sight is observed, and the noise sources are totally screened by the PLK Tin Ka Ping Primary School. Therefore, these chillers are not considered into the assessment.

6 Noise – Construction Noise

6.1 Introduction

6.1.1.1 This section addresses the potential noise impacts associated with the construction phase of the Project. The potential noise impacts associated with the proposed construction works of the development are identified and evaluated.

6.2 Relevant Legislation, Standards and Guidelines

6.2.1.1 The Noise Control Ordinance (NCO) provides the statutory framework for noise control. Assessment procedures and standards relevant to the Project are set out in the Technical Memoranda (TM) and guidelines listed below:

- Chapter 9, Environment - Hong Kong Planning Standards and Guidelines (HKPSG);
- Practice Note for Professional Persons No. ProPECC PN No. 1/24 "Minimizing Noise from Construction Activities";
- Noise Control Ordinance (NCO) (Cap. 400);
- Technical Memorandum on Noise from Construction Work other than Percussive Piling (GW-TM);
- Technical Memorandum on Noise from Percussive Piling (PP-TM); and

6.3 Potential Impact during Construction Phase

6.3.1.1 There is no statutory control of daytime (07:00-19:00 hours) construction noise and general construction work (excluding percussive piling) may be carried out in this time period on normal weekdays. Any maintenance work in connection with the proposed construction work is also considered as construction work under the NCO and should also be conducted within this time period, if necessary.

6.3.1.2 Noise impact arising from general construction activities conducted during the restricted hours (19:00-07:00 hours on any day and any time on Sunday or general holiday) are governed by the NCO. Currently, it is not expected that construction works will be carried out during the restricted hours but in the event that it is required, a Construction Noise Permit (CNP) will be applied for and obtained prior to commencement of works during restricted hours. Any specific requirements in the CNP will be strictly adhered to.

6.3.1.3 The proposed works will be conducted within the Site with temporary noise barriers erected for screening noise sources from construction plants. To further eliminate the construction noise, the following mitigation measures should be implemented where applicable:

- Selecting quieter powered mechanical equipment (PME) to reduce noise generated from construction activities
- Placing PME as far from NSRs as possible and direct away from NSRs
- Maintaining good site practices, including the avoidance of parallel use of multiple PME

6.3.1.4 The feasibility of adopting other quieter construction methods such as, non-explosive chemical expansion agent, quieter type wire saw or diamond wire saw, listed in the EPD website will also be considered. As such, adverse construction noise impact on the nearby NSRs during construction phase is not anticipated.

7 Water Quality

7.1 Introduction

7.1.1.1 This section addresses the potential sources of water quality impact associated with the construction and operation phases of the project. The relevant statutory requirements and mitigation measures recommended in order to minimize impacts are presented in this section.

7.2 Relevant Legislation, Standards and Guidelines

7.2.1.1 The relevant legislations, standards and guidelines for the review of water quality impact includes the following:

- Water Pollution Control Ordinance (WPCO) (Cap. 358);
- Technical Memorandum for Effluents Discharged into Drainage and Sewerage System Inland and Coastal Waters (TM-DSS);
- Professional Persons Environmental Consultative Committee Practice Note (ProPECC) PN 2/24 "Construction Site Drainage";
- Professional Persons Environmental Consultative Committee Practice Note ProPECC PN 1/23 on Drainage Plans Subject to Comment by the EPD
- EPD's Guidelines for the Design of Small Sewage Treatment Plants; and
- ETWB Technical Circular (Works) No. 5/2005 Protection of Natural Streams/Rivers from Adverse Impacts Arising from Construction Works.

7.2.1.2 According to "Marine Water Quality of Hong Kong 2023" published by EPD, the Proposed Development is located in the inland area of the Tolo Harbour Water Control Zone (WCZ). The water quality objectives for Tolo Harbour WCZ and the water quality objective for watercourses are summarised in Table 7.1 in Table 7.2.

Table 7.1 Summary of Water Quality Objectives for Tolo Harbour and Channel WCZ

Parameters	Water Quality Objectives	Part or Parts of Zone
Aesthetic Appearance	a) Waste discharges shall cause no noxious or offensive odour or offensive taint or colour in either waters or edible aquatic organisms in the subzone to be present in concentrations detectable by bioassay or organoleptic tests.	Whole Zone
	b) Waste discharges shall cause no visible foam, oil, grease, scum, litter or other objectionable matter in waters of the subzone.	Whole Zone

Parameters	Water Quality Objectives	Part or Parts of Zone
Bacteria	The level of Escherichia coli should not exceed 610 per 100 mL, calculated as the geometric mean of all samples collected in one calendar year.	Inland Waters
Colour	Waste discharges shall not cause the colour of water to exceed 50 Hazen units.	Inland waters
Chlorophyll-A	a) Waste discharges shall not cause the level of chlorophyll-a in waters of the subzone to exceed 20 milligrams per cubic metre, calculated as a running arithmetic mean of 5 daily measurements for any single location and depth	Harbour subzone
	b) Waste discharges shall not cause the level of chlorophyll-a in waters of the subzone to exceed 10 milligrams per cubic metre, calculated as a running arithmetic mean of 5 daily measurements for any single location and depth.	Buffer subzone
	c) Waste discharges shall not cause the level of chlorophyll-a in waters of the subzone to exceed 6 milligrams per cubic metre, calculated as a running arithmetic mean of 5 daily measurements for any single	Channel subzone
Dissolved Oxygen	a) Waste discharges shall not cause the level of dissolved oxygen in waters of the subzone to be less than 2 milligrams per litre within 2 metres of the bottom, or to be less than 4 milligrams per litre in the remainder of the water column.	Harbour subzone
	b) Waste discharges shall not cause the level of dissolved oxygen in waters of the subzone to be less than 3 milligrams per litre within 2 metres of the bottom, or to be less than 4 milligrams per litre in the remainder of the water column.	Buffer subzone
	c) Waste discharges shall not cause the level of dissolved oxygen in waters of the subzone to be less than 4 milligrams per litre at any point in the water column.	Channel subzone
Light Penetration	a) No changes in turbidity, suspended material, colour or other parameters arising from waste discharges shall reduce light transmission by more than 20 per cent of the normal level in the subzone at any location or any time.	Harbour subzone
	b) No changes in turbidity, suspended material, colour or other parameters arising from waste	Buffer subzone

Parameters	Water Quality Objectives	Part or Parts of Zone
	discharges shall reduce light transmission by more than 15 per cent of the normal level in the subzone at any location or any time.	
	c) No changes in turbidity, suspended material, colour or other parameters arising from waste discharges shall reduce light transmission by more than 10 per cent of the normal level in the subzone at any location or any time.	Channel subzone
pH	a) Waste discharges shall not cause the normal pH range of any waters of the subzone to be extended by greater than ± 0.5 pH units at any time.	Harbour subzone
	b) Waste discharges shall not cause the normal pH range of any waters of the subzone to be extended by greater than ± 0.3 pH units at any time.	Buffer subzone
	c) Waste discharges shall not cause the normal pH range of any waters of the subzone to be extended by greater than ± 0.1 pH units at any time.	Channel subzone
Salinity	Waste discharges shall not cause the normal salinity range of any waters of the subzone to be extended by greater than ± 3 parts per thousand at any time.	Whole Zone
Settleable Material	Waste discharges shall give rise to no bottom deposits or submerged objects which adversely influence bottom-living communities, alter the basic Harbour geometry or shipping channels, present any hazard to shipping or diving activities, or affect any other beneficial use of the waters of the subzone.	Whole Zone
Temperature	Waste discharges shall not cause the natural daily temperature range in waters of the subzone to be extended by greater than ± 1.0 degree Celsius at any location or time. The rate of temperature change shall not exceed 0.5 degrees Celsius per hour at any location, unless due to natural phenomena.	Whole Zone
Toxicants	Waste discharges shall not cause the toxicants in waters of the subzone to attain such a level as to produce significant toxic effects in humans, fish or any other aquatic organism, with due regard to biologically cumulative effects in food chains and to toxicant inter-actions with each other.	Whole Zone

Table 7.2 Summary of Water Quality Objectives for Watercourses in Tolo Harbour and Channel WCZ

Parameters	Water Quality Objectives	Part or Parts of Zone
AESTHETIC APPEARANCE	Waste discharges shall not cause waters of the subzone to contain substances that (a)settle to form objectionable deposits. (b)float as debris, scum, oil or other matter to form nuisances. (c)produce objectionable colour, odour, taste or turbidity. (d)injure or are toxic or produce adverse physiological responses in humans, animals or plants; or (e)are conducive to undesirable aquatic life or a nuisance to aquatic life.	All watercourses
BACTERIA	Waste discharges shall not cause the level of Escherichia coli to exceed 1 000 per 100 mL in waters of the subzone, levels to be calculated as a running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days (or 14 and 42 days).	(a) SM(A) (b) SM(C) (c) SM(D) (d) SM(E) (e) SM(H) (f) SM(I) (g) TP(B) (h) TP(C) (i) other watercourse
	Waste discharges shall not cause the level of Escherichia coli to exceed 0 per 100 mL in waters of the subzone, levels to be calculated as a running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days (or 14 and 42 days).	(a) SM(B) (b) SM(F) (c) SM(G) (d) LT(C)

Parameters	Water Quality Objectives	Part or Parts of Zone
		(e) LT(D) (f) TP(A)
COLOUR	Waste discharges shall not cause the colour of waters of the subzone to exceed 50 Hazen units at any time.	(a) SM(A) (b) SM(C) (c) SM(D) (d) SM(E) (e) SM(H) (f) SM(I) (g) TP(B) (h) TP(C) (i) other watercourses
	Waste discharges shall not cause the colour of waters of the subzone to exceed 30 Hazen units at any time.	(a) SM(B) (b) SM(F) (c) SM(G) (d) LT(C) (e) LT(D) (f) TP(A)
pH	Waste discharges shall not cause the pH of waters of the subzone to exceed the range of 6.0 to 9.0 at any time.	(a) SM(D) (b) SM(E) (c) SM(I) (d) other watercourses

Parameters	Water Quality Objectives	Part or Parts of Zone
pH	Waste discharges shall not cause the pH of waters of the subzone to exceed the range of 6.5 to 8.5 at any time.	(a) SM(A) (b) SM(B) (c) SM(C) (d) SM(F) (e) SM(G) (f) SM(H) (g) LT(C) (h) LT(D) (i) TP(A) (j) TP(B) (k) TP(C)
TEMPERATURE	Waste discharges shall not cause the natural daily temperature range in waters of the subzone to be extended by greater than ± 2.0 degrees Celsius at any location or time.	All watercourses
SUSPENDED SOLIDS	Waste discharges shall not cause the annual median of suspended solids in waters of the subzone to exceed 25 milligrams per litre.	(a) SM(D) (b) SM(E) (c) SM(I) (d) other watercourses
	Waste discharges shall not cause the annual median of suspended solids in waters of the subzone to exceed 20 milligrams per litre.	(a) SM(A) (b) SM(B) (c) SM(C) (d) SM(F) (e) SM(G)

Parameters	Water Quality Objectives	Part or Parts of Zone
		(f)SM(H) (g)LT(C) (h)LT(D) (i)TP(A) (j)TP(B) (k)TP(C)
DISSOLVED OXYGEN	Waste discharges shall not cause the level of dissolved oxygen in waters of the subzone to be less than 4 milligrams per litre or 40% saturation (at 15 degrees Celsius) at any time.	All watercourses
5 DAYS BIOCHEMICAL OXYGEN DEMAND	Waste discharges shall not cause the 5 days biochemical oxygen demand in waters of the subzone to exceed 5 milligrams per litre at any time.	(a) SM(A) (b) SM(C) (c) SM(D) (d) SM(E) (e) SM(H) (f) SM(I) (g) TP(B) (h) TP(C) (i) other watercourses
	Waste discharges shall not cause the 5 days biochemical oxygen demand in waters of the subzone to exceed 3 milligrams per litre at any time.	(a) SM(B) (b) SM(F) (c) SM(G) (d) LT(C) (e) LT(D)

Parameters	Water Quality Objectives	Part or Parts of Zone
		(f) TP(A)
CHEMICAL OXYGEN DEMAND	Waste discharges shall not cause the chemical oxygen demand in waters of the subzone to exceed 30 milligrams per litre at any time.	(a) SM(A) (b) SM(C) (c) SM(D) (d) SM(E) (e) SM(H) (f) SM(I) (g) TP(B) (h) TP(C) (i) other watercourses
	Waste discharges shall not cause the chemical oxygen demand in waters of the subzone to exceed 15 milligrams per litre at any time.	(a) SM(B) (b) SM(F) (c) SM(G) (d) LT(C) (e) LT(D) (f) TP(A)
AMMONIACAL NITROGEN	Waste discharges shall not cause the ammoniacal nitrogen in waters of the subzone to exceed 0.5 milligrams per litre at any time.	All watercourses
TOXICANTS	Waste discharges shall not cause the toxicants in waters of the subzone to attain such a level as to produce significant toxic effects in humans, fish or any other aquatic organism, with due regard to biologically cumulative effects in food chains and to toxicant inter-actions with each other.	All watercourses

7.3 Water Sensitive Receivers and Baseline Conditions

7.3.1.1 Within the 500m water quality study area, eight potential water quality sensitive receivers (WSR) are identified. The locations of the WSRs are shown in Figure 7.1.

Table 7.3 Representative Water Sensitive Receivers

WSR	Description	Distance from Site Boundary, (m)
WSR1	Natural Stream	277
WSR2	Natural Stream	331
WSR3	Natural Stream	374
WSR4	Channelized Drainage	441
WSR5	Natural Stream	298
WSR6	Tai Po Kau Natural Reserve	363
WSR7	Conservation Area 1	415
WSR8	Conservation Area 2	29
WSR9	Channelised Drainage	260
WSR10	Natural Stream	251
WSR11	Channelised Drainage	81
WSR12	Channelised Drainage	15
WSR13	Channelised Drainage	227
WSR14	Channelised Drainage	79
WSR15	Channelized Drainage	136
WSR16	Natural and Channelised Stream	150
WSR17	Channelized Drainage	164
WSR18	Natural and Channelised Stream	294

7.3.1.2 With reference to "River Water Quality in Hong Kong in 2023" published by the EPD, the nearest water quality monitoring station of the proposed project site is Tai Po Kau Stream Monitoring Station (TR14). The water quality of Tai Po Kau Stream had a

WQO compliance rate of 100% over the past decade. Table 7.4 shows the summary of water quality monitoring data for Tai Po Kau Stream in 2023:

Table 7.4 River Water Quality Monitoring Data for Tai Po Kau Stream (TR14) in 2023

Parameter	Unit	Water Quality Monitoring Station TR14
Dissolved Oxygen	mg/L	7.7 (5.4 -- 9.3)
pH	-	6.9 (6.7 – 7.2)
Suspended Solids	mg/L	2.4 (0.8 – 84.0)
5-Day Biochemical Oxygen Demand	mg/L	0.3 (<0.1 – 0.8)
Chemical Oxygen Demand	mg/L	9 (6--21)
Oil & Grease	mg/L	<0.5 (<0.5 - <0.5)
E. coli	counts/ 100mL	1,768 (820 – 22,000)
Faecal Coliforms	counts/ 100mL	4448 (1,000 – 35,000)
Ammonia-Nitrogen	mg/L	0.103 (0.053 – 0.270)
Nitrate-Nitrogen	mg/L	0.275 (0.150 – 0.540)
Total Kjeldahl Nitrogen	mg/L	0. 26 (0.14 – 0.36)
Orthophosphate Phosphorus	mg/L	0.014 (<0.002 – 0.034)
Total Phosphorus	mg/L	0.04 (<0.03 – 0.07)
Sulphide	mg/L	<0.02 (<0.02 - <0. 02)
Aluminium	µg/L	<50 (<50 – <50)
Cadmium	µg/L	<0.1 (<0.1 – <0.1)
Chromium	µg/L	<1 (<1 – 1)
Copper	µg/L	<1 (<1 – 3)
Lead	µg/L	<1 (<1 - <1)
Zinc	µg/L	<10 (<10 – 10)
Flow	m^3/s	0.064 (0.008 – 0.720)

Parameter	Unit	Water Quality Monitoring Station TR14

Note:
Data presented are in annual medians of monthly samples; except those for faecal coliforms and E. coli are in annual geometric means. Figures in brackets are annual ranges.

7.4 Potential Impact during Construction Phase

7.4.1 Construction Site and Drainage

7.4.1.1 Prior to the commencement of the project construction works, a discharge license according to the WPCO requirements will be applied for and obtained before any discharge of wastewater from the site to any drainage or sewerage systems, or inland or coastal waters within a WCZ. All site discharges will be pre-treated as necessary, in strict accordance with the WPCO, the conditions of the WPCO discharge license issued, and the relevant standards for the various parameters listed in the TM-DSS prior to discharge.

7.4.1.2 Only land-based construction activities will be involved in this project, including demolition works, excavation works for cable trenches, pits, basement carpark and underground STP, as well as underground drainage and building interior renovation works. Water quality impacts arising from accidental spillage of chemicals, construction works in close proximity of inland watercourses, and wastewater from general construction activities will be assessed. The key water quality issues associated with the construction activities include uncontrolled surface runoff generated from general cleaning, water spraying for dust suppression, wheel washing, and utility installation. These types of wastewater would contain high concentrations of suspended solids (SS).

7.4.1.3 The aforementioned guidelines and good site practices for handling and disposal of construction discharges as part of the construction site management practices would be adopted. Site drainage would also be well maintained, thus no adverse water quality impact from the construction activities is expected.

7.4.1.4 The following water pollution control measures will be considered to be implemented during construction phase in order to further minimize the impacts:

- High loading of suspended solids (SS) in construction site runoff shall be prevented through proper site management by the contractor;
- Construction works should be programmed to minimize soil excavation works where practicable during rainy conditions. Exposed soil surfaces should be protected from rainfall through covering temporarily exposed slope surfaces or stockpiles with tarpaulin or the like;
- Temporary ditches, earth bunds will be created/ provided where necessary to facilitate directed and controlled discharge of runoff into storm drains via sand/ silt removal facilities such as sand traps, silt traps and sediment retention basin;

- Sand and silt removal facilities, channels and manholes will be regularly maintained and the deposited silt and grit should be removed by the contractor, and at the onset of and after each rainstorm to ensure that these facilities area functioning properly;

- Manholes (including newly constructed ones) should be adequately covered or temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system;

- Vehicle wheel washing facilities should be provided at the site exit such that mud, debris, etc. deposited onto the vehicle wheels or body can be washed off before the vehicles are leaving the site area;

- Section of the road between the wheel washing bay and the public road should be paved to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains; and

- 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 sedimentation basins.

- 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 to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where 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 during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.

7.4.2 Sewage from Construction Workforce

7.4.2.1 In the event that the existing toilets at the Site are not available for use by the workers, chemical toilet(s) will be provided for workers during construction phase. All chemical toilets will be regularly cleaned and the night-soil will be collected and transported by a licensed Contractor to a Government Sewage Treatment Works facility for disposal. With this arrangement in place, adverse water quality impact is not expected.

7.4.3 Chemical Spillage

7.4.3.1 There would be chemicals to be used for carrying out construction activities. These may include surplus adhesives, spent paints, petroleum products, spent lubrication

oil, grease and mineral oil, spent acid and alkaline solutions/solvent and other chemicals. Accidental spillage of chemicals in the works areas can contaminate the surface soils. The contaminated soil particles may be washed away by construction site runoff or storm runoff causing water pollution.

7.4.3.2 In order to prevent accident spillage. It 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. Any service shop and minor maintenance facilities should be located outside the water gathering ground and should be on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken with the areas appropriately equipped to control these discharges.

7.4.3.3 Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. Emergency plans and clean up procedures should be provided before the commencement of the construction work to deal with accidental spillage of chemicals. Leakage and spillage of chemicals should be contained and cleaned up immediately so as to minimise the impact to the water quality. With proper arrangement and the emergency plans for accidental spillage of chemicals, no adverse water quality impact is anticipated

7.5 Potential Impact during Operation Phase

7.5.1 Domestic Sewage

7.5.1.1 During operation phase, domestic sewage including toilet flushing would be the major wastewater discharge arising from the Proposed Development. Since the Site is not served by any public sewer, sewage generated will be treated in the underground STP of the Proposed Development to acceptable standards before discharging into the existing drainage system near the Site.

7.5.1.2 A Sewerage Impact Assessment (SIA) has been conducted for the Proposed Development. The SIA report discussed the discharge standards to be fulfilled and proposed measures to alleviate the impact of the discharge amount on the existing drainage system. Environmental considerations and emergency measures were addressed as well to ensure there will be no adverse water quality impact arising from the STP operation. Furthermore, all stormwater/rainwater from the Site will be conveyed to the stormwater drain. With a properly designed and maintained of the proposed STP and drainage system, no insurmountable water quality impacts would be expected from operation of the Project.

7.5.2 Surface Runoff

7.5.2.1 Pesticides or fertilizers may be used for the maintenance of the landscape area on ground floor subject to the future operational need. This may cause contamination of the runoff by agrochemicals.

7.5.2.2 It is understood that under normal circumstances, any application of pesticides and fertilizers would only be on a need basis based on the health condition of the vegetation and usually at a localized scale. Only registered agrochemicals under the Pesticides Ordinance (Cap.133) shall be used and pesticides with shorter half-life is recommended. Common good practices of agrochemical application should also be followed, such as avoiding the use of agrochemicals before heavy rainstorms and following manufacturer's instructions on the application amount and frequency of the agrochemicals.

7.5.2.3 Potential water quality impact would be the surface runoff from the road surfaces or the open spaces, etc during rainfall events which is known as non-point source pollutions during operational phase. Substances such as dust and lubricant oil deposited and accumulated on the road surfaces will be washed into the drainage system, fish ponds or streams during rainfall. A particular concern with surface run-off will be the 'first flush' of the system during the early phase of storm. The largest quantities of contaminants will be contained within the 'first flush' and the high degree of turbulence in the drains may erode material deposited within the drains. Floating debris and rubbish may also be carried by the surface runoff and may enter and block the stormwater drains. Improper control of the surface runoff may also increase the risk of flooding. To address these issues, Best Management Practices (BMPs) for stormwater discharge will be implemented to minimize pollution. The performance of the permanent drainage system will be designed to comply with the relevant regulations (e.g. ProPECC PN 2/24). Thus, the potential flood risk is considered as minimal.

7.5.2.4 With the above-mentioned mitigation measures implemented, no adverse water quality impact is anticipated during both construction and operation phase.

8 Waste Management

8.1 Introduction

8.1.1.1 This section identifies the types of wastes that are likely to be generated during the construction and operation phases of the Project and evaluates the associated waste management implications that may result from these waste types.

8.2 Relevant Legislations, Standards and Guidelines

8.2.1.1 The relevant legislation and associated guidelines applicable to this environmental assessment for waste management implications include:

- Waste Disposal Ordinance (WDO) (Cap. 354);
- Waste Disposal (Chemical Waste) (General) Regulation;
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation; and
- Public Health and Municipal Services Ordinance (Cap. 132) – Public Cleansing and Prevention of Nuisances Regulation.

8.2.1.2 Other relevant documents and guidelines that are applicable to waste management and disposal in Hong Kong include:

- DEVB TCW No. 6/2010 Trip-ticket System for Disposal of Construction and Demolition Materials;
- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (Cap. 354 Section 35);
- Code of Practice on Asbestos Control; • Code of Practice Safety and Health at Work with Asbestos;
- Practice Note for Authorized Persons and Registered Structural Engineers – Construction and Demolition Waste (ADV-19); and
- ETWB TCW No. 19/2005 Environmental Management on Construction Sites.

8.3 Waste Disposal Implications during Construction Phase

8.3.1.1 Construction wastes are likely to be generated from the demolition, excavation and construction of structure works. Waste disposal during the construction stage will follow the trip ticket system and comply with legislation requirements including:

- Application for a billing account in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation under WDO; and

- Registration as a Chemical Waste Producer and storage/disposal of chemical wastes in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under WDO.

8.3.1.2 The following types of wastes are anticipated during the construction of the Proposed Development:

- Construction and Demolition (C&D) materials;
- Chemical waste; and
- General refuse.

8.3.2 Construction and Demolition Materials

8.3.2.1 C&D materials would be generated from demolition, excavation and construction activities during the course of the works. Waste-generating activities include excavation activities, concrete works and internal / external finishing works. Concrete debris and packaging material would also be produced.

8.3.2.2 All C&D materials generated shall be sorted into inert and non-inert portion of C&D materials. Where practicable, on-site SPS of inert portion of C&D materials shall be encouraged to minimise material volumes requiring off-site transport/ disposal. Disposal outlets such as public fill reception facilities shall be identified for inert C&D materials if no on-site reuse opportunities exist. Non-inert C&D materials should be re-used or recycled as far as possible. Landfill disposal should be considered as the last resort for non-inert C&D materials handling.

8.3.2.3 The Land (Miscellaneous Provisions) Ordinance requires that individuals or companies, who deliver inert C&D materials to the public fill reception facilities, must obtain Dumping Licences. The licences are issued by CEDD under delegated authority from the Director of Lands.

8.3.2.4 Disposal of C&D materials from the site to the public fill reception facilities and designated landfill shall be controlled under the trip-ticket system under the Development Bureau Technical Circular (Works) No. 6/2010 in order to minimise the incidence of illegal dumping.

8.3.3 Chemical Waste

8.3.3.1 The maintenance and servicing of construction plant and equipment may generate a small amount of chemical waste during construction works, such as cleaning fluids, solvents, lubrication oil and fuel.

8.3.3.2 Chemical wastes arising during the construction stage may pose environmental, health and safety hazards if not stored and disposed of in an appropriate manner as stipulated in the Waste Disposal (Chemical Waste) (General) Regulations. The potential hazards include:

- Toxic effects to workers;
- Adverse impacts on water quality from spills; and
- Fire hazards.

8.3.3.3 Materials classified as chemical wastes will require special handling and storage arrangements before removal for appropriate treatment at the Chemical Waste Treatment Centre (CWTC) or other licensed facilities. Wherever possible opportunities should be taken to reuse and recycle materials.

8.3.3.4 Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Waste published by the EPD. A trip-ticket system should be operated in accordance with the Waste Disposal (Chemical Waste) (General) Regulation to monitor all movements of chemical wastes which would be collected by licensed chemical waste collectors to a licensed facility for final treatment and disposal.

8.3.3.5 Provided that this occurs, and the chemical waste is disposed at a licensed chemical waste treatment and disposal facility, the potential environmental impacts arising from the storage, handling and disposal of a small amount of chemical waste generated from the construction activities will be negligible.

8.3.4 General Refuse

8.3.4.1 General Refuse, such as waste papers, food scraps and containers, will be generated during the construction of the Proposed Development. As a result, waste recycling for the generated refuse will be conducted during the construction phase. The general refuse will be collected on-site, separately from C&D materials by an appropriate waste collector employed by the contractor or relevant party to the landfills.

8.3.4.2 A covered storage area will be provided for the general refuse. This storage area will be cleaned regularly in order to avoid attracting vermin and pests. With proper onsite handling of these wastes, no adverse waste management implications associated with this waste type is expected.

8.4 Waste Disposal Implications during Operation Phase

8.4.1 Chemical Waste

8.4.1.1 Chemical wastes may be generated from the operation of the Project. The Proposed Development will be registered as Chemical Waste Producer when it produces chemical waste which falls under Schedule I of the Waste Disposal (Chemical Waste) (General) Regulation and will inform EPD in writing of any changes to the particulars of the registration including change of waste types, contact telephone number/ person, etc. As per the advice from SWD, the type of chemical waste includes dangerous drugs (unserviceable/expired and poison/non-poisonous) that mostly are the prescribed drugs for the service users and disinfectants and solvents that are used for cleaning.

8.4.1.2 The Proposed Development having in his possession chemical waste of a class, quantity or other description as prescribed in Part A of Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation shall give notice to the Director of Environmental Protection regarding such waste (using form EPD 132) at least 10

working days before disposal of Chemical Wastes prescribed in Part A of Schedule I of the Waste Disposal (Chemical Waste) (General) Regulation before any intended waste disposal operation.

8.4.1.3 The requirements given in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes should be followed, where applicable, in handling of these chemical wastes. A trip-ticket system should be operated in accordance with the Waste Disposal (Chemical Waste) (General) Regulation to monitor all movements of chemical wastes which would be collected by a licensed collector to a licensed facility for treatment and disposal.

8.4.2 Clinical Waste

8.4.2.1 Clinical wastes would be generated from the Proposed Development, such as sharps, dressing and other wastes dribbling and cakes with blood, etc. It is potentially infectious and bio-hazardous and shall be segregated from ordinary refuse and collected separately for proper disposal.

8.4.2.2 Storage, handling transport and disposal of clinical waste should be arranged in accordance with the Code of Practice for Small Clinical Waste Producers published by the EPD. The clinical wastes shall be collected by the Chemical Waste Treatment Centre (CWTC) or other licenced collectors.

8.4.2.3 According to the Waste Disposal (Clinical Waste) (General) Regulation, materials classified as clinical waste will require special handling and storage arrangement before transport for appropriate treatment at the Chemical Waste Treatment Facility (CWTF) for incineration. Therefore, the potential environmental impacts arising from the storage, handling and disposal of a small amount of clinical waste generated from the operation phase are expected to be minimal.

8.4.3 General Refuse

8.4.3.1 Municipal Solid Waste (MSW) are expected to be generated from the daily activities of staff, residents and visitors. The wastes from all floors will be collected and stored at the refuse collection point provided within the Site for further handling. A cleansing contractor will be employed to dispose the refuse to the nearest FEHD's refuse collection point. The waste management practice will comply with the statutory requirements.

8.4.3.2 With the implementation of good waste management practices at the site, the environmental impacts caused by storage, handling, transport and disposal of general refuse are expected to be minimal. As a result, there will be no adverse impacts brought by MSW.

8.5 Summary of Waste Materials

8.5.1.1 Based on the above, Table 8.1 summarized the waste generation during the construction and operation phases. In general, the inert portion of C&D materials

would be reused as backfilling as much as possible, and the remaining inert C&D materials should be disposed to public fill banks or other public filling areas while the non-inert portion should be sent to landfill for disposal. All waste disposals to landfill are always considered as a last resort. Any potential for reuse of materials on-site should be explored prior to disposal.

Table 8.1 Summary of Waste Generation

Material Type	Source(s)	Handling	Disposal/ Treatment	Estimated Quantity
Construction phase				
C&D materials	Demolition and building works	Sort on-site into inert C&D material (public fill) and non-inert C&D waste	Inert C&D material reused as backfilling materials on-site or to be disposed to public fill reception facilities or other beneficial uses	7,700 m^3
			Non-inert C&D waste (Comprising timber, paper, plastics, etc.) to be disposed of at landfill	1,500 m^3
Chemical waste	Cleansing fluids, solvents, lubricating oil and fuel from construction plant and equipment	Recycle on-site or by licensed companies and stored on-site in the designated containers	To Chemical Waste Treatment Facility or other licensed facility for treatment	13 L
General refuse	Waste paper, discarded containers, etc. generated from workforce	Provide on-site refuse collection points	Disposal to landfill	30 m^3
Operation phase				
Chemical Waste	Dangerous drugs, disinfectants and solvents	Stored in the designated area and collected by licensed companies	To Chemical Waste Treatment Facility or other licensed facility	A few litres per month
Clinical Waste	Sharps, dressing and other wastes dribbling and caked with blood	Collected regularly and safely stored at a dedicated location and collected by a licensed clinical waste collector	To Chemical Waste Treatment Facility	0.6 to 2 kg per month
General refuse	Food waste, paper waste and office waste, etc. generated from workforce, patients and visitors	Provide on-site refuse collection points and recycling bins	General Wastes: Disposal to landfill	0.3 to 0.6 m^3 per day
			Recyclable Wastes: To licensed waste collectors	

8.6 Recommended Waste Management Mitigation Measures

8.6.1.1 While potentially significant waste management impacts are not envisaged, given the potential for secondary impacts (e.g., dust, noise, water quality and visual impacts) mitigation measures are required to ensure proper waste handling, storage, transportation and disposal during the operation stage.

8.6.1.2 In line with Government's position on waste minimisation, the practice of avoiding and minimising waste generation and waste recycling should be adopted as far as practicable. Recommended mitigation measures to be implemented:

Construction Stage

- Soil generated from the excavation will need to be properly handled to minimise contamination to surface waters and any exposed ground areas due to leakage or improper storage (i.e. onto bare ground instead of into tanks);
- The reuse/ recycling of all materials on-site shall be investigated prior to treatment/ disposal off-site;
- Good site practices shall be adopted from the commencement of works to avoid the generation of waste, reduce cross contamination of waste and to promote waste minimisation;
- All waste materials shall be sorted on-site into inert and non-inert C&D materials, and where the materials can be recycled or reused, they shall be further segregated. Inert material, or public fill will comprise stone, rock, masonry, brick, concrete and soil which is suitable for land reclamation and site formation whilst non-inert materials include all other wastes generated from the construction process such as plastic packaging and vegetation (from site clearance);
- The Contractor shall be responsible for identifying what materials can be recycled/ reused, whether on-site or off-site. In the event of the latter, the Contractor shall make arrangements for the collection of the recyclable materials. Any remaining non-inert waste shall be collected and disposed of at landfill whilst any inert C&D materials shall be reused on-site as far as possible. Alternatively, if no use of the inert material can be found on-site, the materials can be delivered to a Public Fill Area or Public Fill Bank after obtaining the appropriate license. The storage, handling, transportation and disposal of C&D materials shall be conducted in accordance with the ETWB TCW No. 19/2005, Environmental Management on Construction Sites;
- Under the Waste Disposal (Chemical Waste) (General) Regulation, the Contractor shall register as a Chemical Waste Producer if chemical wastes such as spent lubricants and paints are generated on-site. Only licensed chemical waste collectors shall be employed to collect any chemical waste generated at site. The handling, storage, transportation and disposal of chemical wastes shall be conducted in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and a Guide to the Chemical Waste Control Scheme both published by EPD;
- A sufficient number of covered bins shall be provided on-site for the containment of general refuse to prevent visual impacts and nuisance to the sensitive surroundings. These bins shall be cleared daily and the collected waste disposed of to the refuse transfer station. Further to the issue of ETWB TCW No. 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness,

the Contractor is required to maintain a clean and hygienic site throughout the project works;

- Tool-box talks should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling; and
- The Contractor shall comply with all relevant statutory requirements and guidelines and their updated versions that may be issued during the course of construction.

Operation Stage

- Waste reduction and management including the provision of recycling bins and adequate space to facilitate separation, collection and storage of recyclable materials for recycling in the Refuse Storage and Material Recovery Chamber will be implemented.
- Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.
- The packaging of the containers of clinical wastes will be effectively sealed on-site and checked to ensure their integrity after movement. Plastic bags will be properly labelled and handled by swan-neck sealing method and body contact with clinical waste should be avoided. All personnel involved in handling of clinical waste and all clean-up operation will be properly trained and be fully aware of the safety requirements and hence to protect the public from potential exposure to the wastes. The clinical waste storage should implement the following measures:
    - Exhibits a warning sign to alert all personnel;
    - Maintains waste in a non-putrescent state;
    - Affords protection from rain, heat and flooding;
    - Maintains clean, well-lit and ventilated;
    - Exhibits a warning sign to alert all personnel;
    - Maintains waste in a non-putrescent state;
    - Affords protection from rain, heat and flooding;
    - Maintains clean, well-lit and ventilated;
    - Keep secure from unauthorized persons, birds, rodents, insects and other animals; and
    - Conveniently accessible to collection vehicles.
- Waste reduction and management including the provision of recycling bins and adequate space to facilitate separation, collection and storage of recyclable materials for recycling in the Refuse Storage and Material Recovery Chamber will be implemented.

9 Land Contamination

9.1 Introduction

9.1.1.1 This section discusses the potential hazardous risks or detrimental effects due to land contamination as a result of industrial or commercial operations carried out on and around the Project Site over a number of years and currently.

9.2 Relevant Guidelines

9.2.1.1 The guidelines related to land contamination studies published by the EPD are as follows:

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

9.3 Site Conditions

9.3.1.1 A site survey is conducted on 10 June 2024 to identify the source of potential land contamination. The site walkover checklist and inspection photos are provided in Appendix J. Also, from the review of aerial photos provided by the Survey and Mapping Office, Lands Department, it is observed that there are no previous land uses within the Site. Hence, there should be no land contamination issues arising from past land uses and further assessment is not required. The reviewed aerial photos are listed in Table 9.1 and provided in Appendix H.

Table 9.1 Summary of Aerial Photograph Review

Year	Reference No.	Description
1964	1964-3185	The Site was vacated.
1981	36653	The land use remains unchanged
2003	CW52549	The land use remains unchanged
2013	CW103750	The land use remains unchanged
2022	E154990C	The land use remains unchanged
2023	E189302C	The land use remains unchanged

9.3.1.2 Upon reviewing historical aerial photographs and conducting a site survey, it was observed that the site is vacant and devoid of any land use activities. Consequently, land contamination issues are not anticipated at the project site.

10 Conclusion

10.1.1.1 The Environmental Assessment (EA) is prepared to identify all potential environmental impacts and relevant environmental requirements due to the operation of the Proposed Development.

10.1.1.2 As there will be no burners/furnace provided in the Proposed Development, no adverse air quality impact to the surrounding air sensitive uses is anticipated. There is no chimney emission found within the 500m study area, no unacceptable air quality impact arising from industrial emissions on the Proposed Development is anticipated.

10.1.1.3 The traffic noise impacts were assessed based on the projected peak hour flows for the worst year within 15-year from the day of occupancy. The predicted traffic noise levels at all noise sensitive uses can comply with the HKPSG standard of 70 dB(A) with the installation of the proposed acoustic windows. Therefore, no adverse traffic noise impact is anticipated.

10.1.1.4 Fixed source noise impacts from the surrounding fixed noise sources were assessed. Based on the development layout, the fixed noise sources adjacent to the Proposed Development should not pose unacceptable impacts on the identified noise sensitive receivers. Mitigation measures will be implemented on the potential fixed plant noises within the Proposed Development during operation phase, as well, to minimize noise impacts on the existing noise sensitive receivers.

10.1.1.5 Construction works of the project will also be conducted within regulated period. Mitigation measures have been proposed to further reduce the construction noise. Therefore, there shall be no adverse construction noise impact upon the surrounding NSRs.

10.1.1.6 Regarding the water quality during construction stage, good site practices, effluent discharge guidelines, and water pollution control measures will be followed and carried out. For operation stage, the sewage generated from the Proposed Development will be treated in the proposed sewage treatment plant and then discharged into the public box culvert on the northwest of the Site along Tai Po Road – Tai Po Kau. Hence, no adverse water quality impact is anticipated.

10.1.1.7 The potential impacts of waste arising from construction and operation phases of the Proposed Development have been assessed. With the implementation of waste management measures, waste generated/disposed of the Proposed Development should not lead to any adverse impact.

10.1.1.8 Based on the review of aerial photos, it is confirmed that there were no previous industrial or commercial operations at the Site. Thus, no potential risks due to land contamination are anticipated.

10.1.1.9 In conclusion, there should be no unacceptable environmental impacts on the Proposed Development. Therefore, it is concluded that the Proposed Development is considered to be environmentally acceptable from the environmental planning point of view.

Figures

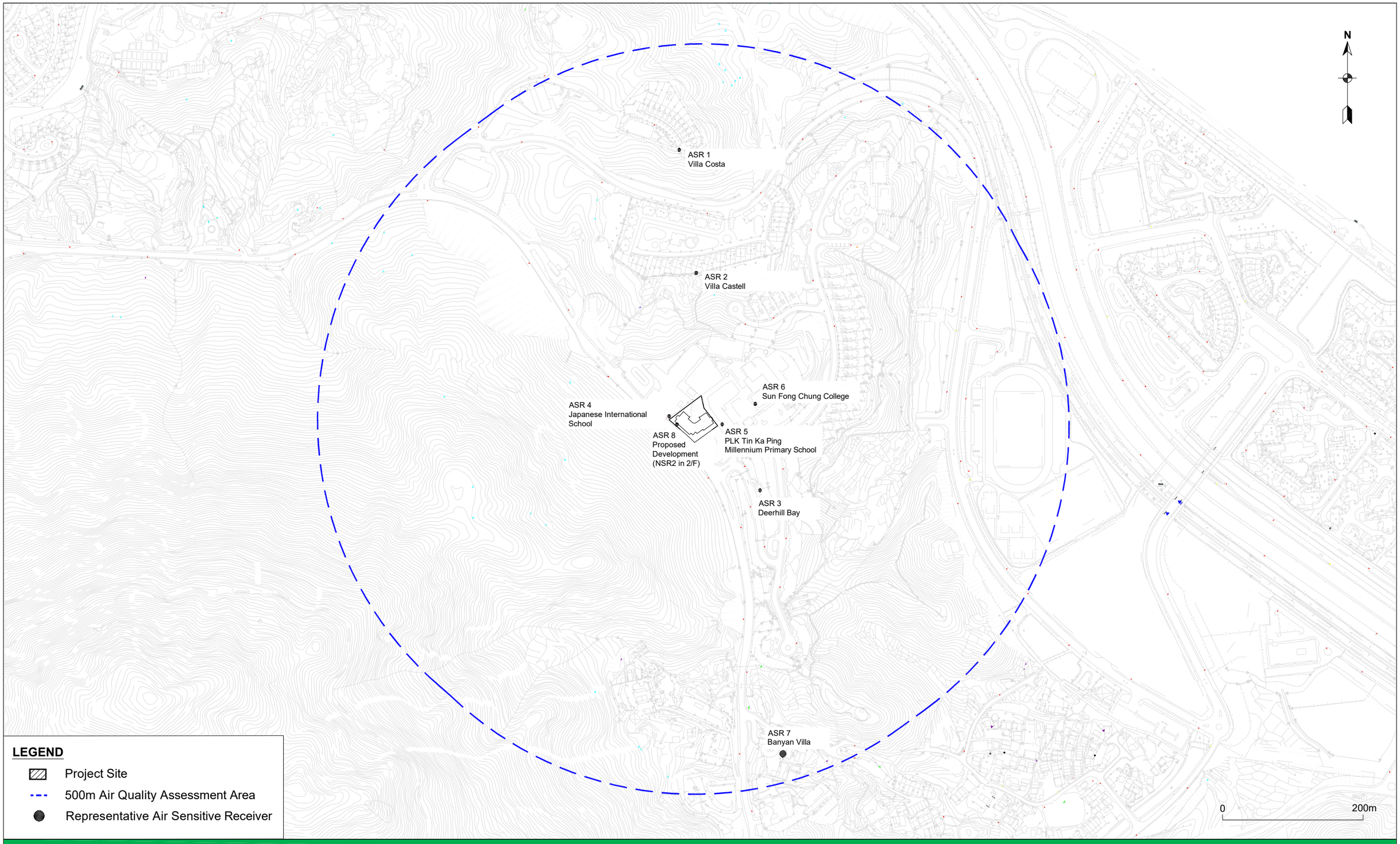
Proposed Development of Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 In D.D.34. Tai Po

Site Location and Its Environs

Figure 2.1

Rev. 0

URBAN GREEN



URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

Location of Air Sensitive Receiver

Figure 3.1

Rev. 1

N

5m Buffer Distance

LEGEND

- Project Site
- Buffer distance of road

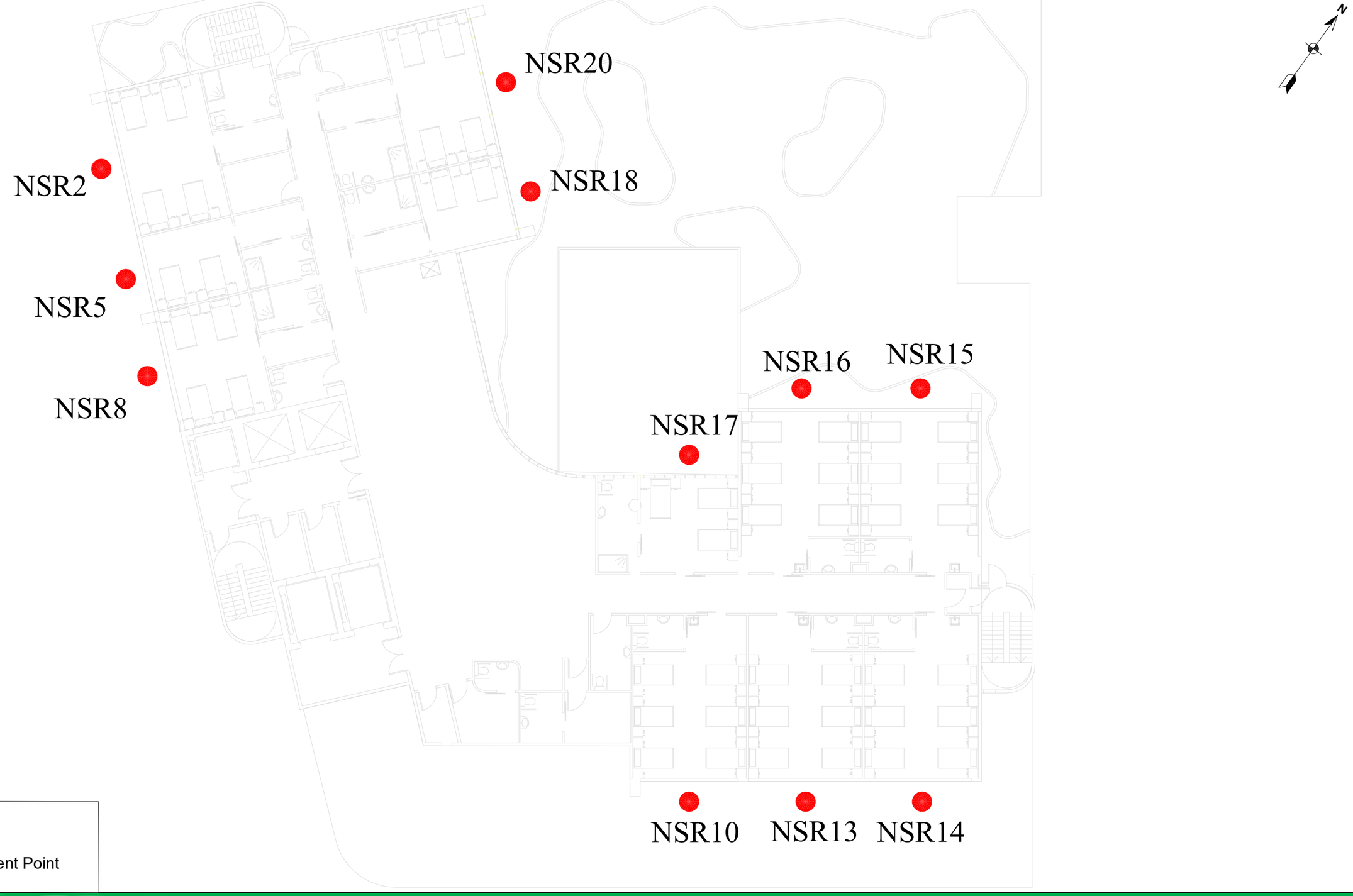
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

Buffer Distance of Surrounding Roads

Figure 3.2

Rev. 0



Legend

Assessment Point

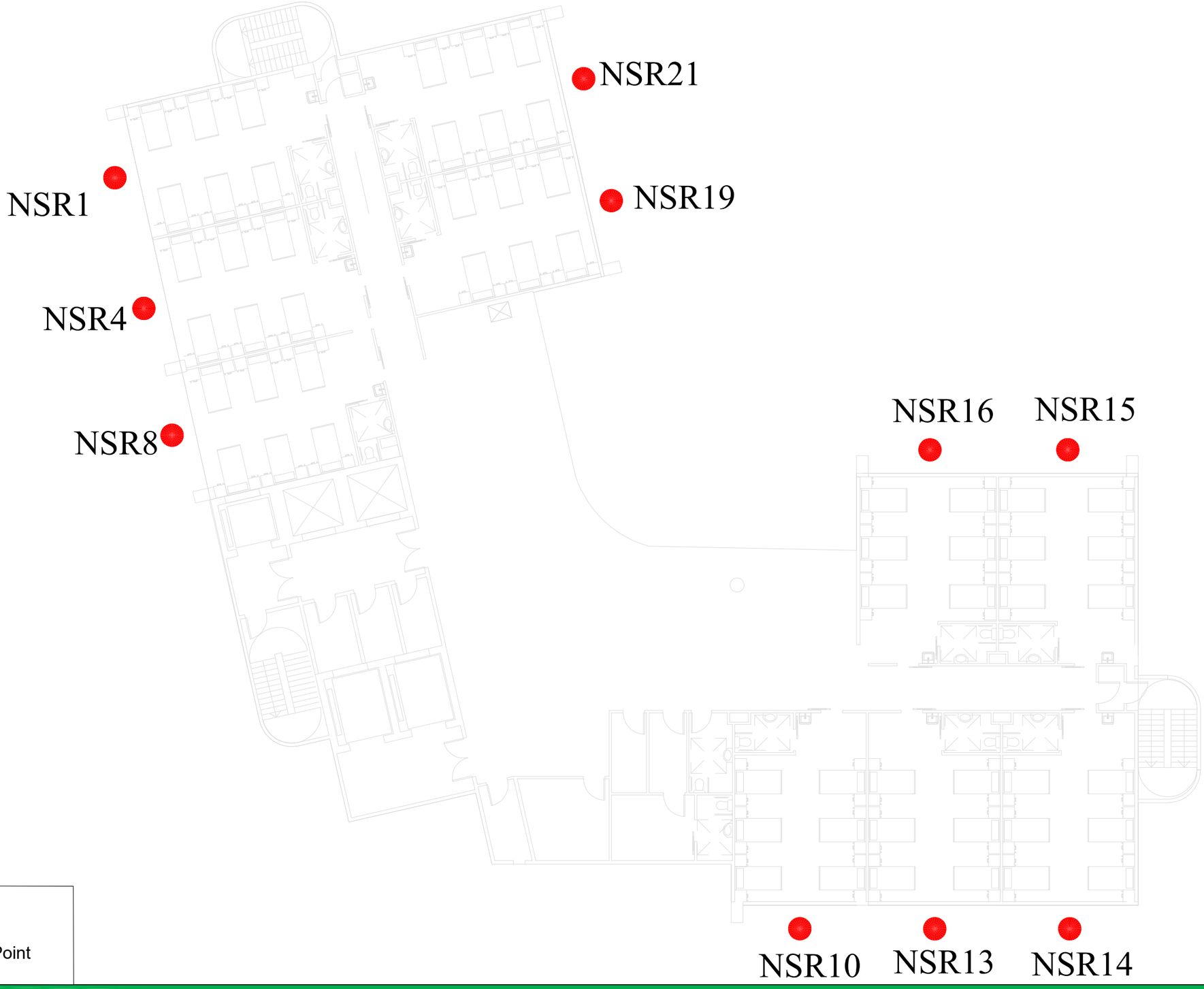
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord lot No. T77 in D.D. 34 Tai Po

Location of Noise Sensitive Receiver (2/F)

Figure 4.1a

Rev. 0



Legend

Assessment Point

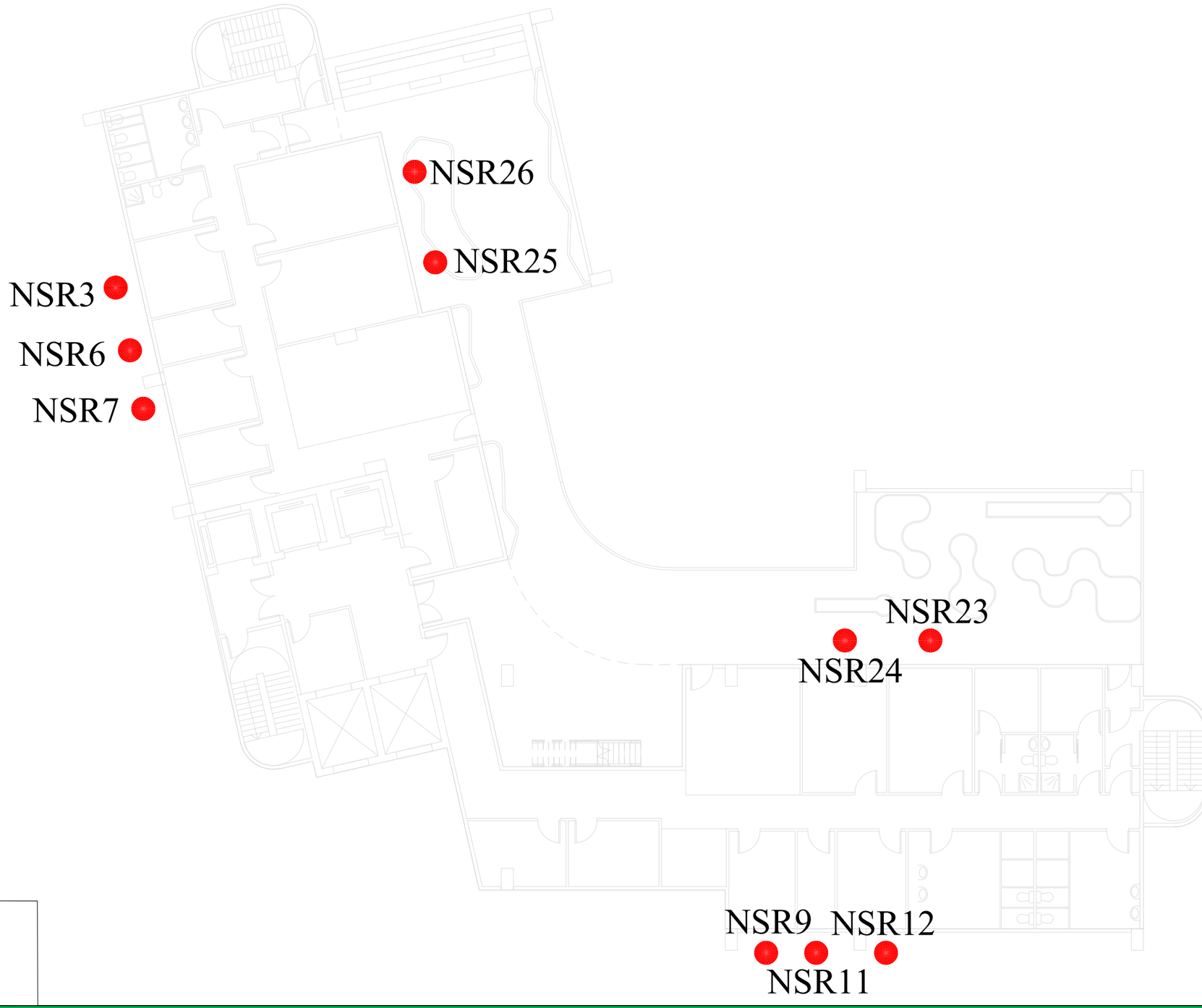
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord lot No. T77 in D.D. 34 Tai Po

Location of Noise Sensitive Receiver (3/F-6/F)

Figure 4.1b

Rev. 0



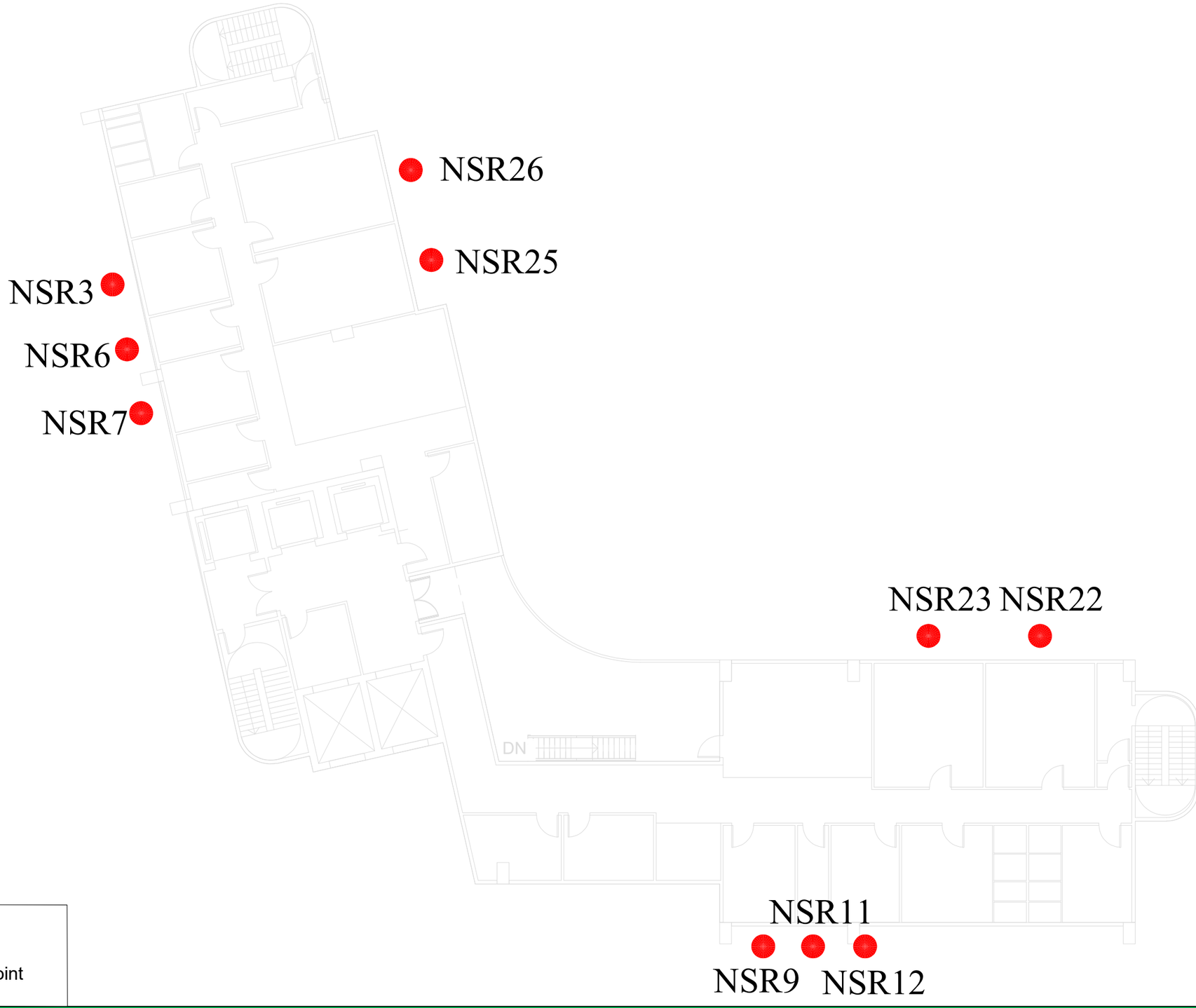
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord lot No. T77 in D.D. 34 Tai Po

Location of Noise Sensitive Receiver (8/F)

Figure 4.1c

Rev. 0



Legend

Assessment Point

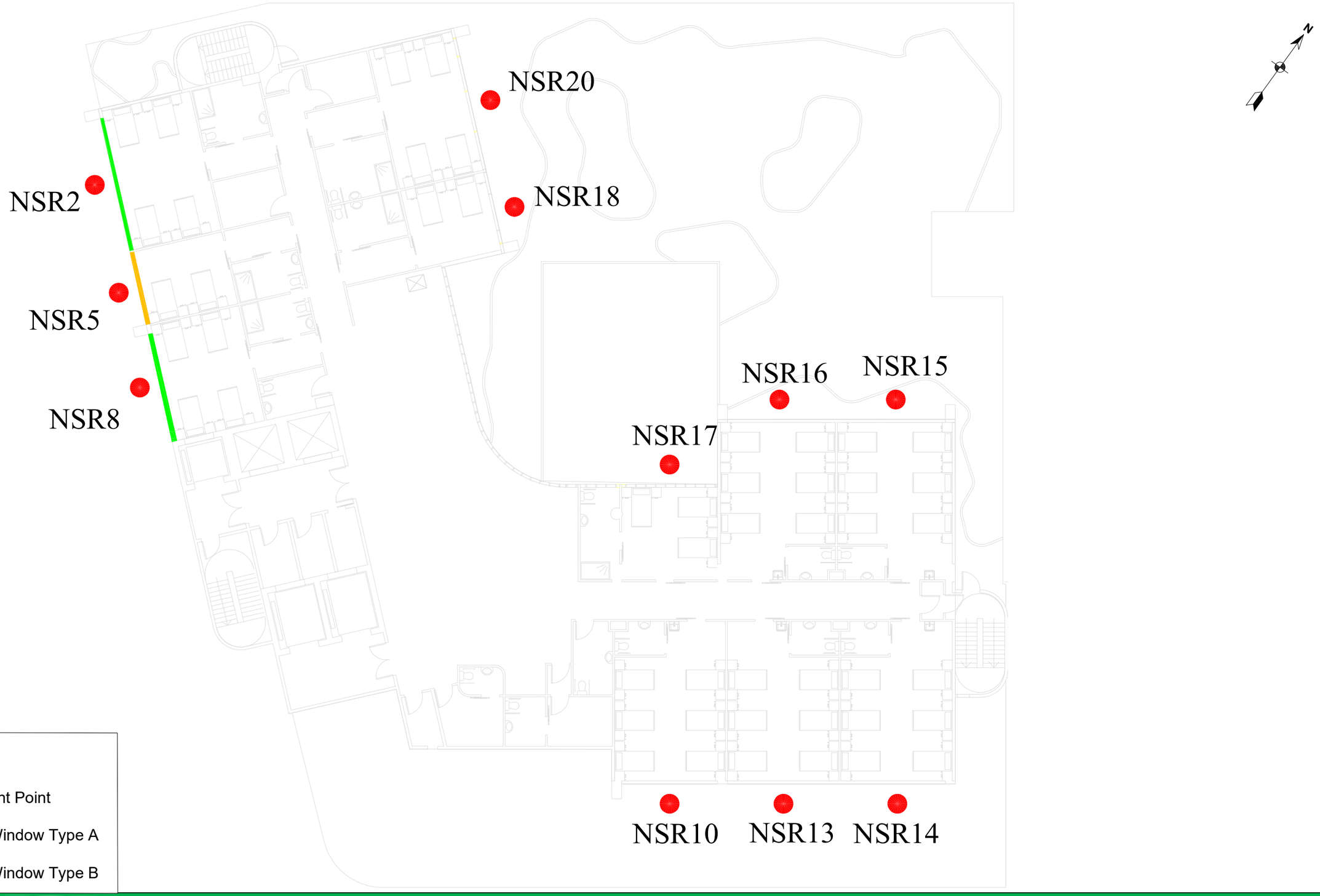
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord lot No. T77 in D.D. 34 Tai Po

Location of Noise Sensitive Receiver (9/F)

Figure 4.1d

Rev. 0



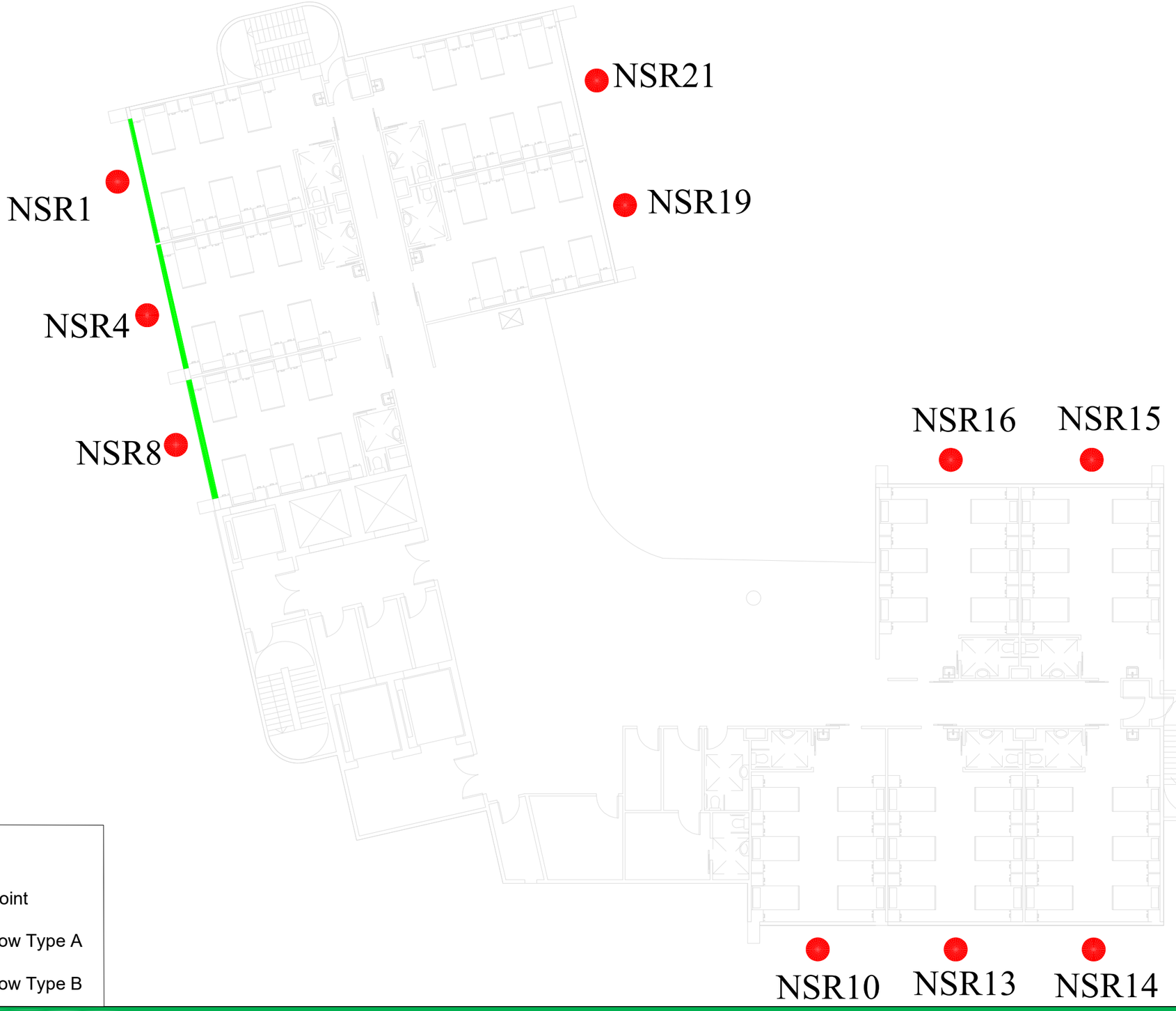
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord lot No. T77 in D.D. 34 Tai Po

Location of Noise Mitigation Measures (2/F)

Figure 4.2a

Rev. 0



Legend

- Assessment Point
- Acoustic Window Type A
- Acoustic Window Type B

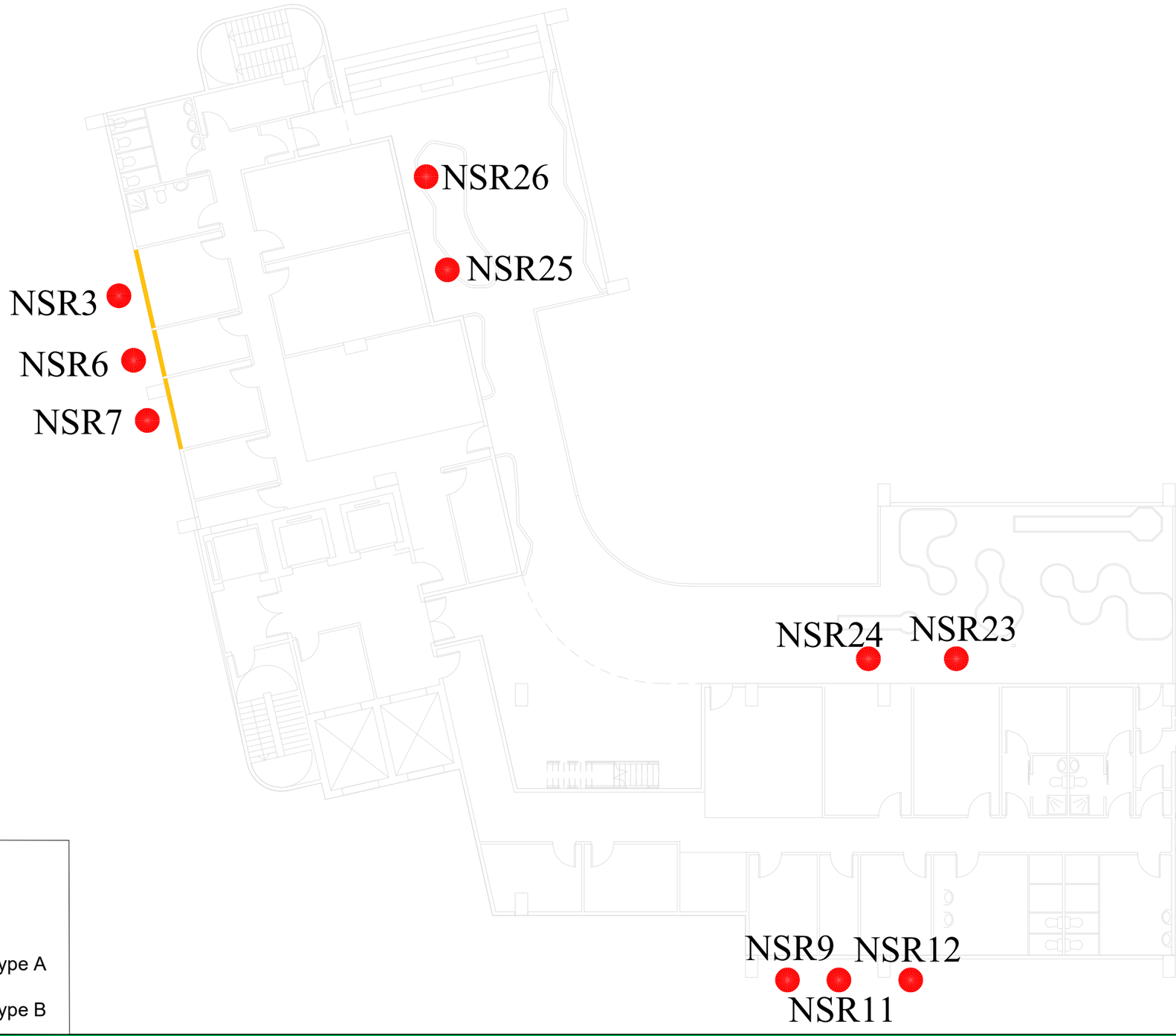
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord lot No. T77 in D.D. 34 Tai Po

Location of Noise Mitigation Measures (3/F-6/F)

Figure 4.2b

Rev. 0



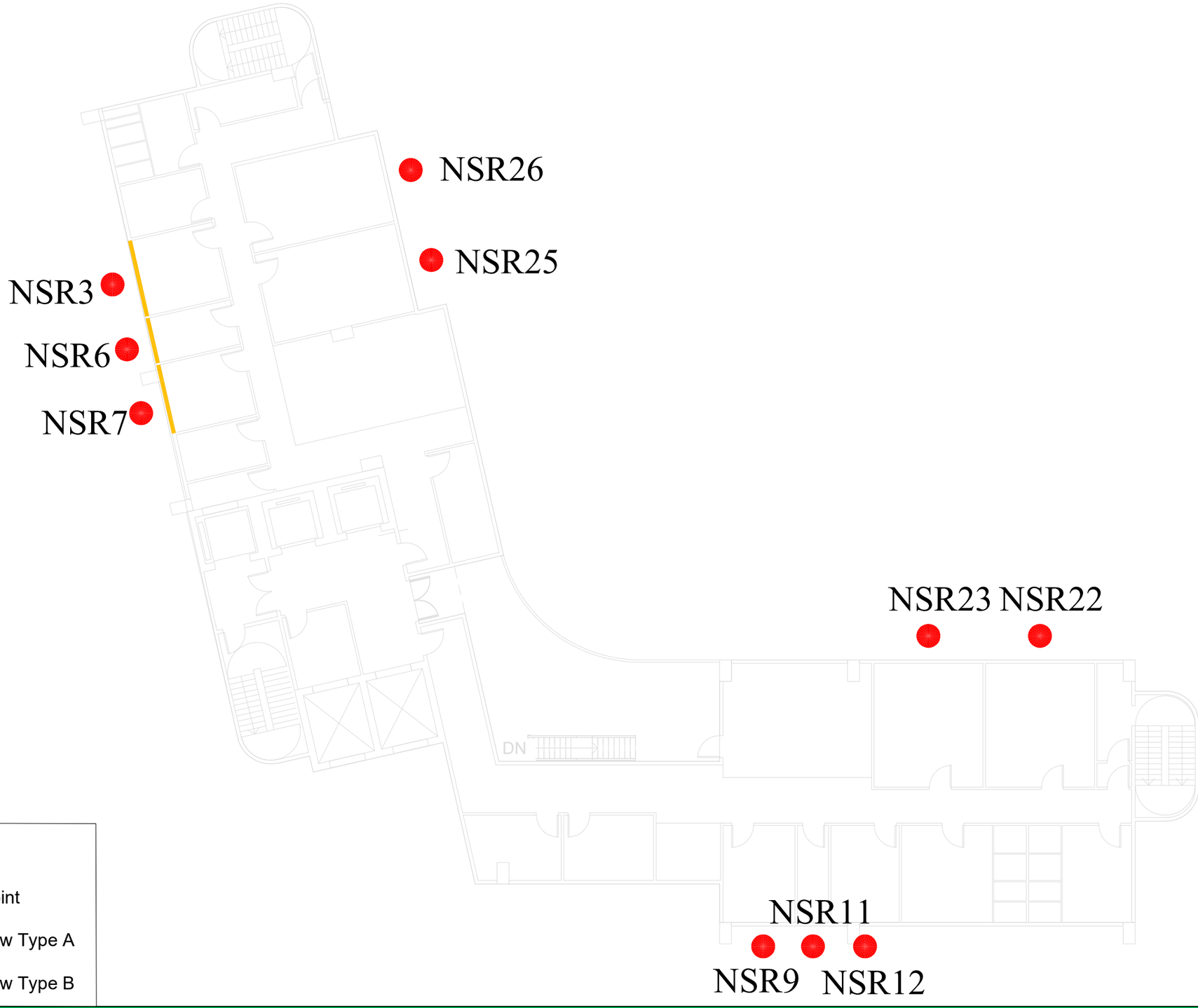
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord lot No. T77 in D.D. 34 Tai Po

Location of Noise Mitigation Measures (8/F)

Figure 4.2c

Rev. 0



Legend

- Assessment Point
- Acoustic Window Type A
- Acoustic Window Type B

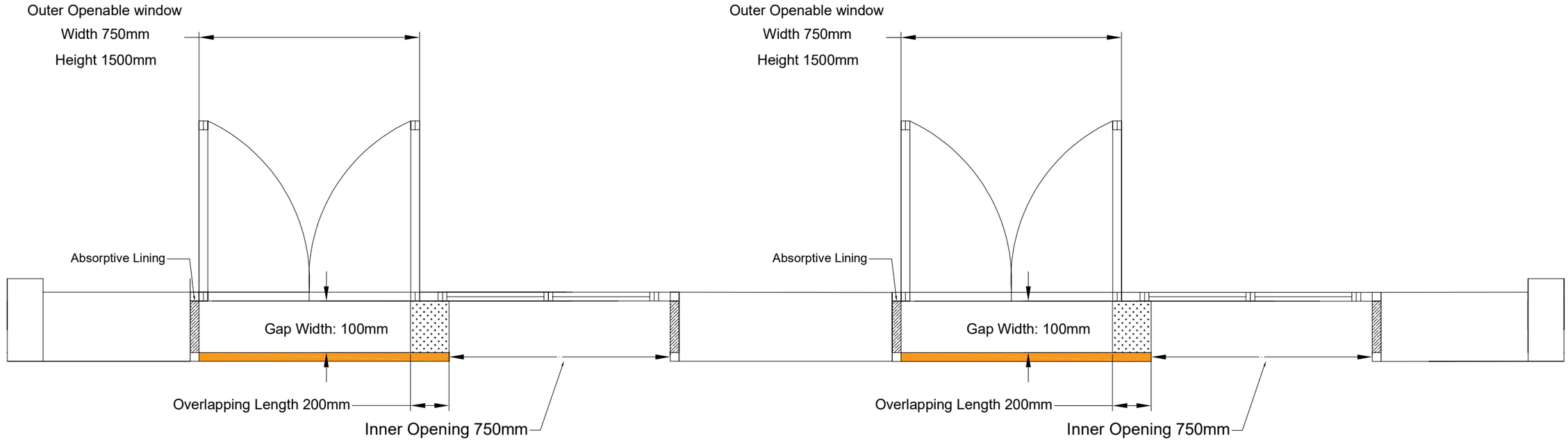
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord lot No. T77 in D.D. 34 Tai Po

Location of Noise Mitigation Measures (9/F)

Figure 4.2d

Rev. 0



Legend

Sliding Window

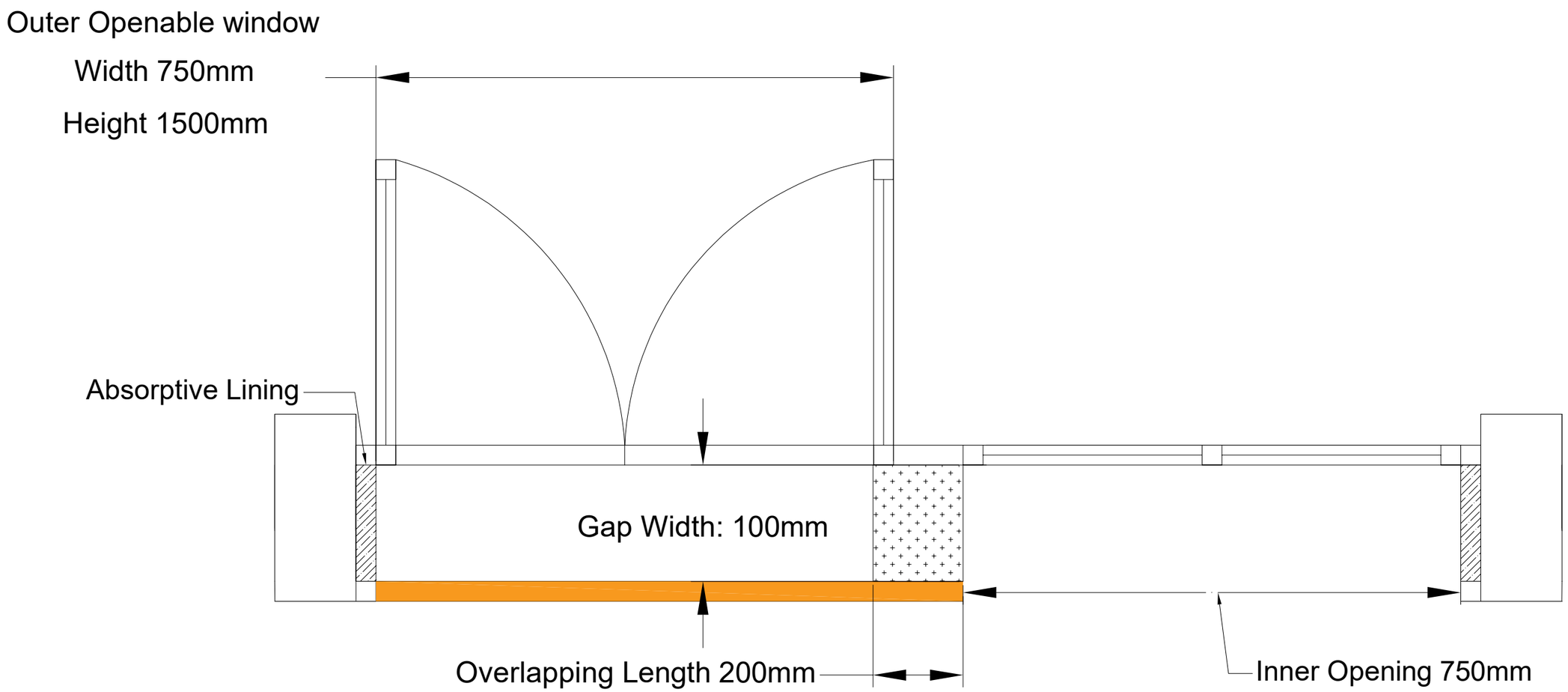
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

Configuration of **Type A** Acoustic Window (Baffle Type)

Figure 4.3a

Rev. 0



Legend

Sliding Window

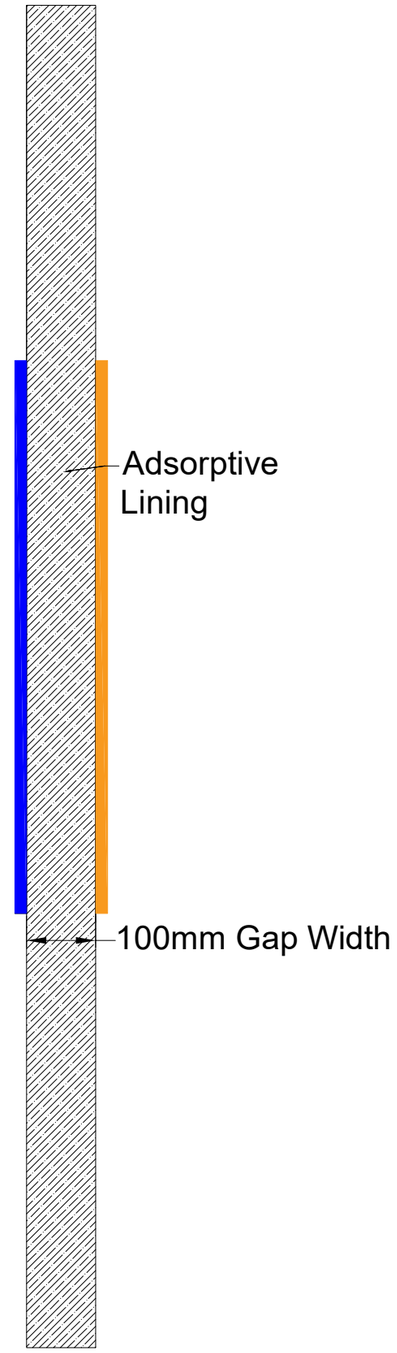
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

Configuration of **Type B** Acoustic Window (Baffle Type)

Figure 4.3b
Rev. 0

Side View



Legend

- Openable Window
- Sliding Window

URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

Acoustic Window (Side View)

Figure 4.3c

Rev. 0

LEGEND

- Project Site
- Proposed Low Noise Surface Road

URBAN GREEN

Proposed Development of Hong Kong Sheung Kung St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

Location of Proposed Low Noise Surface Road

Figure 4.4

Rev. 0

N

N1
Japanese International School

N2
PLK Tin Ka Ping Millennium
Primary School

N3
Deerhill Bay

LEGEND

- Project Site
- Representative Noise Sensitive Receiver
- N1 Noise Measurement Point
- 300m Noise Study Area

0 200m

URBAN GREEN

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po

Location of Representative Noise Sensitive Receiver and Noise Measurement Point

Figure 5.1

Rev. 0

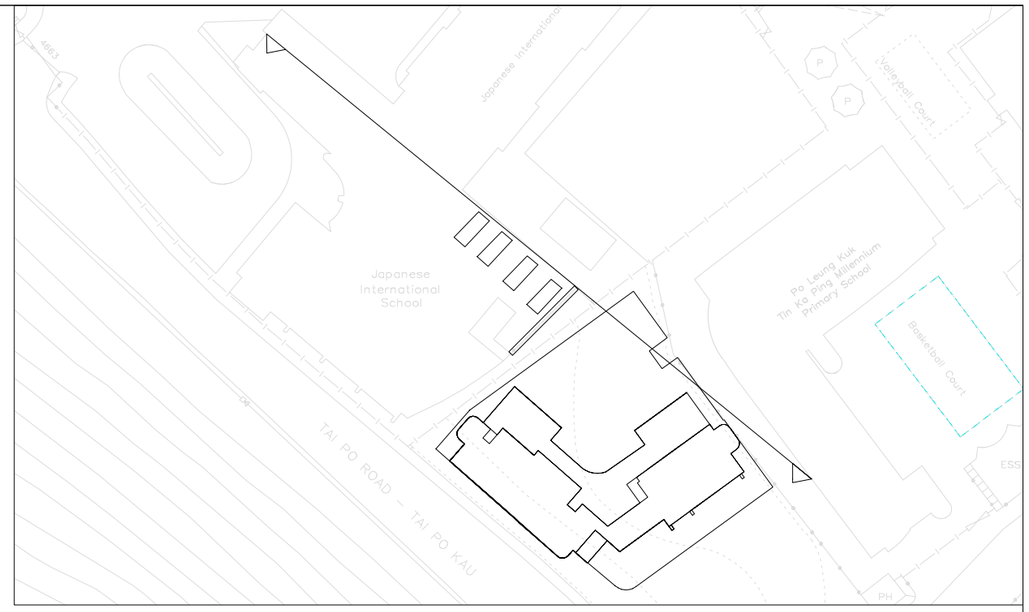
URBAN GREEN

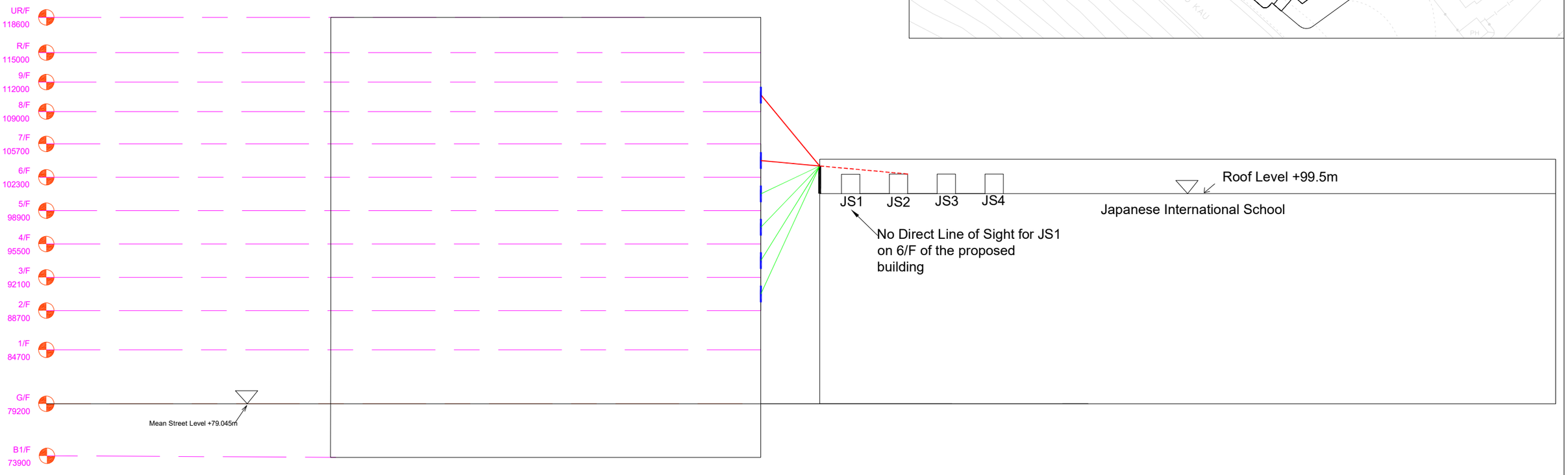
Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlor Lot No. T77 in D.D.34 Tai Po

Location of Fixed Plant Sources

Figure 5.2

Rev. 0





Legend

- Line of Sight (Direct)
- Line of Sight (In Direct)
- Barrier

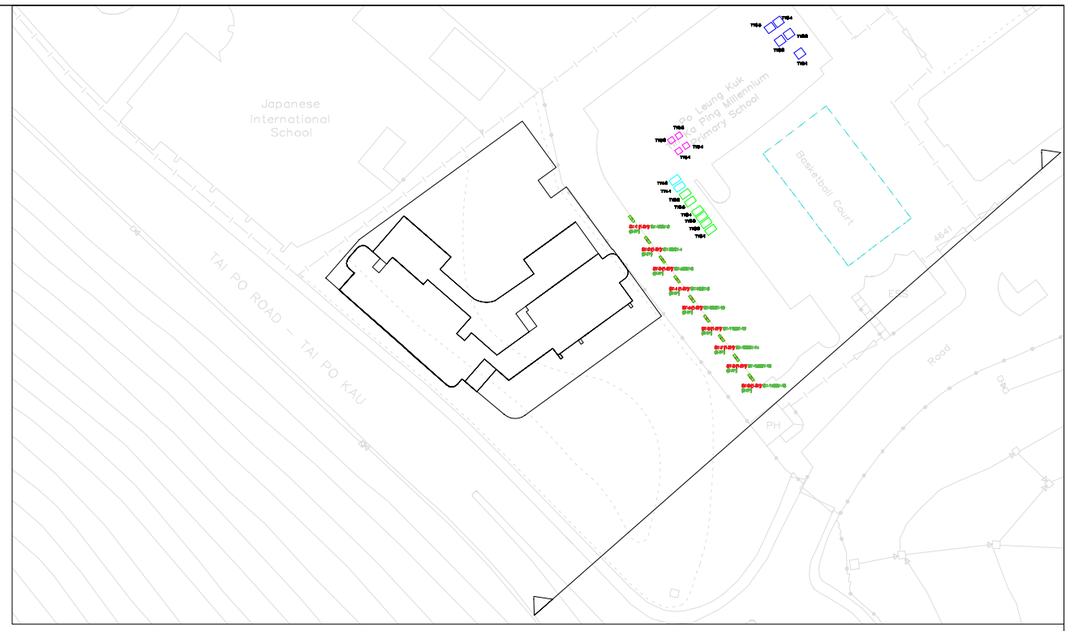
URBAN GREEN

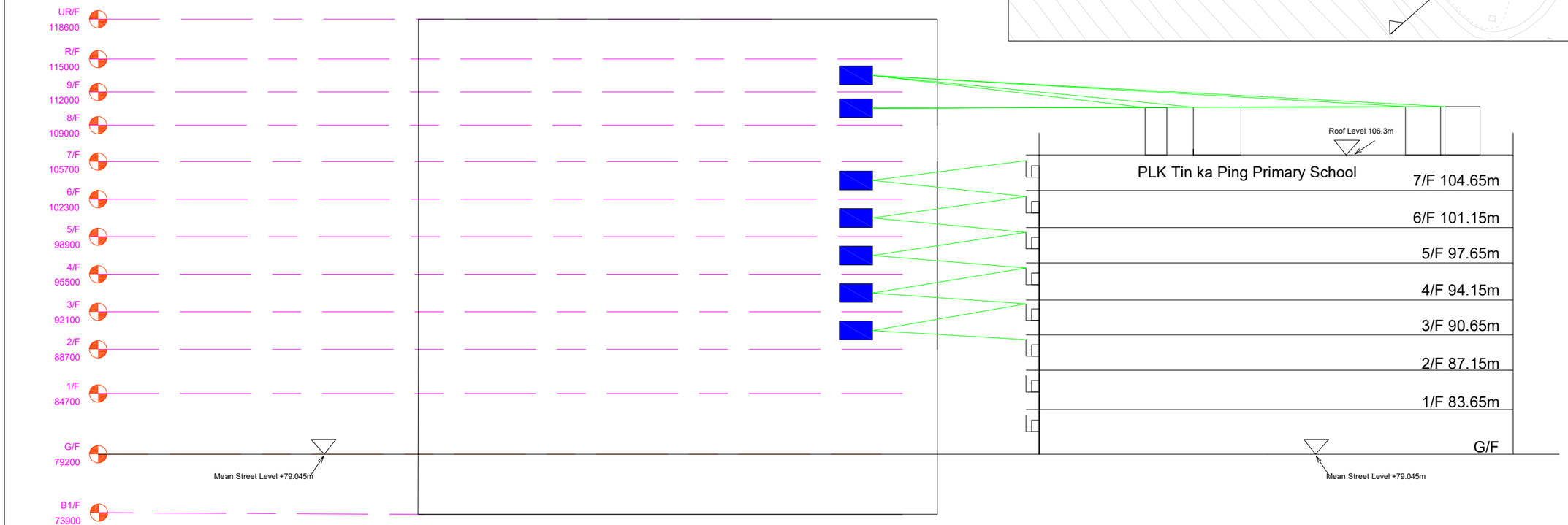
Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

Cross-Section Diagram (Japanese International School)

Figure 5.3

Rev. 0





Legend

Line of Sight (Direct)

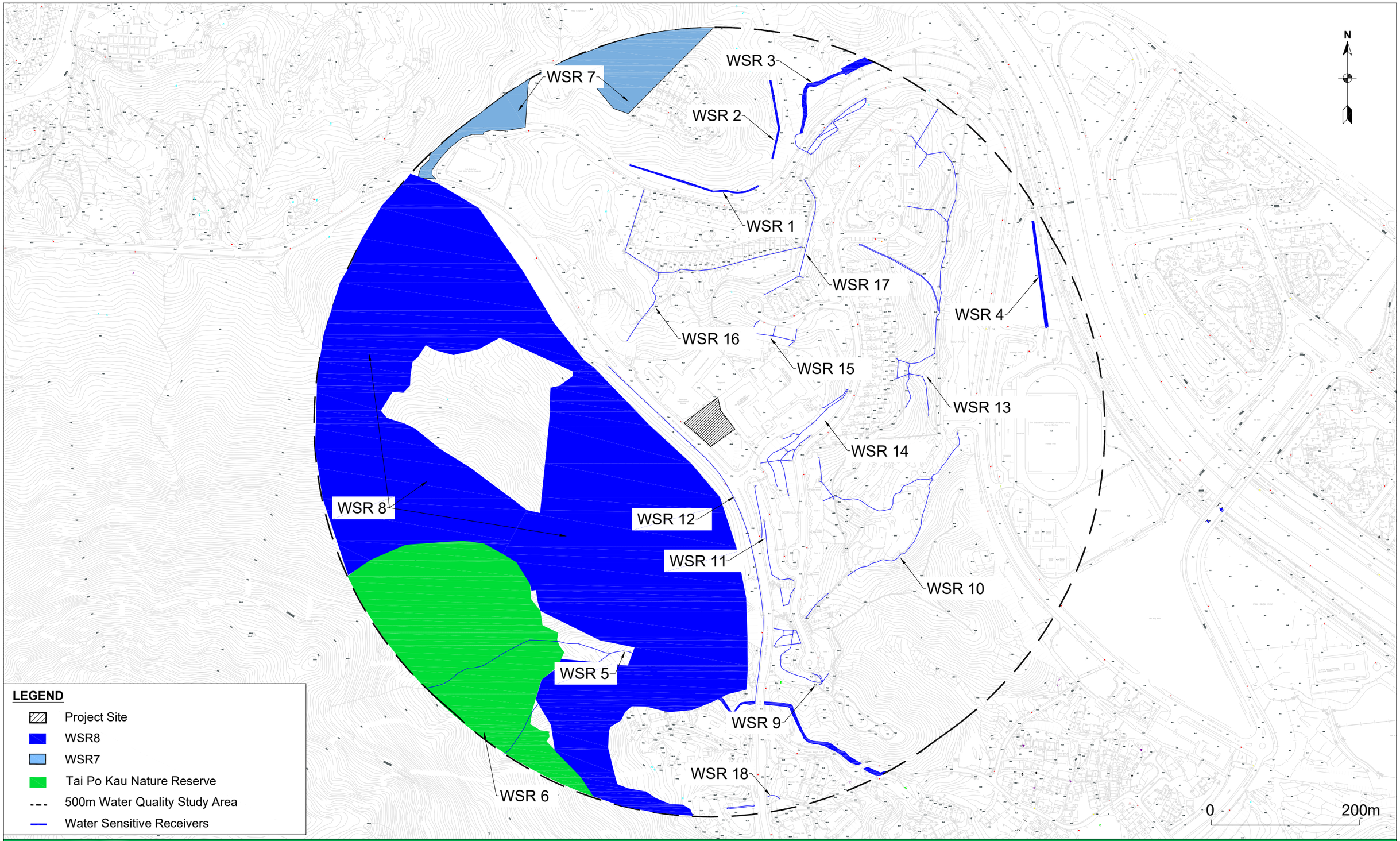
URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

Cross-Section Diagram (PLK Tin Ka Ping Millennium Primary School)

Figure 5.4

Rev. 0



URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

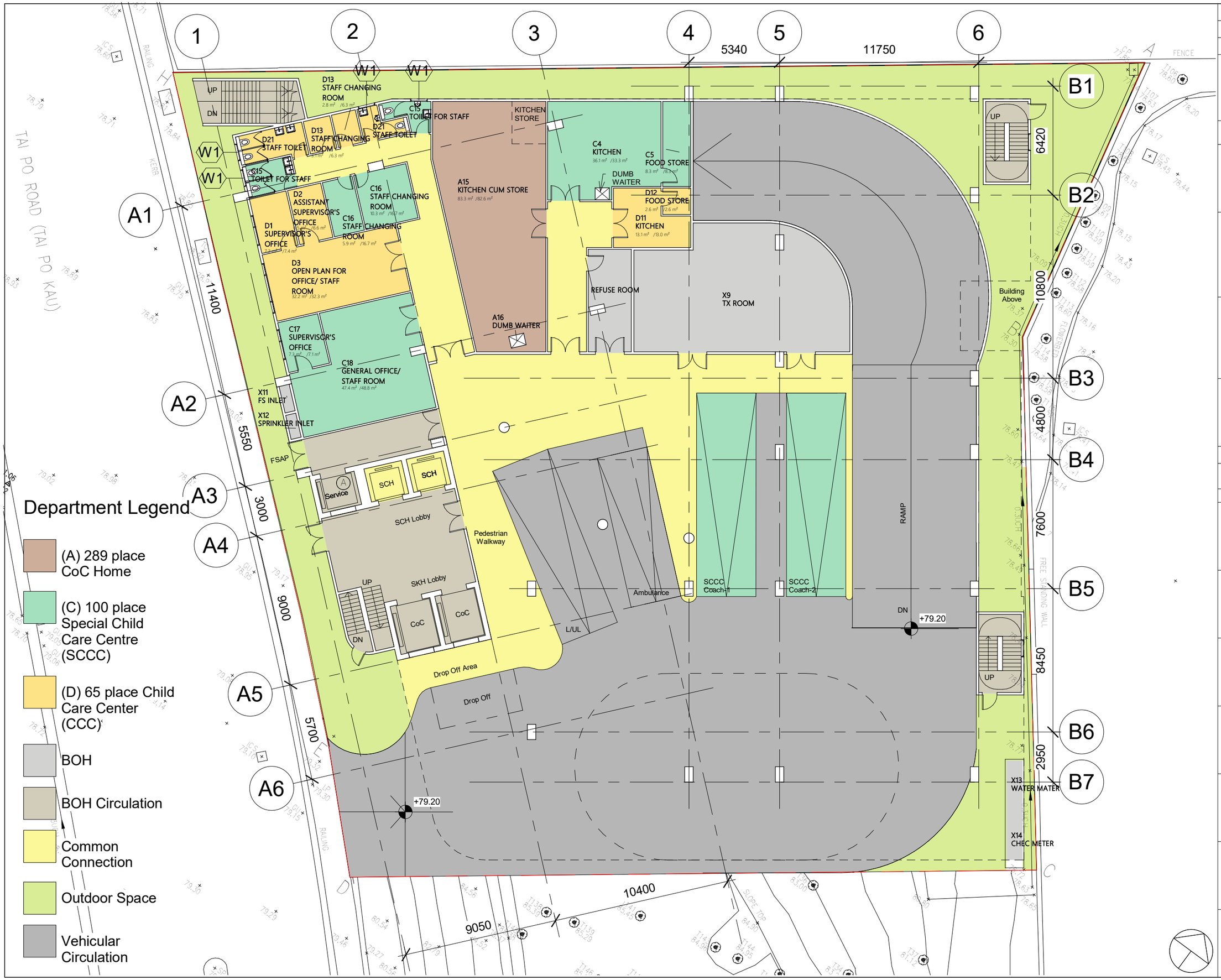
Location of Water Sensitive Receiver

Figure 7.1

Rev. 1

Appendix A

Proposed Layout Plan



Department Legend

- (A) 289 place CoC Home
- (C) 100 place Special Child Care Centre (SCCC)
- (D) 65 place Child Care Center (CCC)
- BOH
- BOH Circulation
- Common Connection
- Outdoor Space
- Vehicular Circulation

BD REF -

BIM REF -

FSD REF -

Rev.	Date	Amendment	Purpose

PROJECT NO.: HKA-P-01757

CLIENT
Hong Kong Sheng Kung Hui Welfare Council Limited

PROJECT
TFS for The Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex

DRAWING TITLE
GF Plan

SCALE 1 : 200 @A3

DRAWING NO. A001

ISSUE DATE 07/03/24

LEAD CONSULTANT & ARCHITECT
LWK +PARTNERS

BUILDING SERVICES ENGINEER
WSP Hong Kong Limited

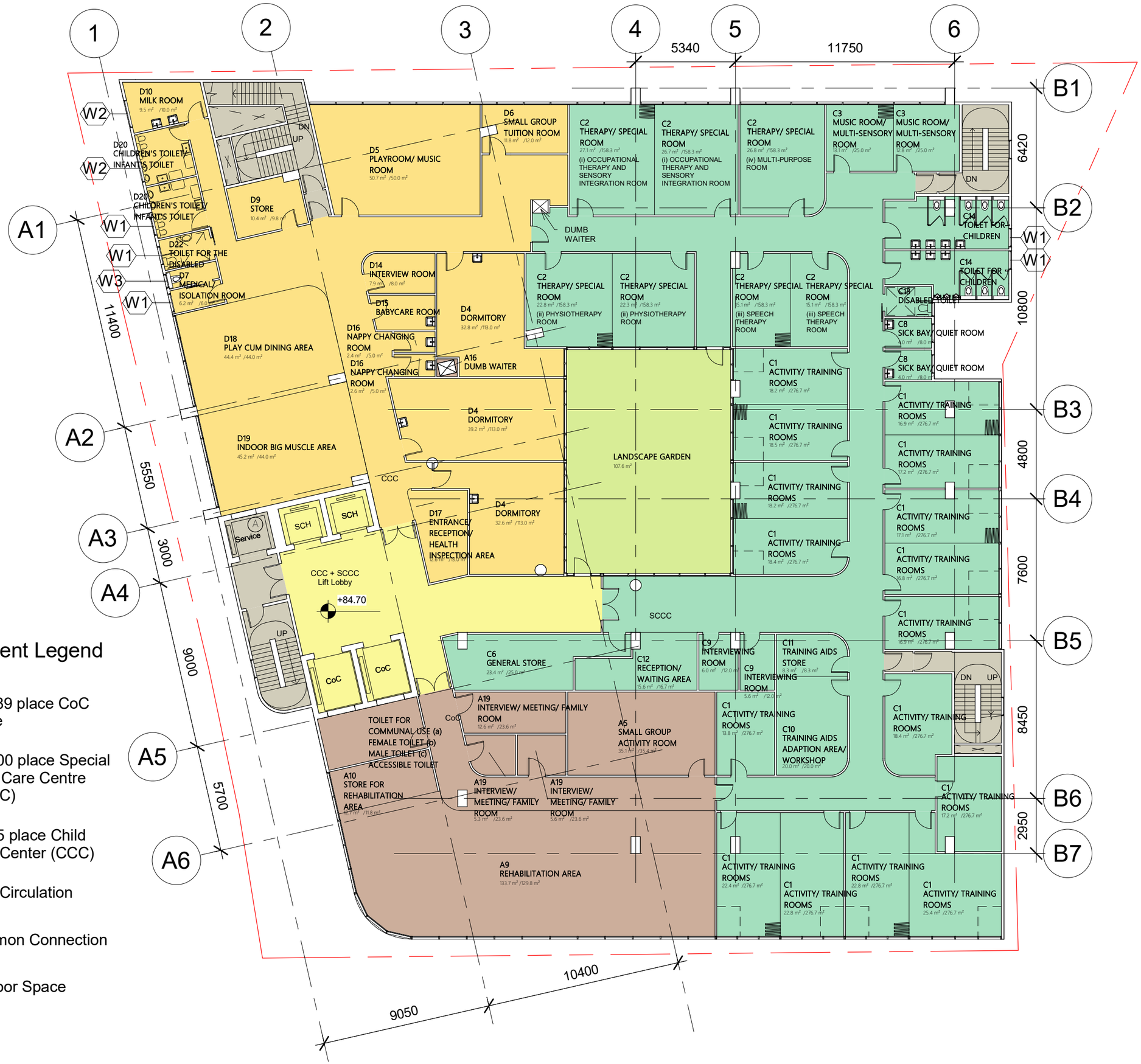
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

TRAFFIC ENGINEER
Ho Wang SPB Limited

ENVIRONMENTAL CONSULTANT
Urban Green Consultants Limited

QUANTITY SURVEYOR
Rider Levett Bucknall Ltd

LANDSCAPE ARCHITECT
Otherland Limited



Department Legend

- (A) 289 place CoC Home
- (C) 100 place Special Child Care Centre (SCCC)
- (D) 65 place Child Care Center (CCC)
- BOH Circulation
- Common Connection
- Outdoor Space

BD REF -

BIM REF -

FSD REF -

Rev.	Date	Amendment	Purpose

PROJECT NO.: HKA-P-01757

CLIENT
Hong Kong Sheng Kung Hui Welfare Council Limited

PROJECT
TFS for The Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex

DRAWING TITLE
1F Plan

SCALE 1 : 200 @A3

DRAWING NO. A002

ISSUE DATE 16/02/24

LEAD CONSULTANT & ARCHITECT
LWK +PARTNERS

BUILDING SERVICES ENGINEER
WSP Hong Kong Limited

STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

TRAFFIC ENGINEER
Ho Wang SPB Limited

ENVIRONMENTAL CONSULTANT
Urban Green Consultants Limited

QUANTITY SURVEYOR
Rider Levett Bucknall Ltd

LANDSCAPE ARCHITECT
Otherland Limited

Department Legend

- (A) 289 place CoC Home
- BOH Circulation
- Common Connection
- Outdoor Space

BD REF -

BIM REF -

FSD REF -

Rev.	Date	Amendment	Purpose

PROJECT NO.: HKA-P-01757

CLIENT

Hong Kong Sheng Kung Hui Welfare Council Limited

PROJECT

TFS for The Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex

DRAWING TITLE

2F Plan

SCALE 1 : 200 @A3

DRAWING NO. A003

ISSUE DATE 15/01/24

LEAD CONSULTANT & ARCHITECT

LWK +PARTNERS

BUILDING SERVICES ENGINEER
WSP Hong Kong Limited

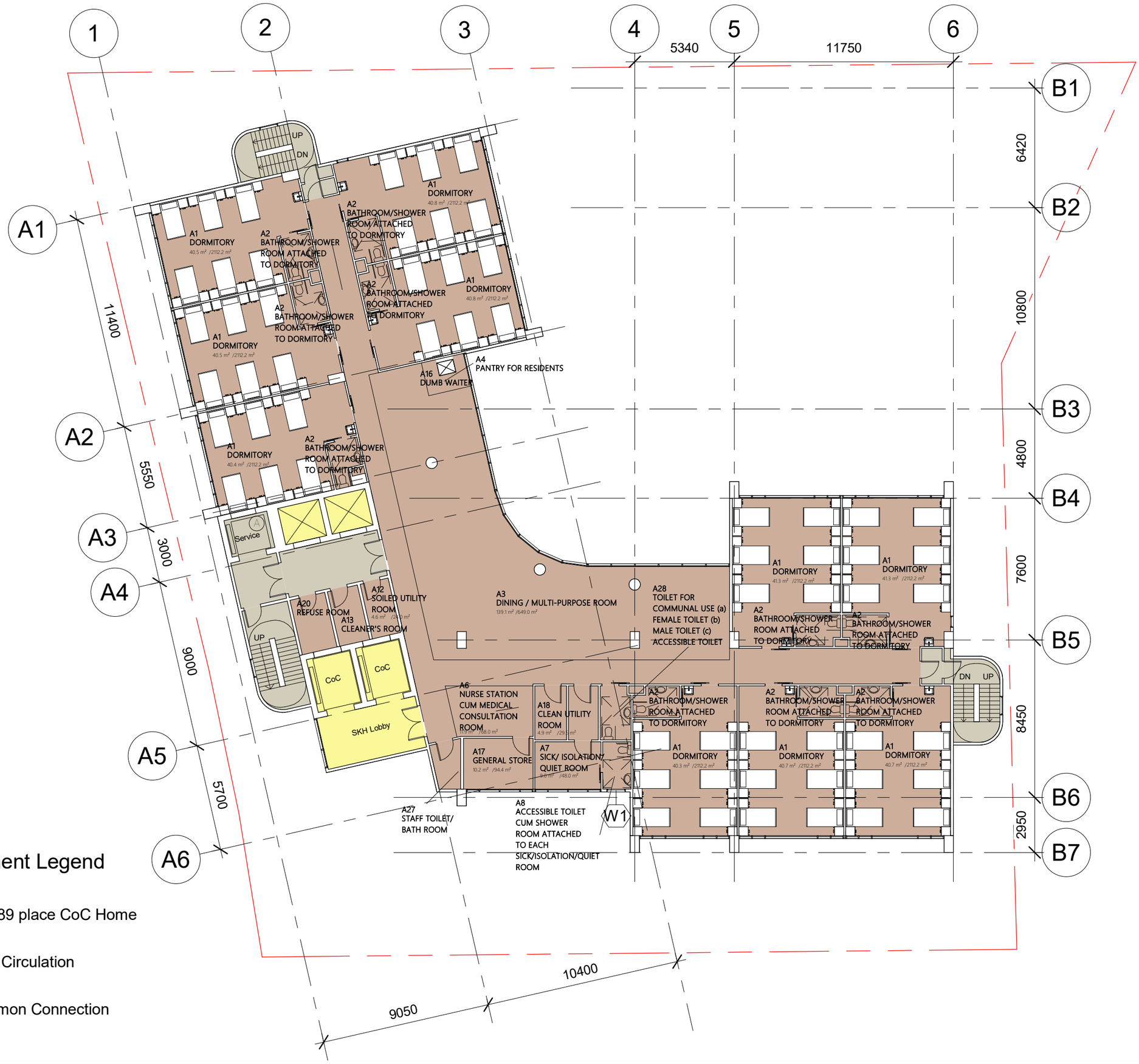
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

TRAFFIC ENGINEER
Ho Wang SPB Limited

ENVIRONMENTAL CONSULTANT
Urban Green Consultants Limited

QUANTITY SURVEYOR
Rider Levett Bucknall Ltd

LANDSCAPE ARCHITECT
Otherland Limited



Department Legend

- (A) 289 place CoC Home
- BOH Circulation
- Common Connection

BD REF -

BIM REF -

FSD REF -

Rev.	Date	Amendment	Purpose

PROJECT NO.: HKA-P-01757

CLIENT

Hong Kong Sheng Kung Hui Welfare Council Limited

PROJECT

TFS for The Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex

DRAWING TITLE

3F-6F Plan

SCALE 1 : 200 @A3

DRAWING NO. A004

ISSUE DATE 28/02/24

LEAD CONSULTANT & ARCHITECT

LWK +PARTNERS

BUILDING SERVICES ENGINEER
WSP Hong Kong Limited

STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

TRAFFIC ENGINEER
Ho Wang SPB Limited

ENVIRONMENTAL CONSULTANT
Urban Green Consultants Limited

QUANTITY SURVEYOR
Rider Levett Bucknall Ltd

LANDSCAPE ARCHITECT
Otherland Limited

Department Legend

- (A) 289 place CoC Home
- (F) Foster Care Services and Agency based Enhancement of Professional Staff Support Services (FSC & APBSS)
- (G) Staff Training Unit (STU)
- BOH Circulation
- Common Connection
- Outdoor Space

BD REF -

BIM REF -

FSD REF -

Rev.	Date	Amendment	Purpose

PROJECT NO.: HKA-P-01757

CLIENT
Hong Kong Sheng Kung Hui Welfare Council Limited

PROJECT
TFS for The Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex

1 E005

DRAWING TITLE
7F Plan

SCALE 1 : 200 @A3

DRAWING NO. A005

ISSUE DATE 15/01/24

LEAD CONSULTANT & ARCHITECT
LWK +PARTNERS

BUILDING SERVICES ENGINEER
WSP Hong Kong Limited

STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

TRAFFIC ENGINEER
Ho Wang SPB Limited

ENVIRONMENTAL CONSULTANT
Urban Green Consultants Limited

QUANTITY SURVEYOR
Rider Levett Bucknall Ltd

LANDSCAPE ARCHITECT
Otherland Limited

1 E001

Department Legend

- (Ea) Three 8-place SGH
- (Eb) One 6-place SGH
- BOH
- BOH Circulation
- Common Connection
- Outdoor Space

BD REF -

BIM REF -

FSD REF -

Rev.	Date	Amendment	Purpose

PROJECT NO.: HKA-P-01757

CLIENT

Hong Kong Sheng Kung Hui Welfare Council Limited

PROJECT

TFS for The Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex

DRAWING TITLE

8F Plan

SCALE 1 : 200 @A3

DRAWING NO. A006

ISSUE DATE 15/01/24

LEAD CONSULTANT & ARCHITECT

LWK +PARTNERS

BUILDING SERVICES ENGINEER
WSP Hong Kong Limited

STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

TRAFFIC ENGINEER
Ho Wang SPB Limited

ENVIRONMENTAL CONSULTANT
Urban Green Consultants Limited

QUANTITY SURVEYOR
Rider Levett Bucknall Ltd

LANDSCAPE ARCHITECT
Otherland Limited

Department Legend

- (Ec) Three 8-place SGH
- (Ed) Three 8-place SGH
- BOH
- BOH Circulation
- Common Connection
- Outdoor Space

BD REF -

BIM REF -

FSD REF -

Rev.	Date	Amendment	Purpose

PROJECT NO.: HKA-P-01757

CLIENT

Hong Kong Sheng Kung Hui Welfare Council Limited

PROJECT

TFS for The Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex

DRAWING TITLE

9F Plan

SCALE 1 : 200 @A3

DRAWING NO. A007

ISSUE DATE 15/01/24

LEAD CONSULTANT & ARCHITECT

LWK +PARTNERS

BUILDING SERVICES ENGINEER
WSP Hong Kong Limited

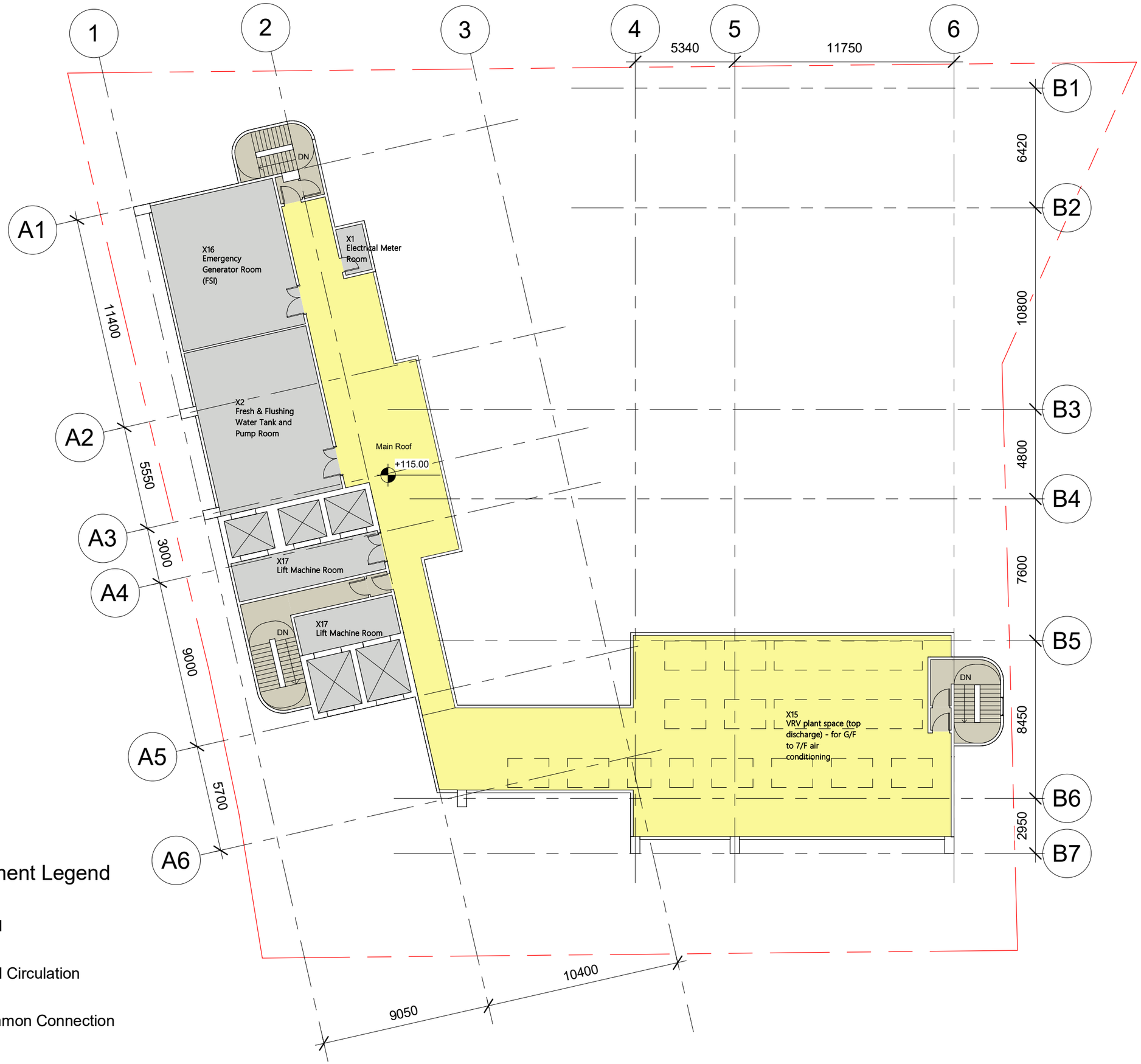
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

TRAFFIC ENGINEER
Ho Wang SPB Limited

ENVIRONMENTAL CONSULTANT
Urban Green Consultants Limited

QUANTITY SURVEYOR
Rider Levett Bucknall Ltd

LANDSCAPE ARCHITECT
Otherland Limited



Department Legend

- BOH
- BOH Circulation
- Common Connection

BD REF -

BIM REF -

FSD REF -

Rev.	Date	Amendment	Purpose

PROJECT NO.: HKA-P-01757

CLIENT

Hong Kong Sheng Kung Hui Welfare Council Limited

PROJECT

TFS for The Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex

DRAWING TITLE

RF Plan

SCALE 1 : 200 @A3

DRAWING NO. A008

ISSUE DATE 15/01/24

LEAD CONSULTANT & ARCHITECT

LWK +PARTNERS

BUILDING SERVICES ENGINEER
WSP Hong Kong Limited

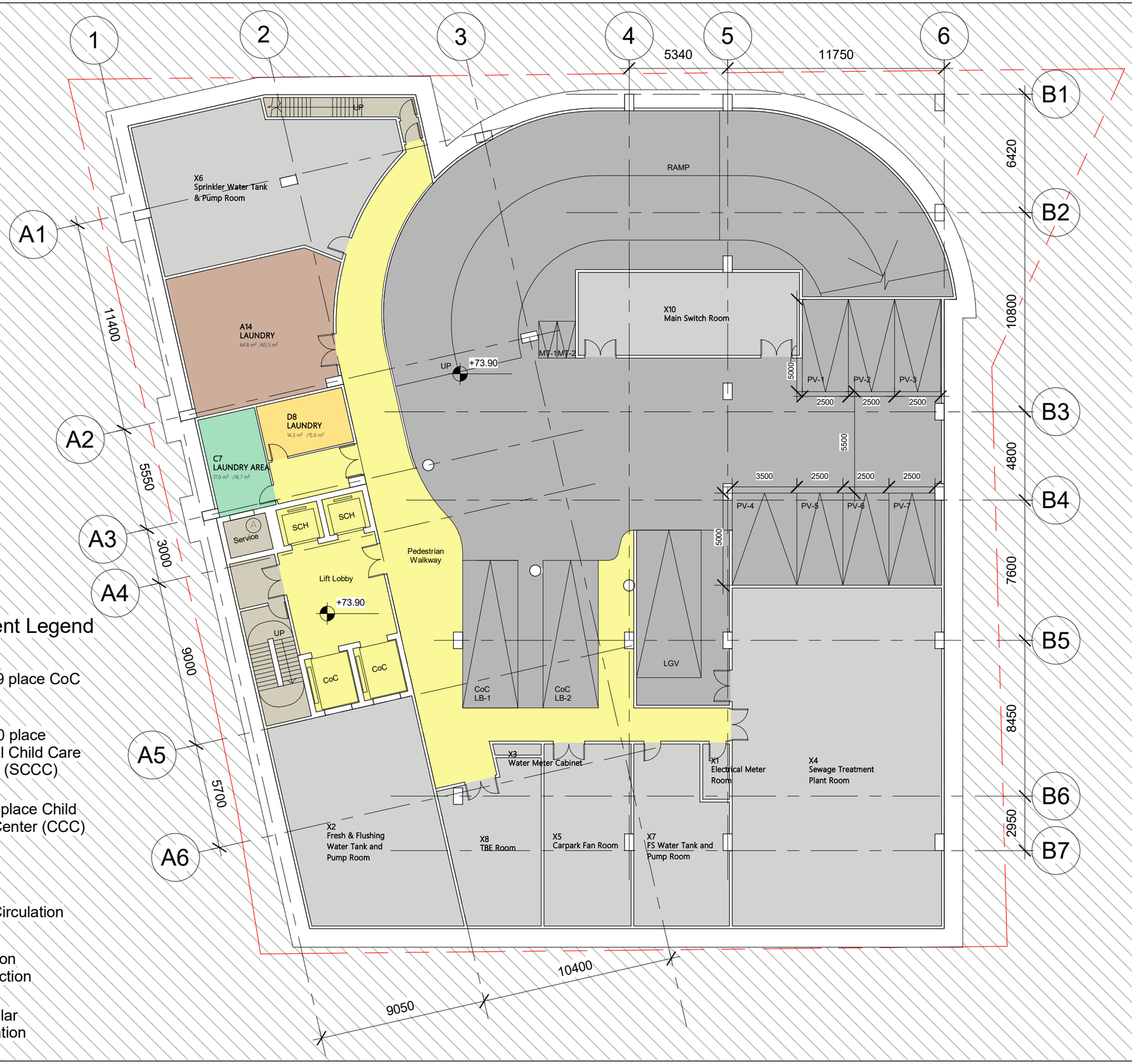
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

TRAFFIC ENGINEER
Ho Wang SPB Limited

ENVIRONMENTAL CONSULTANT
Urban Green Consultants Limited

QUANTITY SURVEYOR
Rider Levett Bucknall Ltd

LANDSCAPE ARCHITECT
Otherland Limited



Department Legend

- (A) 289 place CoC Home
- (C) 100 place Special Child Care Centre (SCCC)
- (D) 65 place Child Care Center (CCC)
- BOH
- BOH Circulation
- Common Connection
- Vehicular Circulation

BD REF -

BIM REF -

FSD REF -

Rev.	Date	Amendment	Purpose

PROJECT NO.: HKA-P-01757

CLIENT

Hong Kong Sheng Kung Hui Welfare Council Limited

PROJECT

TFS for The Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex

DRAWING TITLE

B1F Plan

SCALE 1 : 200 @A3

DRAWING NO. A009

ISSUE DATE 15/01/24

LEAD CONSULTANT & ARCHITECT

LWK +PARTNERS

BUILDING SERVICES ENGINEER
WSP Hong Kong Limited

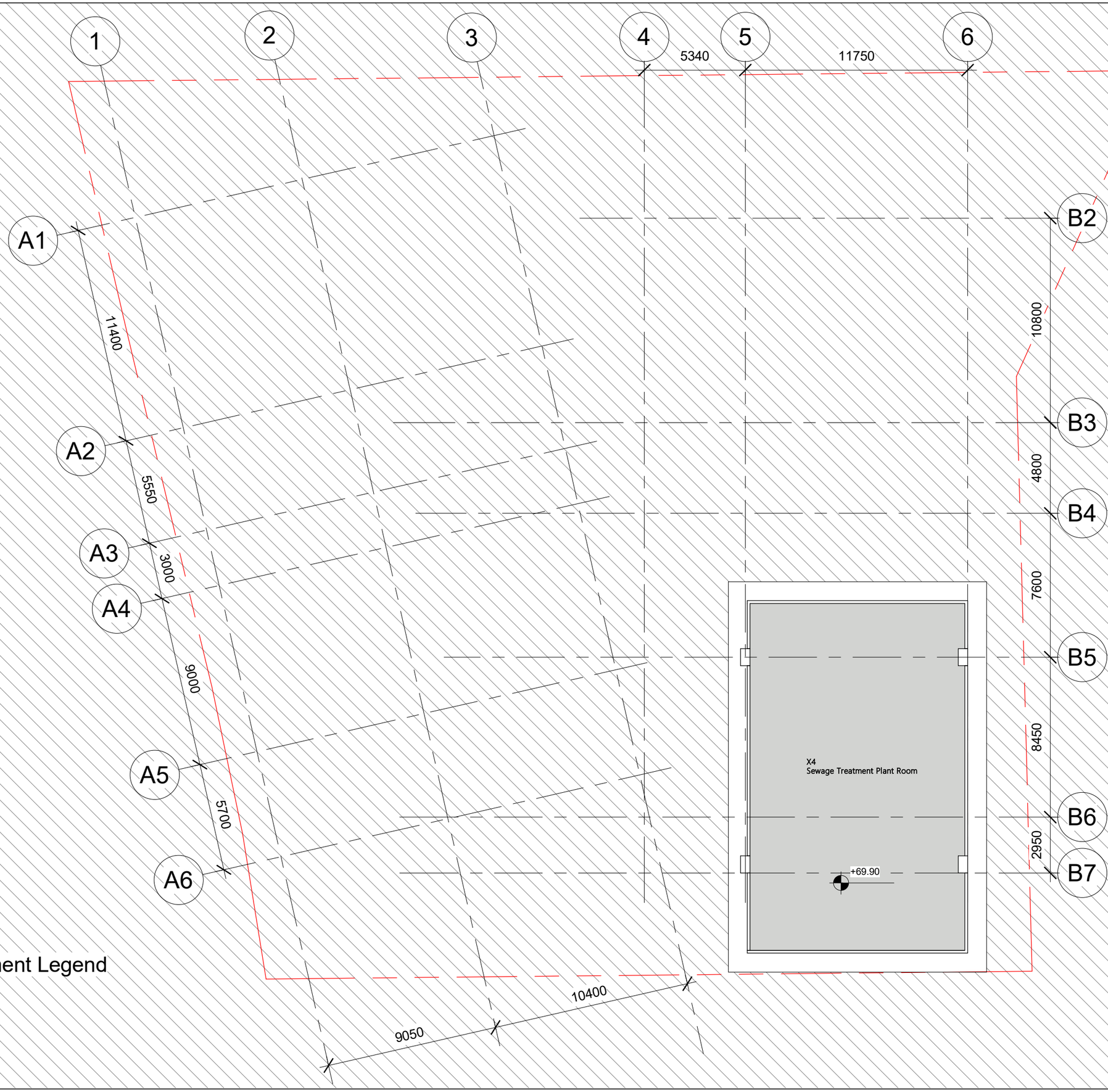
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

TRAFFIC ENGINEER
Ho Wang SPB Limited

ENVIRONMENTAL CONSULTANT
Urban Green Consultants Limited

QUANTITY SURVEYOR
Rider Levett Bucknall Ltd

LANDSCAPE ARCHITECT
Otherland Limited



Department Legend

BOH

BD REF -

BIM REF -

FSD REF -

Rev.	Date	Amendment	Purpose

PROJECT NO.: HKA-P-01757

CLIENT

Hong Kong Sheng Kung Hui Welfare Council Limited

PROJECT

TFS for The Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex

DRAWING TITLE

B2F Plan

SCALE 1 : 200 @A3

DRAWING NO. A010

ISSUE DATE 15/01/24

LEAD CONSULTANT & ARCHITECT

LWK +PARTNERS

BUILDING SERVICES ENGINEER
WSP Hong Kong Limited

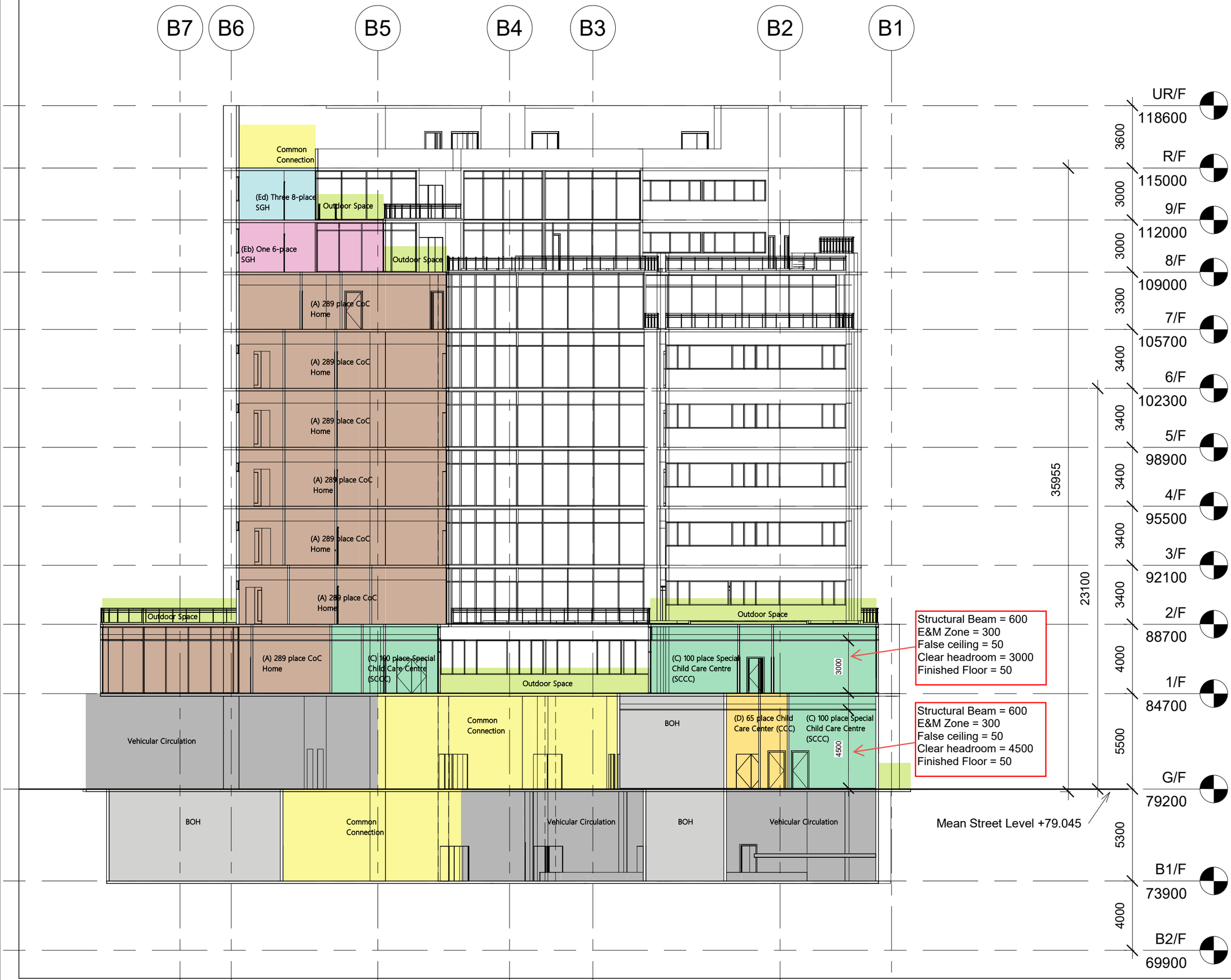
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

TRAFFIC ENGINEER
Ho Wang SPB Limited

ENVIRONMENTAL CONSULTANT
Urban Green Consultants Limited

QUANTITY SURVEYOR
Rider Levett Bucknall Ltd

LANDSCAPE ARCHITECT
Otherland Limited



BD REF -

BIM REF -

FSD REF -

Rev.	Date	Amendment	Purpose

PROJECT NO.: HKA-P-01757

CLIENT
Hong Kong Sheng Kung Hui Welfare Council Limited

PROJECT
TFS for The Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex

DRAWING TITLE
Section

SCALE 1 : 200 @A3

DRAWING NO. S001

ISSUE DATE 03/07/24

LEAD CONSULTANT & ARCHITECT
LWK +PARTNERS

BUILDING SERVICES ENGINEER
WSP Hong Kong Limited

STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

TRAFFIC ENGINEER
Ho Wang SPB Limited

ENVIRONMENTAL CONSULTANT
Urban Green Consultants Limited

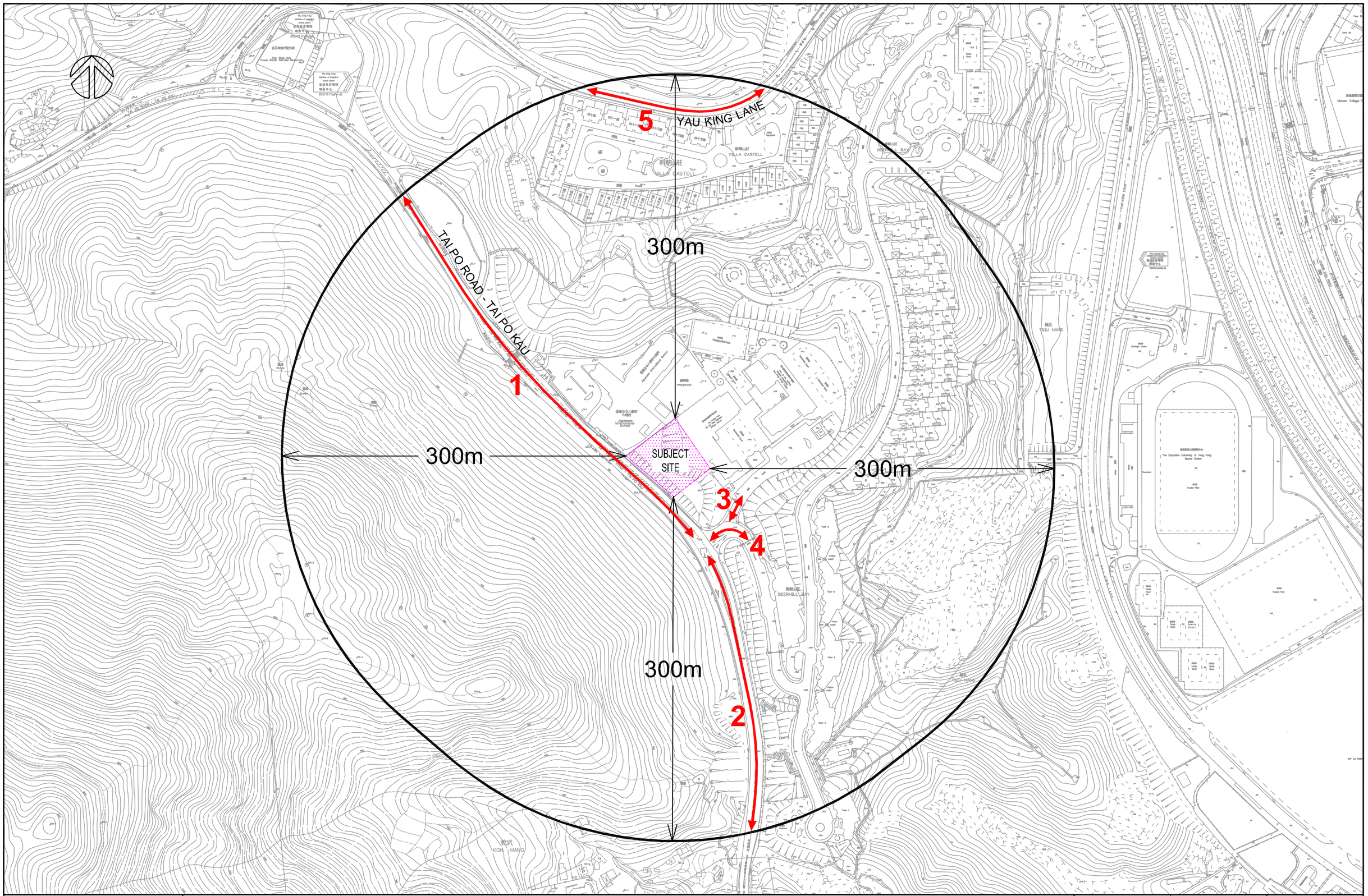
QUANTITY SURVEYOR
Rider Levett Bucknall Ltd

LANDSCAPE ARCHITECT
Otherland Limited

Appendix B

Traffic Data and TD endorsement

No.	Road Name	Speed Limit (kph)	Observed Heavy Vehicle Percentage		2045 Design Year Traffic Flows (Veh/hr)	
			AM	PM	AM	PM
1	Tai Po Road (Tai Po Kau)	50	21%	16%	1560	1063
2	Tai Po Road (Tai Po Kau)	50	18%	15%	1416	1074
3	Access Road to PLK Tin Ka Ping Millennium Primary School	50	27%	20%	217	14
4	Access Road to Deerhill Tower	50	24%	10%	357	357
5	Yau King Lane	50	23%	12%	341	245



HWSPB 何黃 Traffic & Transportation Consultants Ho Wang SPB Limited	Project Title: TECHNICAL FEASIBILITY STUDY (TFS) FOR THE PROPOSED DEVELOPMENT OF HONG KONG SHENG KUNG HUI ST. CHRISTOPHER'S COMPLEX AT THE REMAINING PORTION OF TAXLORD LOT NO. T77 IN D.D.34. TAI PO	Scale: 1 : 5000	Date: JAN 2022	Figure No.: 1
	Figure Title: ROAD INDEX	Project No.: J1652	CAD Ref.: J1652/EIA1/F01/2022-02-16	Rev.: –

W:\2022\J1652-cad\EIA1 2022-01-26\J1652-EIA1-F01.dwg, 1:1

Jason Lai

寄件者: Hiu Fung PANG <hiufungpang@td.gov.hk>
寄件日期: 2024年11月20日星期三 11:00
收件者: Ho Wang SPB
副本: hiufungpang@td.gov.hk; HKA-P-01757@lwkp.com; Janet Wong; Jason Lai; Norris Ng; smwu@skhwc.org.hk; Tinson Leung; Tommy Lam
主旨: Re: Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot no. T77 in D.D. 34. Tai Po - Technical Note of Traffic Forecast for Noise Impact Assessment
附件: J1652-12L-ALL.pdf

Dear Tommy,

I have no comment on the methodology for traffic forecast pls.

Regards,

Jacky Pang
E/TP3, TE/NTE, TD
Tel.: 2399 2731

From: Ho Wang SPB <info@howangspb.com>
To: "hiufungpang@td.gov.hk" <hiufungpang@td.gov.hk>
Cc: "smwu@skhwc.org.hk" <smwu@skhwc.org.hk>, Norris Ng <norrisng@lwkp.com>, "HKA-P-01757@lwkp.com" <HKA-P-01757@lwkp.com>, Tinson Leung <tinsonleung@howangspb.com>, Tommy Lam <tommylam@howangspb.com>, Jason Lai <jasonlai@howangspb.com>, Janet Wong <janetwong@howangspb.com>
Date: 2024/11/15 上午 11:11
Subject: Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot no. T77 in D.D. 34. Tai Po - Technical Note of Traffic Forecast for Noise Impact Assessment

---

BY POST & EMAIL (hiufungpang@td.gov.hk)

15 November 2024
Our reference: J1652/12

Transport Department

Attention: Mr. PANG Hiu Fung (Engr/Tai Po 1)

Dear Mr. Pang,

Technical Feasibility Study for the Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot no. T77 in D.D. 34. Tai Po
Technical Note of Traffic Forecast for Noise Impact Assessment

We would like to thank you for your no objection to our Traffic impact assessment Report for the captioned project on 19 Oct 2024.

We are pleased to enclose a duplicated copy of the latest Technical Note of Traffic Forecast for Noise Impact Assessment for your consideration/approval as requested by the Environmental Protection Department. The traffic data presented in this Technical Note is only for environmental assessment purpose by the environmental consultant.

We wish to thank you for your kind assistance and should you have any queries, please do not hesitate to contact the undersigned or our Mr. Jason Lai at 2865 0090 / 2169 6763.

Yours sincerely,
for Ho Wang SPB Limited

Tommy Lam
Principal Traffic Engineer

JW/TL/TA/JL/my
Encl.
c.c.: SKH – Ms. Samanth WU (smwu@skhwc.org.hk) – by Email only (w/ encl.)
LWK – Mr. Norris NG (norrisng@lwkp.com) – by Email only (w/encl.)
LWK - Project Email (HKA-P-01757@lwkp.com) – by Email only (w/encl.)

HWSPB 何黃
Traffic & Transportation Consultants

Ho Wang SPB Limited 何黃交通顧問有限公司
香港上環蘇杭街41 - 47號蘇杭商業大廈5樓
5 Floor, So Hong Commercial Building, 41 - 47 Jervois Street, Sheung Wan, Hong Kong
Tel : (852) 2865 0090 Fax : (852) 2866 4332
E-mail : info@howangspb.com Website : www.howangspb.com

BY POST & EMAIL (hiufungpang@td.gov.hk)

15 November 2024
Our reference: J1652/12

Transport Department
NT Regional Office
Traffic Engineering (NTE) Division
Project & Tai Po Section
9/F, Mongkok Government Offices
30 Luen Wan Street
Mongkok, Kowloon

Attention: Mr. PANG Hiu Fung (Engr/Tai Po 1)

Dear Mr. Pang,

Technical Feasibility Study for the Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot no. T77 in D.D. 34. Tai Po
Technical Note of Traffic Forecast for Noise Impact Assessment

We would like to thank you for your no objection to our Traffic impact assessment Report for the captioned project on 19 Oct 2024.

We are pleased to enclose a duplicated copy of the latest Technical Note of Traffic Forecast for Noise Impact Assessment for your consideration/approval as requested by the Environmental Protection Department. The traffic data presented in this Technical Note is only for environmental assessment purpose by the environmental consultant.

We wish to thank you for your kind assistance and should you have any queries, please do not hesitate to contact the undersigned or our Mr. Jason Lai at 2865 0090 / 2169 6763.

Yours sincerely,
for Ho Wang SPB Limited

Tommy Lam
Principal Traffic Engineer

JW/TL/TA/JL/my
Encl.

c.c.: SKH - Ms. Samanth WU (smwu@skhwc.org.hk) - by Email only (w/ encl.)
LWK - Mr. Norris NG (norrisng@lwkp.com) - by Email only (w/encl.)
LWK - Project Email (HKA-P-01757@lwkp.com) - by Email only (w/encl.)

Re: 回覆: Fw: 回覆: Proposed Development of HKSKH St. Christopher Complex on the Vacant Site in Tai Po under Special Sites Scheme - Road Type Confirmation

Hiu Fung PANG <hiufungpang@td.gov.hk>

週五 2024/7/12 上午 10:18

收件者:Jason Lai <jasonlai@howangspb.com>
副本:Emily Tang <emily.tang@urbangreen.hk>;Hiu Fung PANG <hiufungpang@td.gov.hk>;Hung Hay LEUNG <hunghayleung@td.gov.hk>;Joan Choi <joan.choi@urbangreen.hk>;Norris Ng <norrisng@lwkp.com>;Samantha Wu Sze Man <smwu@skhwc.org.hk>;Tinson Leung <tinsonleung@howangspb.com>;Tommy Lam <tommylam@howangspb.com>

1 個附件 (625 KB)
J1652-EIA1-F01.pdf;

Dear Jason,

I have no further comment on your proposed road type for Tai Po Road - Tai Po Kau as "rural road" please.

Regards,

Jacky Pang
E/TP3, TE/NTE, TD
Tel.: 2399 2731

From: Jason Lai <jasonlai@howangspb.com>
To: Hiu Fung PANG <hiufungpang@td.gov.hk>
Cc: Hung Hay LEUNG <hunghayleung@td.gov.hk>, Tinson Leung <tinsonleung@howangspb.com>, Tommy Lam <tommylam@howangspb.com>, Norris Ng <norrisng@lwkp.com>, Samantha Wu Sze Man <smwu@skhwc.org.hk>, 'Joan Choi' <joan.choi@urbangreen.hk>, Emily Tang <emily.tang@urbangreen.hk>
Date: 2024/07/12 上午 10:15
Subject: 回覆: Fw: 回覆: Proposed Development of HKSKH St. Christopher Complex on the Vacant Site in Tai Po under Special Sites Scheme - Road Type Confirmation

---

Dear Jacky,

We refer to your email on 11/7/2024, the nearest ATC station adjacent to the subject site on Tai Po Road is Station 6210 [Tai Po Road – Ma Liu Shui (between Entrance to Chung Chi College, CUHK and Yuen Chau Tsai INT)] (see below). According to ATC, station 6210 is classified as Rural Road.

As our site is located in the rural area, only a few smaller centre of population and popular recreation areas are connected to the concerned section of Tai Po Road adjacent to our site. Therefore, Tai Po Road – Tai Po Kau (section adjacent to our site) is assumed to be classified as **Rural Road** under the Hierarchy of Roads according to TPDM Vol. 2 Chap. 3.2..

We would be grateful if you could kindly express your confirmation at your earliest convenience.

Appendix C1

Road Traffic Noise Result (Unmitigated Scenario)

Proposed Development of Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 In D.D.34. Tai PoSt. Christopher's Complex at Tai Po

Noise Level Exceedance >70 dB(A)

Predicted Traffic Noise Level (Base Condition)

Floor/NSR	NSR1	NSR2	NSR3	NSR4	NSR5	NSR6	NSR7	NSR8	NSR9	NSR10	NSR11	NSR12	NSR13	NSR14	NSR15	NSR16	NSR17	NSR18	NSR19	NSR20	NSR21	NSR22	NSR23	NSR24	NSR25	NSR26
	Predicted Noise Level (dB(A))																									
2		78			78			78		65			65	65	44	43	38	36		36						
3	77			77				77		70			69	69	47	47			39		36					
4	76			76				76		70			69	69	47	48			41		39					
5	76			76				76		70			69	69	48	49			44		42					
6	75			75				75		70			69	69	49	50			48		46					
8			74			74	74		70		70	69											52	54	53	56
9			74			74	74		70		69	69										56	56		58	59

Summary Table	
Total no. of flats	71
Total no. of flats with noise exceedance	21
Compliance rate	70%

Appendix C2

Road Traffic Noise Result (Low Noise Road Surface)

Proposed Development of Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 In D.D.34. Tai PoSt. Christopher's Complex at Tai Po

Noise Level Exceedance >70 dB(A)

Predicted Traffic Noise Level (With Proposed Low Noise Road Surface)

Floor/NSR	NSR1	NSR2	NSR3	NSR4	NSR5	NSR6	NSR7	NSR8	NSR9	NSR10	NSR11	NSR12	NSR13	NSR14	NSR15	NSR16	NSR17	NSR18	NSR19	NSR20	NSR21	NSR22	NSR23	NSR24	NSR25	NSR26
	Predicted Noise Level (dB(A))																									
2		75			75			75		64			63	64	43	42	38	36		36						
3	74			75				74		68			67	67	46	47			39		36					
4	74			74				74		68			67	67	47	48			41		39					
5	73			73				73		68			67	67	48	49			44		42					
6	73			73				73		68			67	66	49	50			48		46					
8			72			72	72		68		67	67											52	54	53	56
9			72			72	71		67		67	67										55	56		58	59

Summary Table	
Total no. of flats	71
Total no. of flats with noise exceedance	21
Compliance rate	70%

Predicted Traffic Noise Level (Mitigated)

Floor/NSR	NSR1	NSR2	NSR3	NSR4	NSR5	NSR6	NSR7	NSR8	NSR9	NSR10	NSR11	NSR12	NSR13	NSR14	NSR15	NSR16	NSR17	NSR18	NSR19	NSR20	NSR21	NSR22	NSR23	NSR24	NSR25	NSR26
	Predicted Noise Level (dB(A))																									
2		70			70			70		64			63	64	43	42	38	36		36						
3	69			69				69		68			67	67	46	47			39		36					
4	68			68				68		68			67	67	47	48			41		39					
5	68			68				68		68			67	67	48	49			44		42					
6	67			67				67		68			67	66	49	50			48		46					
8			67			68	67		68		67	67											52	54	53	56
9			67			68	67		67		67	67										55	56		58	59

Summary Table	
Total no. of flats	71
l no. of flats with noise exceedance	0
Compliance rate	100%

*The predicted noise level is not the actual noise level at the external facade after the application of acoustic window. These predicted noise levels are the equivalent noise levels at 1m from the external facade after accounting the reduction in noise levels inside the flat offered by the proposed acoustic window.

Mitigation Measure:

Acoustic Window Type A

Acoustic Window Type B

Appendix D

Table of Noise Reduction Adjustment

Propsoed Development of Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

Road Traffic Noise Impact Assessment

Summry Table of Major Parameters of AW(BT) as per ProPECC PN5/23

Mitigation Measures	Room Area, m^2	Inner Opening (Width), mm	Inner Opening (Height), mm	Outer Opening (Width), mm	Outer Opening (Height), mm	Gap Width, mm	Overlapping, mm	MPA Applied?	Solid Parapet Applied?	Acoustic Ceiling Applied?	SAM Applied?	Noise Attenuation Applied, dB(A)
Acoustic Window (Baffle Type) AW(BT) (Type A) (Type B*)	18	750	1500	750	1500	100 to 175	≥ 100	No	-	-	Yes	8.5
Acoustic Window (Baffle Type) AW(BT) (Type B)	8	580	870	600	870	100 to 175	≥ 100	No	-	-	Yes	7.5

Note

MPA: Micro Perforated Absorber

SAM: Sound Absorptive Material

Proposed Development of Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

Road Traffic Noise Impact Assessment

Table of Noise Reduction Adjustment

AW(BT) Type A

AW(BT) Type B

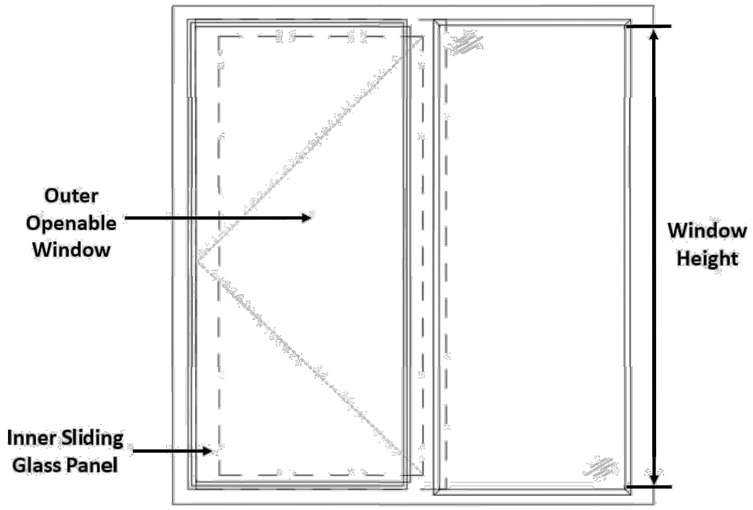
			Proposed Development							Reference Case (ProPECC PN5/23)										
Floor	**NSRs**	**Mitigation Measures**	**Inner Opening Area, mm**	**Outer Opening Area, mm**	**Gap Width, mm**	**Overlapping Length, mm**	**MPA Applied?**	**SAM applied?**	**Room Area (RA), m^2**	**Inner Opening Area, mm**	**Outer Opening Area, mm**	**Gap Width, mm**	**Overlapping Length, mm**	**MPA Applied?**	**SAM applied?**	**Room Area (RAref), m^2**	**Ref. Sound Attenuation, dB(A)**	**Room Size Adjustment 10xlog(RA/RAref)(adjust downward only),dB(a)**	**Noise Reduction after Adjustment, dB(A)**	**Window Number /Size Adjustment dB(A)**	**Noise Reduction adopted, dB(A)**
2	NSR2	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	32.7	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
2	NSR8	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	27.1	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
3	NSR1	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	42.5	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
3	NSR4	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	43.1	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
3	NSR8	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	41.1	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
4	NSR1	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	42.5	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
4	NSR4	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	43.1	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
4	NSR8	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	41.1	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
5	NSR1	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	42.5	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
5	NSR4	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	43.1	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
5	NSR8	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	41.1	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
6	NSR1	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	42.5	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
6	NSR4	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	43.1	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
6	NSR8	AW(BT) Type A	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	41.1	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-	8.5	3.0	**5.5**
2	NSR5	AW(BT) Type B*	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	16.9	750(W) x 1500 (H)	750(W) x 1500 (H)	100 to 175	≥ 100	No	Yes	18	8.5	-0.3	8.2	0.0	**8.2**
8	NSR3	AW(BT) Type B	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	11.1	580(W) x 870 (H)	600(W) x 870 (H)	100 to 175	≥ 100	No	Yes	8	7.5	-	7.5	3.0	**4.5**
8	NSR6	AW(BT) Type B	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	6.6	580(W) x 870 (H)	600(W) x 870 (H)	100 to 175	≥ 100	No	Yes	8	7.5	-0.9	6.6	3.0	**3.6**
8	NSR7	AW(BT) Type B	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	10.0	580(W) x 870 (H)	600(W) x 870 (H)	100 to 175	≥ 100	No	Yes	8	7.5	-	7.5	3.0	**4.5**
9	NSR3	AW(BT) Type B	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	11.1	580(W) x 870 (H)	600(W) x 870 (H)	100 to 175	≥ 100	No	Yes	8	7.5	-	7.5	3.0	**4.5**
9	NSR6	AW(BT) Type B	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	6.6	580(W) x 870 (H)	600(W) x 870 (H)	100 to 175	≥ 100	No	Yes	8	7.5	-0.9	6.6	3.0	**3.6**
9	NSR7	AW(BT) Type B	750(W) x 1500 (H)	750(W) x 1500 (H)	100	200	No	Yes	10.0	580(W) x 870 (H)	600(W) x 870 (H)	100 to 175	≥ 100	No	Yes	8	7.5	-	7.5	3.0	**4.5**

* No window number/size adjustment has been applied as the dimension of the proposed acoustic acoustic is same as the reference case.

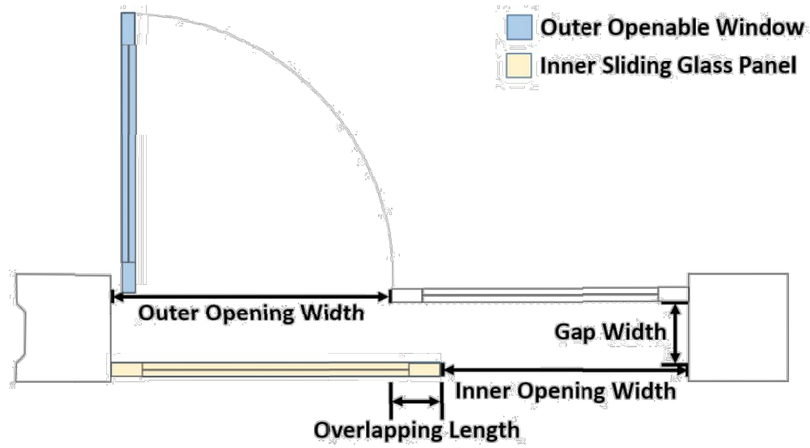
Appendix E

Reference of Acoustic Window Noise Reduction

(I) Possible design of "Acoustic Window (Baffle Type)" for 8m² and 18m² habitable rooms (i.e. dining room, living room or bedroom)



INTERNAL VIEW (NOT TO SCALE)



PLAN (NOT TO SCALE)

Possible Designs of "Acoustic Window (Baffle Type)" for 8m² and 18m² rooms					
Room Size (m^2)	**Room Dimensions (mm^3)**	**Inner Window Opening (mm^2)**	**Outer Window Opening (mm^2)**	**Overlapping Length (mm)**	**Gap Width (mm)**
8	**3200 (W) x 2500 (D) x 3400 (H)**	**580 (W) x 870 (H)**	**600 (W) x 870 (H)**	**≥ 100**	**100 to 175**
18	**5300 (W) x 3390 (D) x 3400 (H)**	**750 (W) x 1500 (H)**	**750 (W) x 1500 (H)**	**≥ 100**	**100 to 175**

Notes:

a. These are feasible designs of AW(BT) for 8m² and 18m² rooms.

b. For optimum performance of noise reduction, the air gap should have a pane-to-pane overlapping length of ≥ 100mm and a gap width between 100mm and 175mm, with the inner sliding glass panel in a closed position. The window pane shall be ≥ 6mm in thickness.

Appendix F

Noise Measurement Records and Calibration Certificate

RECORD OF BACKGROUND NOISE MONITORING								
Project. : Proposed Development of Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 In D.D.34. Tai Po St. Christopher's Complex at Tai Po								
Date	9 Feb 2023							
Monitoring Location		N1		N2		N3		
Description of the Location		Japanese International School		Entrance of PLK Tin Ka Ping Millennium Primary		Gate at Deerhill Bay		
Measurement Method		Direct measurement						
Equipment Used (Model and Serial No.)		Noise Meter: XL2 A2A-15415-E0 Calibrator : CEL-120/1 4884880						
Weather Condition	Status	Fine						
	Wind Strength (m/s)	<1						
Time of Monitoring		1 hours L90 Monitoring						
Time of Monitoring	Start	15:55	21:55	16:58	20:45	17:59	19:43	2:07
	Finish	16:55	22:55	17:58	21:45	18:59	20:43	3:07
Measured 1hrs L90(dB(A))		73.3	66.1	59.8	57.6	59.2	57.4	58.4
Free- field Correction (dB(A))		NA	NA	NA	NA	3	3	3
Corrected Noise Level (dB(A))		73.3	66.1	59.8	57.6	62.2	60.4	61.4
Significant Noise Source		Nil						

	Name	Signature	Date
Recorded by	Ailyn Chiu	Ailyn	02-10-2022
Checked by	Emily Tang	Eimly	02-10-2022

Noise Measurement Photo Record

	N1 Japanese International School	N2 PLK Tin Ka Ping Millennium Primary School	N3 Deerhill Bay
Daytime			
Evening time			
Night time			

Noise Meter

聲學測試服務有限公司
Acoustic Testing Services Limited
Unit E, 2/F., Century Industrial Centre, 33-35 Au Pui Wan Street, Fo Tan, Shatin, New Territories, Hong Kong
Tel: (852) 2690 9126 Fax: (852) 2690 9125 E-mail: info@ATSL.com.hk http://www.ATSL.com.hk

Certificate of Calibration

Certificate No. ATS22-010-CC007

Customer:	**Urban Green Consultants Limited** 23/F Wui Tat Centre, 55 Connaught Road West, Sheung Wan, Hong Kong	
Unit-under-test (UUT):		
Description:	Sound Analyzer	, Microphone & Pre-amplifier Set
Manufacturer:	NTi Audio	
Type No.:	XL2	, M2211
Serial No.:	A2A-15415-E0	, 8057
Test Conditions:		
Temperature:	26°C	
Relative Humidity:	80%	
Test Specifications:	Calibration Check	
Date of calibration:	09 June 2022	
Test Results:	All calibration points are within manufacturer's specification.	

Certified by: _____

Mr. Y. T. LEUNG / Technical Manager
MIOA, MHKIOA, MHKIQEP

Issue Date: 09 June 2022

H&T Instrument Service Company
凱迪儀器服務公司
Tel: +852 2187 1266
Email: hntinstrument@gmail.com

Due Day: 08 June 2023

Unit E, 2/F., Century Industrial Centre, 33-35 Au Pui Wan Street, Fo Tan, Shatin, New Territories, Hong Kong
Tel: (852) 2690 9126 Fax: (852) 2690 9125 E-mail: info@ATSL.com.hk http://www.ATSL.com.hk

1. The instrument under test was allowed to stabilize in the laboratory for over 24 hours.

2. Calibration equipment:

Description:	Multifunction Acoustical Calibrator
Manufacturer & Type:	Brüel & Kjær 4226
Serial No.:	2919264
Last Calibration Date:	20 August 2021
Certificate No.:	2HB21001798-0001

The calibration equipment used for calibration is traceable to National Standards via China Ceprei Laboratory Calibration & Testing Centre.

3. The sensitivity of the microphone has been adjusted by the calibration function of the Sound Analyzer (calibrated as 94.0dB at 1000Hz) before the calibration. And the adjusted sensitivity was recorded.

Adjusted Microphone Sensitivity (mV/Pa)	21.1

4. The Sound Analyzer has been calibrated in accordance with the requirements as specified in IEC 61672-1 Class 1, and vendor specific procedures.

5. The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allowance for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. Acoustic Testing Services Limited shall not be liable for any loss or damage resulting from the use of the equipment.

6. Calibration Results

6.1 Sound Pressure Level

Reference Sound Pressure Level

Setting of unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672-1 Class 1 Tolerance Limits, dB	Conclusion
Range, dB	Parameter	Time Weighting	Level, dB	Frequency, Hz			
30-130	dBA SPL	Fast	94.0	1000	94.0	± 0.7	PASS

Linearity

Setting of unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672-1 Class 1 Tolerance Limits, dB	Conclusion
Range, dB	Parameter	Time Weighting	Level, dB	Frequency, Hz			
30-130	dBA SPL	Fast	94.0	1000	94.0	± 0.7	PASS
			104.0		104.0	± 0.7	PASS
			114.0		114.0	± 0.7	PASS

Time Weighting

Setting of unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672-1 Class 1 Tolerance Limits, dB	Conclusion
Range, dB	Parameter	Time Weighting	Level, dB	Frequency, Hz			
30-130	dBA SPL	Fast	94.0	1000	94.0	± 0.7	PASS
		Slow			94.0	± 0.7	PASS

6.2 Frequency Response

A-weighting:

Setting of unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672-1 Class 1 Tolerance Limits, dB	Conclusion
Range, dB	Parameter	Time Weighting	Level, dB	Frequency, Hz			
30-130	SPL	Fast	54.6	31.5	54.6	± 1.5	PASS
			67.8	63	67.8	± 1.0	PASS
			77.9	125	77.9	± 1.0	PASS
			85.4	250	85.4	± 1.0	PASS
			90.8	500	90.8	± 1.0	PASS
			94.0	1000	94.0	± 0.7	PASS
			95.2	2000	95.2	± 1.0	PASS
			95.0	4000	94.8	± 1.0	PASS
			92.9	8000	93.6	+1.5; -2.5	PASS

C-weighting:

Setting of unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672-1 Class 1 Tolerance Limits, dB	Conclusion
Range, dB	Parameter	Time Weighting	Level, dB	Frequency, Hz			
30-130	SPL	Fast	91.0	31.5	91.1	± 1.5	PASS
			93.2	63	93.2	± 1.0	PASS
			93.8	125	93.8	± 1.0	PASS
			94.0	250	94.0	± 1.0	PASS
			94.0	500	94.0	± 1.0	PASS
			94.0	1000	94.0	± 0.7	PASS
			93.8	2000	93.8	± 1.0	PASS
			93.2	4000	93.8	± 1.0	PASS
			91.0	8000	91.7	+1.5; -2.5	PASS

Linear:

Setting of unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672-1 Class 1 Tolerance Limits, dB	Conclusion
Range, dB	Parameter	Time Weighting	Level, dB	Frequency, Hz			
30-130	SPL	Fast	94.0	31.5	94.0	± 1.5	PASS
				63	94.0	± 1.0	PASS
				125	94.0	± 1.0	PASS
				250	94.0	± 1.0	PASS
				500	94.0	± 1.0	PASS
				1000	94.0	± 0.7	PASS
				2000	93.9	± 1.0	PASS
				4000	94.8	± 1.0	PASS
				8000	94.7	+1.5; -2.5	PASS

All calibration points are within manufacturer's specification.

Calibrator

聲學測試服務有限公司
Acoustic Testing Services Limited
Unit E, 2/F., Century Industrial Centre, 33-35 Au Pui Wan Street, Fo Tan, Shatin, New Territories, Hong Kong
Tel: (852) 2690 9126 Fax: (852) 2690 9125 E-mail: info@ATSL.com.hk http://www.ATSL.com.hk

Certificate of Calibration

Certificate No. ATS22-010-CC008

Customer:	**Urban Green Consultants Limited** 23/F Wui Tat Centre, 55 Connaught Road West, Sheung Wan, Hong Kong
Unit-under-test (UUT):	
Description:	Acoustic Calibrator
Manufacturer:	CASELLA
Type No.:	CEL-120/1
Serial No.:	4884880
Test Conditions:	
Temperature:	26°C
Relative Humidity:	80%
Test Specifications:	Calibration Check
Date of calibration:	09 June 2022
Test Results:	All calibration points are within manufacturer's specification.

Certified by: _____

Mr. Y. T. LEUNG / Technical Manager
MIOA, MHKIOA, MHKIQEP

Issue Date: 09 June 2022

H&T Instrument Service Company
凱迪儀器服務公司
Tel: +852 2187 1266
Email: hntinstrument@gmail.com

Due Day: 08 June 2023

聲學測試服務有限公司
Acoustic Testing Services Limited
Unit E, 2/F., Century Industrial Centre, 33-35 Au Pui Wan Street, Fo Tan, Shatin, New Territories, Hong Kong
Tel: (852) 2690 9126 Fax: (852) 2690 9125 E-mail: info@ATSL.com.hk http://www.ATSL.com.hk

1. The instrument under test was allowed to stabilize in the laboratory for over 24 hours.

2. Calibration equipment:

Description:	Sound Analyzer	Reference Microphone
Manufacturer:	Brüel & Kjær	Brüel & Kjær
Type No.:	2270	4966
Serial No.:	3029788	3145611
Last Calibration Date:	19 April 2022	19 April 2022
Certificate No.:	AV220043	AV220043

The test equipment used for calibration is traceable to National Standards via Standards and Calibration Laboratory, the Government of the HKSAR.

3. The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allowance for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. Acoustic Testing Services Limited shall not be liable for any loss or damage resulting from the use of the equipment.

4. Calibration Results

Nominal value dB	Measured value dB	IEC 60942 Class 1 Tolerance Limits dB	Conclusion	Expanded Measurement Uncertainty of Reference Microphone B&K 4966 at 1000 Hz dB
94.0	94.2	± 0.25	PASS	0.2
114.0	114.2	± 0.25	PASS	0.2

All calibration points are within manufacturer's specification.

Appendix G

Estimation of Fixed Noise Sources Noise Level and Nosie Source Photo

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Power Level Estimation
PLK Tin Ka Ping Primary School

Fixed Noise Source	Sound Power Level from 38QUS021D8SS3
	dB(A)
ST-(1-9) (1-2/F)	66.0

Fixed Noise Source	Sound Power Level of Noise Source
	dB(A)
ST-(1-18) (3-7/F)	62.0

Fixed Noise Source	Sound Power Level from RXYMQ9AY1
	dB(A)
TY3	76

Fixed Noise Source	Sound Power Level from RXYMQ5AV4A
	dB(A)
TY4	71.0

Fixed Noise Source	Sound Power Level of Noise Source
	dB(A)
TY5	82.0

Fixed Noise Source	Sound Power Level of
	dB(A)
TY6	88.0

Japanese Internation School (Reference Chiller)

Sound Pressure Level of AMRTA Chiller (Model number: AW250)	radius [2]	Directivity Factor (Q)	Sound Power Level	Sound Power level of two chiller [1]
dB(A)	m		dB(A)	dB(A)
75	1	1	86.0	89.0

Notes:
(1) According to the site survey, there are four sets of chillers, each comprising two individual chillers with six fan motors. Therefore, two reference chillers will be evaluated as a single set chiller to accurately represent the chiller system at the Japanese International School.
(2) The radius refer to the catalogue of the Reference Chiller (AMRTA Chiller)

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Pressure level Calculation

NSR ID	NSR14
Floor	2/F
Height (mPD)	90.2

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Inpluse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
ST-4 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	Daikin Split Type AC	838245	832349	87.395	2.805	4	66	12.2	26.7	-	-	5.0	3	-	37.3
ST-5 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	Daikin Split Type AC	838248	832345	87.395	2.805	4	66	13.3	27.4	-	-	5.0	3	-	36.6
ST-6 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	Daikin Split Type AC	838250	832341	87.395	2.805	4	66	15.7	28.9	-	-	5.0	3	-	35.1
ST-7 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	Daikin Split Type AC	838253	832337	87.395	2.805	4	66	19.0	30.5	-	-	5.0	3	-	33.5
ST-8 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	Daikin Split Type AC	838256	832334	87.395	2.805	4	66	22.7	32.1	-	-	5.0	3	-	31.9
ST-9 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	Daikin Split Type AC	838259	832330	87.395	2.805	4	66	26.7	33.5	-	-	5.0	3	-	30.5
ST-7 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838245	832349	90.895	0.695	4	62	11.8	26.4	-	-	5.0	3	-	33.6
ST-8 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838245	832348	90.895	0.695	4	62	11.9	26.5	-	-	5.0	3	-	33.5
ST-9 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838248	832345	90.895	0.695	4	62	12.8	27.1	-	-	5.0	3	-	32.9
ST-10 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838248	832344	90.895	0.695	4	62	13.1	27.3	-	-	5.0	3	-	32.7
ST-11 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838250	832341	90.895	0.695	4	62	15.2	28.6	-	-	5.0	3	-	31.4
ST-12 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838251	832340	90.895	0.695	4	62	15.6	28.8	-	-	5.0	3	-	31.2
ST-13 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838253	832337	90.895	0.695	4	62	18.5	30.3	-	-	5.0	4	-	30.7
ST-14 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838254	832337	90.895	0.695	4	62	19.0	30.5	-	-	5.0	5	-	31.5
ST-15 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838256	832334	90.895	0.695	4	62	22.2	31.9	-	-	5.0	6	-	31.1
ST-16 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838257	832333	90.895	0.695	4	62	22.7	32.1	-	-	5.0	7	-	31.9
ST-17 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838259	832330	90.895	0.695	4	62	26.2	33.3	-	-	5.0	8	-	31.7
ST-18 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838259	832329	90.895	0.695	4	62	26.8	33.5	-	-	5.0	9	-	32.5
									Total Predicted Noise Level at NSR 1 (2/F)							**46**
									Criteria, ANL							**60**

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Pressure level Calculation

NSR ID	NSR14
Floor	3/F
Height (mPD)	93.6

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Impulse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
ST-7 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838245	832349	90.895	2.705	4	62	12.1	26.6	-	-	5.0	3	-	33.4
ST-8 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838245	832348	90.895	2.705	4	62	12.2	26.7	-	-	5.0	3	-	33.3
ST-9 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838248	832345	90.895	2.705	4	62	13.1	27.3	-	-	5.0	3	-	32.7
ST-10 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838248	832344	90.895	2.705	4	62	13.3	27.5	-	-	5.0	3	-	32.5
ST-11 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838250	832341	90.895	2.705	4	62	15.4	28.7	-	-	5.0	3	-	31.3
ST-12 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838251	832340	90.895	2.705	4	62	15.8	29.0	-	-	5.0	3	-	31.0
ST-13 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838253	832337	90.895	2.705	4	62	18.6	30.4	-	-	5.0	3	-	29.6
ST-14 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838254	832337	90.895	2.705	4	62	19.1	30.6	-	-	5.0	3	-	29.4
ST-15 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838256	832334	90.895	2.705	4	62	22.3	32.0	-	-	5.0	3	-	28.0
ST-16 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838257	832333	90.895	2.705	4	62	22.9	32.2	-	-	5.0	3	-	27.8
ST-17 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838259	832330	90.895	2.705	4	62	26.3	33.4	-	-	5.0	3	-	26.6
ST-18 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General Split Type AC	838259	832329	90.895	2.705	4	62	26.9	33.6	-	-	5.0	3	-	26.4
ST-7 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838245	832349	94.395	0.795	4	62	11.8	26.4	-	-	5.0	3	-	33.6
ST-8 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838245	832348	94.395	0.795	4	62	11.9	26.5	-	-	5.0	3	-	33.5
ST-9 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838248	832345	94.395	0.795	4	62	12.8	27.1	-	-	5.0	3	-	32.9
ST-10 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838248	832344	94.395	0.795	4	62	13.1	27.3	-	-	5.0	3	-	32.7
ST-11 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838250	832341	94.395	0.795	4	62	15.2	28.6	-	-	5.0	3	-	31.4
ST-12 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838251	832340	94.395	0.795	4	62	15.6	28.8	-	-	5.0	3	-	31.2
ST-13 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838253	832337	94.395	0.795	4	62	18.5	30.3	-	-	5.0	3	-	29.7
ST-14 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838254	832337	94.395	0.795	4	62	19.0	30.5	-	-	5.0	3	-	29.5
ST-15 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838256	832334	94.395	0.795	4	62	22.2	31.9	-	-	5.0	3	-	28.1
ST-16 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838257	832333	94.395	0.795	4	62	22.7	32.1	-	-	5.0	3	-	27.9
ST-17 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838259	832330	94.395	0.795	4	62	26.2	33.3	-	-	5.0	3	-	26.7
ST-18 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838259	832329	94.395	0.795	4	62	26.8	33.5	-	-	5.0	3	-	26.5
									Total Predicted Noise Level at NSR 1 (3/F)							45
									Criteria, ANL							60

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Pressure level Calculation

NSR ID	NSR14
Floor	4/F
Height (mPD)	97

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m							Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Distance	Impulse Effect	Inpluse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
ST-7 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838245	832349	94.395	2.605	4	62	12.1	26.6	-	-	5.0	3	-	33.4
ST-8 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838245	832348	94.395	2.605	4	62	12.2	26.7	-	-	5.0	3	-	33.3
ST-9 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838248	832345	94.395	2.605	4	62	13.1	27.3	-	-	5.0	3	-	32.7
ST-10 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838248	832344	94.395	2.605	4	62	13.3	27.5	-	-	5.0	3	-	32.5
ST-11 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838250	832341	94.395	2.605	4	62	15.4	28.7	-	-	5.0	3	-	31.3
ST-12 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838251	832340	94.395	2.605	4	62	15.8	29.0	-	-	5.0	3	-	31.0
ST-13 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838253	832337	94.395	2.605	4	62	18.6	30.4	-	-	5.0	3	-	29.6
ST-14 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838254	832337	94.395	2.605	4	62	19.1	30.6	-	-	5.0	3	-	29.4
ST-15 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838256	832334	94.395	2.605	4	62	22.3	32.0	-	-	5.0	3	-	28.0
ST-16 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838257	832333	94.395	2.605	4	62	22.9	32.2	-	-	5.0	3	-	27.8
ST-17 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838259	832330	94.395	2.605	4	62	26.3	33.4	-	-	5.0	3	-	26.6
ST-18 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General Split Type AC	838259	832329	94.395	2.605	4	62	26.9	33.6	-	-	5.0	3	-	26.4
ST-7 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838245	832349	98.14	1.14	4	62	11.9	26.5	-	-	5.0	3	-	33.5
ST-8 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838245	832348	98.14	1.14	4	62	11.9	26.5	-	-	5.0	3	-	33.5
ST-9 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838248	832345	98.14	1.14	4	62	12.9	27.2	-	-	5.0	3	-	32.8
ST-10 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838248	832344	98.14	1.14	4	62	13.1	27.3	-	-	5.0	3	-	32.7
ST-11 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838250	832341	98.14	1.14	4	62	15.2	28.6	-	-	5.0	3	-	31.4
ST-12 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838251	832340	98.14	1.14	4	62	15.6	28.9	-	-	5.0	3	-	31.1
ST-13 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838253	832337	98.14	1.14	4	62	18.5	30.3	-	-	5.0	3	-	29.7
ST-14 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838254	832337	98.14	1.14	4	62	19.0	30.5	-	-	5.0	3	-	29.5
ST-15 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838256	832334	98.14	1.14	4	62	22.2	31.9	-	-	5.0	3	-	28.1
ST-16 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838257	832333	98.14	1.14	4	62	22.7	32.1	-	-	5.0	3	-	27.9
ST-17 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838259	832330	98.14	1.14	4	62	26.2	33.3	-	-	5.0	3	-	26.7
ST-18 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838259	832329	98.14	1.14	4	62	26.8	33.5	-	-	5.0	3	-	26.5
									Total Predicted Noise Level at NSR 1 (4/F)							45
									Criteria, ANL							60

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Pressure level Calculation

NSR ID	NSR14
Floor	5/F
Height (mPD)	100.4

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Impulse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
ST-7 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838245	832349	97.895	2.505	4	62	12.1	26.6	-	-	5.0	3	-	33.4
ST-8 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838245	832348	97.895	2.505	4	62	12.1	26.7	-	-	5.0	3	-	33.3
ST-9 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838248	832345	97.895	2.505	4	62	13.1	27.3	-	-	5.0	3	-	32.7
ST-10 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838248	832344	97.895	2.505	4	62	13.3	27.5	-	-	5.0	3	-	32.5
ST-11 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838250	832341	97.895	2.505	4	62	15.4	28.7	-	-	5.0	3	-	31.3
ST-12 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838251	832340	97.895	2.505	4	62	15.8	28.9	-	-	5.0	3	-	31.1
ST-13 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838253	832337	97.895	2.505	4	62	18.6	30.4	-	-	5.0	3	-	29.6
ST-14 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838254	832337	97.895	2.505	4	62	19.1	30.6	-	-	5.0	3	-	29.4
ST-15 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838256	832334	97.895	2.505	4	62	22.3	31.9	-	-	5.0	3	-	28.1
ST-16 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838257	832333	97.895	2.505	4	62	22.9	32.2	-	-	5.0	3	-	27.8
ST-17 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838259	832330	97.895	2.505	4	62	26.3	33.4	-	-	5.0	3	-	26.6
ST-18 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General Split Type AC	838259	832329	97.895	2.505	4	62	26.9	33.6	-	-	5.0	3	-	26.4
ST-7 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838245	832349	101.395	0.995	4	62	11.8	26.4	-	-	5.0	3	-	33.6
ST-8 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838245	832348	101.395	0.995	4	62	11.9	26.5	-	-	5.0	3	-	33.5
ST-9 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838248	832345	101.395	0.995	4	62	12.8	27.1	-	-	5.0	3	-	32.9
ST-10 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838248	832344	101.395	0.995	4	62	13.1	27.3	-	-	5.0	3	-	32.7
ST-11 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838250	832341	101.395	0.995	4	62	15.2	28.6	-	-	5.0	3	-	31.4
ST-12 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838251	832340	101.395	0.995	4	62	15.6	28.9	-	-	5.0	3	-	31.1
ST-13 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838253	832337	101.395	0.995	4	62	18.5	30.3	-	-	5.0	3	-	29.7
ST-14 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838254	832337	101.395	0.995	4	62	19.0	30.5	-	-	5.0	3	-	29.5
ST-15 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838256	832334	101.395	0.995	4	62	22.2	31.9	-	-	5.0	3	-	28.1
ST-16 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838257	832333	101.395	0.995	4	62	22.7	32.1	-	-	5.0	3	-	27.9
ST-17 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838259	832330	101.395	0.995	4	62	26.2	33.3	-	-	5.0	3	-	26.7
ST-18 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838259	832329	101.395	0.995	4	62	26.8	33.5	-	-	5.0	3	-	26.5
										Total Predicted Noise Level at NSR 1 (5/F)						45
										Criteria, ANL						60

NSR ID	NSR21
Floor	5/F
Height (mPD)	100.4

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Screening Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
JS1	Japan Internation School R/F	Chiller	838201	832380	99.5	0.9	2	89	14.7	31.3	-	-	5.0	3	-	55.7
JS2	Japan Internation School R/F	Chiller	838196	832384	99.5	0.9	2	89	19.2	33.6	-	-	5.0	3	-	53.3
JS3	Japan Internation School R/F	Chiller	838192	832389	99.5	0.9	2	89	24.7	35.8	-	-	5.0	3	-	51.1
JS4	Japan Internation School R/F	Chiller	832187	832392	99.5	0.9	2	89	29.7	37.4	-	-	5.0	3	-	49.6
ST-1 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838236	832360	97.895	2.505	4	62	39.7	36.9	-	-	5.0	3	-	23.1
ST-2 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838237	832359	97.895	2.505	4	62	40.2	37.1	-	-	5.0	3	-	22.9
ST-1 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838239	832356	101.395	0.995	4	62	39.6	36.9	-	-	5.0	3	-	23.1
ST-2 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838240	832355	101.395	0.995	4	62	40.2	37.0	-	-	5.0	3	-	23.0
										Total Predicted Noise Level at NSR 1 (5/F)						59
										Criteria, ANL						60

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Pressure level Calculation

NSR ID	NSR14
Floor	6/F
Height (mPD)	103.8

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Impulse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
ST-7 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838245	832349	101.395	2.405	4	62	12.0	26.6	-	-	5.0	3	-	33.4
ST-8 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838245	832348	101.395	2.405	4	62	12.1	26.6	-	-	5.0	3	-	33.4
ST-9 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838248	832345	101.395	2.405	4	62	13.0	27.3	-	-	5.0	3	-	32.7
ST-10 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838248	832344	101.395	2.405	4	62	13.3	27.4	-	-	5.0	3	-	32.6
ST-11 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838250	832341	101.395	2.405	4	62	15.4	28.7	-	-	5.0	3	-	31.3
ST-12 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838251	832340	101.395	2.405	4	62	15.8	28.9	-	-	5.0	3	-	31.1
ST-13 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838253	832337	101.395	2.405	4	62	18.6	30.4	-	-	5.0	3	-	29.6
ST-14 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838254	832337	101.395	2.405	4	62	19.1	30.6	-	-	5.0	3	-	29.4
ST-15 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838256	832334	101.395	2.405	4	62	22.3	31.9	-	-	5.0	3	-	28.1
ST-16 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838257	832333	101.395	2.405	4	62	22.8	32.1	-	-	5.0	3	-	27.9
ST-17 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838259	832330	101.395	2.405	4	62	26.3	33.4	-	-	5.0	3	-	26.6
ST-18 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General Split Type AC	838259	832329	101.395	2.405	4	62	26.9	33.6	-	-	5.0	3	-	26.4
ST-7 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838245	832349	104.895	1.095	4	62	11.9	26.5	-	-	5.0	3	-	33.5
ST-8 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838245	832348	104.895	1.095	4	62	11.9	26.5	-	-	5.0	3	-	33.5
ST-9 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838248	832345	104.895	1.095	4	62	12.9	27.2	-	-	5.0	3	-	32.8
ST-10 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838248	832344	104.895	1.095	4	62	13.1	27.3	-	-	5.0	3	-	32.7
ST-11 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838250	832341	104.895	1.095	4	62	15.2	28.6	-	-	5.0	3	-	31.4
ST-12 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838251	832340	104.895	1.095	4	62	15.6	28.9	-	-	5.0	3	-	31.1
ST-13 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838253	832337	104.895	1.095	4	62	18.5	30.3	-	-	5.0	3	-	29.7
ST-14 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838254	832337	104.895	1.095	4	62	19.0	30.5	-	-	5.0	3	-	29.5
ST-15 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838256	832334	104.895	1.095	4	62	22.2	31.9	-	-	5.0	3	-	28.1
ST-16 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838257	832333	104.895	1.095	4	62	22.7	32.1	-	-	5.0	3	-	27.9
ST-17 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838259	832330	104.895	1.095	4	62	26.2	33.3	-	-	5.0	3	-	26.7
ST-18 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General Split Type AC	838259	832329	104.895	1.095	4	62	26.8	33.5	-	-	5.0	3	-	26.5
									Total Predicted Noise Level at NSR 1 (6/F)							**45**
									Criteria, ANL							**60**

NSR ID	NSR21
Floor	6/F
Height (mPD)	103.8

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Impulse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
JS1	Japan Internation School R/F	Chiller	838201	832380	99.5	4.3	2	89	21.9	34.8	-	-	5.0	3	-	52.2
JS2	Japan Internation School R/F	Chiller	838196	832384	99.5	4.3	2	89	25.8	36.2	-	-	-	3	-	55.8
JS3	Japan Internation School R/F	Chiller	838192	832389	99.5	4.3	2	89	30.7	37.7	-	-	-	3	-	54.3
JS4	Japan Internation School R/F	Chiller	832187	832392	99.5	4.3	2	89	35.2	38.9	-	-	-	3	-	53.1
ST-1 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838236	832360	101.395	2.405	4	62	39.7	36.9	-	-	5.0	3	-	23.1
ST-2 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838237	832359	101.395	2.405	4	62	40.2	37.1	-	-	5.0	3	-	22.9
ST-1 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838239	832356	104.895	1.095	4	62	39.6	36.9	-	-	5.0	3	-	23.1
ST-2 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838240	832355	104.895	1.095	4	62	40.2	37.0	-	-	5.0	3	-	23.0
									Total Predicted Noise Level at NSR 1 (6/F)							60
									Criteria, ANL							60

NSR ID	NSR19
Floor	6/F
Height (mPD)	103.8

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Impulse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
JS1	Japan Internation School R/F	Chiller	838201	832380	99.5	4.3	2	89	25.3	36.0	-	-	5.0	3	-	50.9
JS2	Japan Internation School R/F	Chiller	838196	832384	99.5	4.3	2	89	30.0	37.5	-	-	-	3	-	54.5
JS3	Japan Internation School R/F	Chiller	838192	832389	99.5	4.3	2	89	35.4	39.0	-	-	-	3	-	53.0
JS4	Japan Internation School R/F	Chiller	832187	832392	99.5	4.3	2	89	40.2	40.1	-	-	-	3	-	51.9
ST-1 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838236	832360	101.395	2.405	4	62	36.0	36.1	-	-	5.0	3	-	23.9
ST-2 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838237	832359	101.395	2.405	4	62	36.4	36.2	-	-	5.0	3	-	23.8
ST-1 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838239	832356	104.895	1.095	4	62	38.6	36.7	-	-	5.0	3	-	23.3
ST-2 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838240	832355	104.895	1.095	4	62	39.1	36.8	-	-	5.0	3	-	23.2
									Total Predicted Noise Level at NSR 1 (6/F)							59
									Criteria, ANL							60

NSR ID	NSR16
Floor	6/F
Height (mPD)	103.8

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Impulse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
JS1	Japan Internation School R/F	Chiller	838201	832380	99.5	4.3	2	89	28.0	36.9	-	-	5.0	3	-	50
JS2	Japan Internation School R/F	Chiller	838196	832384	99.5	4.3	2	89	34.1	38.6	-	-	-	3	-	53
JS3	Japan Internation School R/F	Chiller	838192	832389	99.5	4.3	2	89	40.7	40.2	-	-	-	3	-	52
JS4	Japan Internation School R/F	Chiller	832187	832392	99.5	4.3	2	89	46.3	41.3	-	-	-	3	-	51
									Total Predicted Noise Level at NSR 1 (6/F)							58
									Criteria, ANL							60

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
PLK Tin Ka Ping Millennium Primary School **Sound Pressure level Calculation**

NSR ID	NSR25
Floor	8/F
Height (mPD)	110.5

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Inpluse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
TY3-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832357	108	2.5	2	76	54.1	42.7	-	-	-	3	-	36.3
TY3-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832358	108	2.5	2	76	53.5	42.5	-	-	-	3	-	36.5
TY3-3	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838249	832359	108	2.5	2	76	52.9	42.5	-	-	-	3	-	36.5
TY3-4	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838248	832360	108	2.5	2	76	52.4	42.4	-	-	-	3	-	36.6
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	2.5	2	76	51.5	42.2	-	-	-	3	-	36.8
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	2.5	2	76	50.9	42.1	-	-	-	3	-	36.9
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	3.4	2	71	50.4	42.0	-	-	-	3	-	32.0
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	3.4	2	71	50.3	42.0	-	-	-	3	-	32.0
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832373	108	2.4	2	82	53.4	42.5	-	-	-	3	-	42.5
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838244	832375	108	2.4	2	82	53.0	42.5	-	-	-	3	-	42.5
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832375	108	2.4	2	82	54.6	42.7	-	-	-	3	-	42.3
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838247	832374	108	2.4	2	82	55.0	42.8	-	-	-	3	-	42.2
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838267	832390	108	2.8	2	88	81.6	46.2	-	-	-	3	-	44.8
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832393	108	2.8	2	88	79.7	46.0	-	-	-	3	-	45.0
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838265	832394	108	2.8	2	88	81.8	46.2	-	-	-	3	-	44.8
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832396	108	2.8	2	88	81.4	46.2	-	-	-	3	-	44.8
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838262	832395	108	2.8	2	88	79.4	46.0	-	-	-	3	-	45.0
JS-1	Japanese Internation School R/F	Chiller	838201	832380	101	10.0	2	89	32.6	38.3	-	-	-	3	-	53.7
JS-2	Japanese Internation School R/F	Chiller	838196	832384	101	10.0	2	89	36.6	39.2	-	-	-	3	-	52.8
JS-3	Japanese Internation School R/F	Chiller	838192	832389	101	10.0	2	89	41.3	40.3	-	-	-	3	-	51.7
JS-4	Japanese Internation School R/F	Chiller	832187	832392	101	10.0	2	89	45.5	41.1	-	-	-	3	-	50.8
									Total Predicted Noise Level at NSR 3 (8/F)							**60**
									Criteria, ANL							**60**

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Pressure level Calculation

NSR ID	NSR23
Floor	8/F
Height (mPD)	110.5

Noise Source ID	Location	Activities/Equipment	Location			Height of Floor	Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z				Daytime & Evening time		Distance	Inpluse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	106.3	2.5	2	76	32.2	38.1	-	-	-	3		40.9
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	106.3	2.5	2	76	32.2	38.1	-	-	-	3		40.9
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	106.3	3.4	2	71	31.2	37.9	-	-	-	3		36.1
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	106.3	3.4	2	71	31.3	37.9	-	-	-	3		36.1
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832373	108	106.3	2.4	2	82	35.7	39.0	-	-	-	3		46.0
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838244	832375	108	106.3	2.4	2	82	36.2	39.2	-	-	-	3		45.8
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832375	108	106.3	2.4	2	82	37.8	39.5	-	-	-	3		45.5
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838247	832374	108	106.3	2.4	2	82	37.4	39.4	-	-	-	3		45.6
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838267	832390	108	106.3	2.8	2	88	64.4	44.2	-	-	-	3		46.8
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832393	108	106.3	2.8	2	88	63.4	44.0	-	-	-	3		47.0
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838265	832394	108	106.3	2.8	2	88	65.5	44.3	-	-	-	3		46.7
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832396	108	106.3	2.8	2	88	65.8	44.3	-	-	-	3		46.7
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838262	832395	108	106.3	2.8	2	88	63.9	44.1	-	-	-	3		46.9
JS-1	Japanese Internation School R/F	Chiller	838201	832380	101	99.5	10.0	2	89	36.3	39.2	-	-	-	3		52.8
JS-2	Japanese Internation School R/F	Chiller	838196	832384	101	99.5	10.0	2	89	42.3	40.5	-	-	-	3		51.5
JS-3	Japanese Internation School R/F	Chiller	838192	832389	101	99.5	10.0	2	89	48.7	41.7	-	-	-	3		50.3
JS-4	Japanese Internation School R/F	Chiller	832187	832392	101	99.5	10.0	2	89	54.3	42.7	-	-	-	3		49.3
										Total Predicted Noise Level at NSR 3 (8/F)							**60**
										Criteria, ANL							**60**

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Pressure level Calculation

NSR ID	NSR26
Floor	8/F
Height (mPD)	110.5

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Inpluse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
TY3-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832357	108	2.5	2	76	56.7	43.1	-	-	-	3	-	35.9
TY3-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832358	108	2.5	2	76	56.0	42.9	-	-	-	3	-	36.1
TY3-3	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838249	832359	108	2.5	2	76	55.3	42.8	-	-	-	3	-	36.2
TY3-4	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838248	832360	108	2.5	2	76	54.7	42.7	-	-	-	3	-	36.3
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	2.5	2	76	53.7	42.6	-	-	-	3	-	36.4
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	2.5	2	76	53.1	42.5	-	-	-	3	-	36.5
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	3.4	2	71	52.4	42.4	-	-	-	3	-	31.6
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	3.4	2	71	52.0	42.3	-	-	-	3	-	31.7
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832373	108	2.4	2	82	55.1	42.8	-	-	-	3	-	42.2
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838244	832375	108	2.4	2	82	54.5	42.7	-	-	-	3	-	42.3
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832375	108	2.4	2	82	56.2	43.0	-	-	-	3	-	42.0
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838247	832374	108	2.4	2	82	56.7	43.1	-	-	-	3	-	41.9
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838267	832390	108	2.8	2	88	83.0	46.4	-	-	-	3	-	44.6
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832393	108	2.8	2	88	80.9	46.1	-	-	-	3	-	44.9
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838265	832394	108	2.8	2	88	82.9	46.4	-	-	-	3	-	44.6
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832396	108	2.8	2	88	82.4	46.3	-	-	-	3	-	44.7
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838262	832395	108	2.8	2	88	80.5	46.1	-	-	-	3	-	44.9
JS-1	Japanese Internation School R/F	Chiller	838201	832380	101	10.0	2	89	30.8	37.7	-	-	-	3	-	54.2
JS-2	Japanese Internation School R/F	Chiller	838196	832384	101	10.0	2	89	34.2	38.7	-	-	-	3	-	53.3
JS-3	Japanese Internation School R/F	Chiller	838192	832389	101	10.0	2	89	38.6	39.7	-	-	-	3	-	52.3
JS-4	Japanese Internation School R/F	Chiller	832187	832392	101	10.0	2	89	42.6	40.6	-	-	-	3	-	51.4
										Total Predicted Noise Level at NSR 3 (8/F)						**60**
										Criteria, ANL						**60**

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Pressure level Calculation

NSR ID	NSR22
Floor	9/F
Height (mPD)	113.5

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Inpluse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
TY3-4	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838248	832360	108	5.5	2	76	23.9	35.5	-	-	-	3	-	43.5
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	5.5	2	76	23.4	35.4	-	-	-	3	-	43.6
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	5.5	2	76	23.4	35.4	-	-	-	3	-	43.6
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	6.4	2	71	23.6	35.4	-	-	-	3	-	38.6
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	6.4	2	71	23.6	35.4	-	-	-	3	-	38.6
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832373	108	5.4	2	82	27.9	36.9	-	-	-	3	-	48.1
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838244	832375	108	5.4	2	82	28.5	37.1	-	-	-	3	-	47.9
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832375	108	5.4	2	82	30.0	37.5	-	-	-	3	-	47.5
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838247	832374	108	5.4	2	82	29.5	37.4	-	-	-	3	-	47.6
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838267	832390	108	5.8	2	88	56.3	43.0	-	-	-	3	-	48.0
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832393	108	5.8	2	88	55.4	42.8	-	-	-	3	-	48.2
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838265	832394	108	5.8	2	88	57.4	43.2	-	-	-	3	-	47.8
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832396	108	5.8	2	88	57.8	43.2	-	-	-	3	-	47.8
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838262	832395	108	5.8	2	88	55.9	42.9	-	-	-	3	-	48.1
JS-1	Japanese Internation School R/F	Chiller	838201	832380	101	13.0	2	89	40.7	40.2	-	-	-	3	-	51.8
JS-2	Japanese Internation School R/F	Chiller	838196	832384	101	13.0	2	89	46.6	41.4	-	-	-	3	-	50.6
JS-3	Japanese Internation School R/F	Chiller	838192	832389	101	13.0	2	89	53.0	42.5	-	-	-	3	-	49.5
JS-4	Japanese Internation School R/F	Chiller	832187	832392	101	13.0	2	89	58.5	43.3	-	-	-	3	-	48.7
										Total Predicted Noise Level at NSR 4 (9/F)						**60**
										Criteria, ANL						**60**

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Pressure level Calculation

NSR ID	NSR23
Floor	9/F
Height (mPD)	113.5

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Inpluse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	5.5	2	76	32.6	38.2	-	-	-	3	-	40.8
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	5.5	2	76	32.6	38.2	-	-	-	3	-	40.8
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	6.4	2	71	31.7	38.0	-	-	-	3	-	36.0
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	6.4	2	71	31.7	38.0	-	-	-	3	-	36.0
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832373	108	5.4	2	82	36.1	39.1	-	-	-	3	-	45.9
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838244	832375	108	5.4	2	82	36.5	39.2	-	-	-	3	-	45.8
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832375	108	5.4	2	82	38.1	39.6	-	-	-	3	-	45.4
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838247	832374	108	5.4	2	82	37.7	39.5	-	-	-	3	-	45.5
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838267	832390	108	5.8	2	88	64.6	44.2	-	-	-	3	-	46.8
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832393	108	5.8	2	88	63.6	44.1	-	-	-	3	-	46.9
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838265	832394	108	5.8	2	88	65.7	44.3	-	-	-	3	-	46.7
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832396	108	5.8	2	88	66.0	44.4	-	-	-	3	-	46.6
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838262	832395	108	5.8	2	88	64.1	44.1	-	-	-	3	-	46.9
JS-1	Japanese Internation School R/F	Chiller	838201	832380	101	13.0	2	89	37.2	39.4	-	-	-	3	-	52.6
JS-2	Japanese Internation School R/F	Chiller	838196	832384	101	13.0	2	89	43.1	40.7	-	-	-	3	-	51.3
JS-3	Japanese Internation School R/F	Chiller	838192	832389	101	13.0	2	89	49.5	41.9	-	-	-	3	-	50.1
JS-4	Japanese Internation School R/F	Chiller	832187	832392	101	13.0	2	89	54.9	42.8	-	-	-	3	-	49.2
										Total Predicted Noise Level at NSR 4 (9/F)						60
										Criteria, ANL						**60**

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Pressure level Calculation

NSR ID	NSR25
Floor	8/F
Height (mPD)	113.5

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Inpluse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
TY3-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832357	108	5.5	2	76	54.4	42.7	-	-	-	3	-	36.3
TY3-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832358	108	5.5	2	76	53.7	42.6	-	-	-	3	-	36.4
TY3-3	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838249	832359	108	5.5	2	76	53.1	42.5	-	-	-	3	-	36.5
TY3-4	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838248	832360	108	5.5	2	76	52.6	42.4	-	-	-	3	-	36.6
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	5.5	2	76	51.7	42.3	-	-	-	3	-	36.7
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	5.5	2	76	51.2	42.2	-	-	-	3	-	36.8
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	6.4	2	71	50.7	42.1	-	-	-	3	-	31.9
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	6.4	2	71	50.6	42.1	-	-	-	3	-	31.9
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832373	108	5.4	2	82	53.6	42.6	-	-	-	3	-	42.4
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838244	832375	108	5.4	2	82	53.2	42.5	-	-	-	3	-	42.5
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832375	108	5.4	2	82	54.9	42.8	-	-	-	3	-	42.2
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838247	832374	108	5.4	2	82	55.3	42.8	-	-	-	3	-	42.2
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838267	832390	108	5.8	2	88	81.8	46.2	-	-	-	3	-	44.8
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832393	108	5.8	2	88	79.8	46.0	-	-	-	3	-	45.0
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838265	832394	108	5.8	2	88	81.9	46.2	-	-	-	3	-	44.8
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832396	108	5.8	2	88	81.5	46.2	-	-	-	3	-	44.8
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838262	832395	108	5.8	2	88	79.6	46.0	-	-	-	3	-	45.0
JS-1	Japanese Internation School R/F	Chiller	838201	832380	101	13.0	2	89	34	39	-	-	-	3	-	53.5
JS-2	Japanese Internation School R/F	Chiller	838196	832384	101	13.0	2	89	37	39	-	-	-	3	-	52.5
JS-3	Japanese Internation School R/F	Chiller	838192	832389	101	13.0	2	89	42	40	-	-	-	3	-	51.5
JS-4	Japanese Internation School R/F	Chiller	832187	832392	101	13.0	2	89	46	41	-	-	-	3	-	50.7
									Total Predicted Noise Level at NSR 3 (8/F)							**60**
									Criteria, ANL							**60**

Proposed Hong Kong Sheng Kung Hui St. Christopher's Complex at Tai Po
Sound Pressure level Calculation

NSR ID	NSR26
Floor	8/F
Height (mPD)	113.5

Noise Source ID	Location	Activities/Equipment	Location			Height difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Shortest slang Distance from Source to NSRs, m	Correction						Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time		Distance	Inpluse Effect	Tonality Effect	Barrier Effect	Façade	Intermittency Effect	
TY3-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832357	108	5.5	2	76	56.9	43.1	-	-	-	3	-	35.9
TY3-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832358	108	5.5	2	76	56.2	43.0	-	-	-	3	-	36.0
TY3-3	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838249	832359	108	5.5	2	76	55.6	42.9	-	-	-	3	-	36.1
TY3-4	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838248	832360	108	5.5	2	76	54.9	42.8	-	-	-	3	-	36.2
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	5.5	2	76	53.9	42.6	-	-	-	3	-	36.4
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	5.5	2	76	53.3	42.5	-	-	-	3	-	36.5
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	6.4	2	71	52.7	42.4	-	-	-	3	-	31.6
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	6.4	2	71	52.2	42.3	-	-	-	3	-	31.7
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832373	108	5.4	2	82	55.3	42.8	-	-	-	3	-	42.2
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838244	832375	108	5.4	2	82	54.7	42.7	-	-	-	3	-	42.3
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838246	832375	108	5.4	2	82	56.4	43.0	-	-	-	3	-	42.0
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba VRF Outdoor Unit	838247	832374	108	5.4	2	82	56.9	43.1	-	-	-	3	-	41.9
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838267	832390	108	5.8	2	88	83.1	46.4	-	-	-	3	-	44.6
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832393	108	5.8	2	88	81.0	46.2	-	-	-	3	-	44.8
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838265	832394	108	5.8	2	88	83.1	46.4	-	-	-	3	-	44.6
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838263	832396	108	5.8	2	88	82.6	46.3	-	-	-	3	-	44.7
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media VRF Outdoor Unit	838262	832395	108	5.8	2	88	80.6	46.1	-	-	-	3	-	44.9
JS-1	Japanese Internation School R/F	Chiller	838201	832380	101	13.0	2	89	32	38	-	-	-	3	-	53.9
JS-2	Japanese Internation School R/F	Chiller	838196	832384	101	13.0	2	89	35	39	-	-	-	3	-	53.1
JS-3	Japanese Internation School R/F	Chiller	838192	832389	101	13.0	2	89	39	40	-	-	-	3	-	52.1
JS-4	Japanese Internation School R/F	Chiller	832187	832392	101	13.0	2	89	43	41	-	-	-	3	-	51.3
									Total Predicted Noise Level at NSR 3 (8/F)							**60**
									Criteria, ANL							**60**

RZR60MVM

ST 1-9 (1-2/F)

RZR60MVM 50Hz
ST1-9 (1-2/F)

CEILING MOUNTED CASSETTE TYPE Cooling only

Model Name				50	60	71	100	125	140
	Indoor unit			FCQ50KAVEA	FCQ60KAVEA	FCQ71KAVEA	FCQ100KAVEA	FCQ125KAVEA	FCQ140KAVEA
	Outdoor unit			RZR50MVM	RZR60MVM	RZR71MVM	RZR100MYM	RZR125MYM	RZR140MYM
Power supply	Outdoor unit			1 Phase, 220–240 V, 50 Hz			3 Phase, 380–415 V, 50 Hz		
Cooling capacity[1,2] Rated (Min. - Max.)			kW	5.0 (2.3-5.6)	6.0 (2.6-6.3)	7.1 (3.2-8.0)	10.0 (5.0-11.2)	12.5 (5.7-14.0)	14.0 (6.2-15.4)
			Btu/h	17,100 (7,900-19,100)	20,500 (8,900-21,500)	24,200 (10,900-27,300)	34,100 (17,100-38,200)	42,700 (19,500-47,800)	47,800 (21,200-52,600)
Power consumption	Cooling[1]		kW	1.24	1.58	1.99	2.78	4.31	5.62
COP			W/W	4.03	3.80	3.57	3.60	2.90	2.49
CSPF			Wh/Wh	6.47	6.19	5.99	5.13	5.00	4.85
Indoor unit	Colour	Unit		———					
		Decoration panel		Fresh white					
	Airflow rate (H/M/L)		m³/min	21/17.5/13.5			32/26/20	33/28/22.5	
			cfm	741/618/477			1,130/918/706	1,165/988/794	
	Sound pressure level[3] (H/M/L)		dB(A)	35/31.5/28			43/37.5/32	44/39/34	44/40/36
	Dimensions (H×W×D)	Unit	mm	256×840×840			298×840×840		
		Decoration panel	mm	50×950×950					
	Machine weight	Unit	kg	21			24		
		Decoration panel	kg	5.5					
	Certified Operation range		°CWB	14 to 25					
Outdoor unit	Colour			Ivory white					
	Coil	Type		Cross fin coil			Micro channel		
	Compressor	Type		Hermetically sealed swing type					
		Motor output	kW	1.12	1.35	1.76	1.92		
	Refrigerant charge (R-410A)		kg	1.6(Charged for 30 m)			1.9(Charged for 30 m)		
	Sound pressure level[3]	Cooling	dB(A)	48			49	52	54
		Night quiet mode	dB(A)	44			45		
	Dimensions (H×W×D)		mm	595×845×300			990×940×320		
	Machine weight		kg	43			73		
	Certified Operation range		°CDB	21 to 46					
Piping connections	Liquid (Flare)		mm	φ9.5					
	Gas (Flare)		mm	φ15.9					
	Drain	Indoor unit	mm	VP25 (I.Dφ25×O.Dφ32)					
		Outdoor unit	mm	φ26.0 (Hole)					
Max. interunit piping length			m	50 (Equivalent length 70)					
Max. installation level difference			m	30					
Heat insulation				Both liquid and gas piping					

Note :
[1]Rated cooling capacities are based on the following conditions: Indoor temp., 27°CDB, 19.0°CWB; outdoor temp. 35°CDB, 24°CWB. Equiv. refrigeration piping, 7.5 m (horizontal).
[2]Capacities are net, including a deduction for cooling for indoor fan motor heat.
[3]The operation sound is measured in anechoic chamber. If it is measured under the actual installation conditions, it is normally over the set value due to environmental noise and sound reflection.

COMPACT MULTI FLOW CEILING MOUNTED CASSETTE TYPE Cooling only

Model Name				25	35	50	60
	Indoor unit			FFQ25BV1B	FFQ35BV1B	FFQ50BV1B	FFQ60BV1B
	Outdoor unit			RKS25EBVMA	RKS35EBVMA	RKS50FVMA	RKS60FVMA
Power supply				1 Phase, 220–240 V, 50 Hz			
Cooling capacity[1] Rated (Min. - Max.)			kW	2.5 (1.2-3.0)	3.4 (1.2-3.7)	4.7 (1.7-5.6)	5.8 (1.7-6.0)
			Btu/h	8,550 (4,100-10,250)	11,600 (4,100-12,600)	16,000 (5,800-19,100)	19,800 (5,800-20,500)
Power consumption	Cooling[1]		kW	0.73	1.10	1.62	2.07
COP				3.42	3.09	2.90	2.80
Indoor unit	Colour	Unit		———			
		Decoration panel		White			
	Airflow rate (H/L)		m³/min	9/6.5	10/6.5	12/8	15/10
			cfm	317/229	353/229	423/282	529/353
	Sound pressure level (H/L)[2]		dB(A)	29.5/24.5	32/25	36/27	41/32
	Dimensions (H×W×D)	Unit	mm	286×575×575			
		Decoration panel	mm	55×700×700			
	Machine weight	Unit	kg	17.5			
		Decoration panel	kg	2.7			
	Certified operation range		°CWB	14 to 23			
Outdoor unit	Colour			Ivory white			
	Compressor	Type		Hermetically sealed swing type			
		Motor output	kW	0.6		1.1	
	Refrigerant charge (R-410A)		kg	1.0 (Charged for 10 m)		1.5 (Charged for 10 m)	
	Sound pressure level [2]		dB(A)	46	47		49
	Dimensions (H×W×D)		mm	550×765×285		735×825×300	
	Machine weight		kg	34		47	
	Certified operation range		°CDB	10 to 46			
Piping connections	Liquid (Flare)		mm	ø6.4		ø6.4	
	Gas (Flare)		mm	ø9.5		ø12.7	
	Drain	Indoor unit	mm	VP20 (I.Dø20×O.Dø26)			
		Outdoor unit	mm	ø18.0 (Hole)			
Max. interunit piping length			m	20		30	
Max. installation level difference			m	15		20	
Heat insulation				Both liquid and gas piping			

Note :
[1]Rated cooling capacities are based on the following conditions: Indoor temp., 27°CDB, 19.0°CWB; outdoor temp. 35°CDB Equiv. refrigeration piping, 7.5 m (horizontal).
[2]The operation sound is measured in anechoic chamber. If it is measured under the actual installation conditions, it is normally over the set value due to environmental noise and sound reflection.

CEILING SUSPENDED TYPE Cooling only

Model Name				35
	Indoor unit			FHQ35BVV1B
	Outdoor unit			RKS35EBVMA
Power supply				1 Phase, 220–240 V, 50 Hz
Cooling capacity[1] Rated (Min. - Max.)			kW	3.4 (1.2-3.7)
			Btu/h	11,600 (4,100-12,600)
Power consumption	Cooling[1]		kW	1.05
COP				3.24
Indoor unit	Colour			White
	Air flow rate (H/L)		m³/min	13/10
			cfm	459/353
	Sound pressure level (H/L)[2]		dB(A)	37/32
	Dimensions (H×W×D)		mm	195×960×680
	Machine weight		kg	24
	Certified operation range		°CWB	14 to 23
Outdoor unit	Colour			Ivory white
	Compressor	Type		Hermetically sealed swing type
		Motor output	kW	0.6
	Refrigerant charge (R-410A)		kg	1.0 (Charged for 10 m)
	Sound pressure level [2]		dB(A)	47
	Dimensions (H×W×D)		mm	550×765×285
	Machine weight		kg	34
	Certified operation range		°CDB	10 to 46
Piping connections	Liquid (Flare)		mm	ø6.4
	Gas (Flare)		mm	ø9.5
	Drain	Indoor unit	mm	VP20 (I.Dø20×O.Dø26)
		Outdoor unit	mm	ø18.0 (Hole)
Max. interunit piping length			m	20
Max. installation level difference			m	15
Heat insulation				Both liquid and gas piping

Note :
[1]Rated cooling capacities are based on the following conditions: Indoor temp., 27°CDB, 19.0°CWB; outdoor temp. 35°CDB Equiv. refrigeration piping, 7.5 m (horizontal).
[2]The operation sound is measured in anechoic chamber. If it is measured under the actual installation conditions, it is normally over the set value due to environmental noise and sound reflection.

CEILING SUSPENDED TYPE Cooling only

Model Name				50	60	71	100	125	140
	Indoor unit			FHQ50DAVMA	FHQ60DAVMA	FHQ71DAVMA	FHQ100DAVMA	FHQ125DAVMA	FHQ140DAVMA
	Outdoor unit			RZR50MVM	RZR60MVM	RZR71MVM	RZR100MYM	RZR125MYM	RZR140MYM
Power supply	Outdoor unit			1 Phase, 220–240 V, 50 Hz			3 Phase, 380–415 V, 50 Hz		
Cooling capacity[1,2] Rated (Min. - Max.)			kW	5.0 (2.3-5.6)	6.0 (2.6-6.3)	7.1 (3.2-8.0)	10.0 (5.0-11.2)	12.5 (5.7-14.0)	14.0 (6.2-15.4)
			Btu/h	17,100 (7,900-19,100)	20,500 (8,900-21,500)	24,200 (10,900-27,300)	34,100 (17,100-38,200)	42,700 (19,500-47,800)	47,800 (21,200-52,600)
Power consumption	Cooling[1]		kW	1.24	1.58	2.37	3.03	4.42	5.55
COP			W/W	4.03	3.80	3.00	3.30	2.83	2.52
CSPF			Wh/Wh	6.18	5.99	5.74	5.01	4.99	4.69
Indoor unit	Colour			white					
	Airflow rate (H/M/L)		m³/min	15/12/10		20.5/17/14	28/24/20	31/27/23	34/29/24
			cfm	530/424/353		724/600/494	988/847/706	1,094/953/812	1,200/1,024/847
	Sound pressure level[3] (H/M/L)		dB(A)	37/35/32		38/36/34	42/38/34	44/41/37	46/42/38
	Dimensions (H×W×D)		mm	235×960×690		235×1,270×690	235×1,590×690		
	Machine weight		kg	25		32	38		
	Certified operation range		°CWB	14 to 25					
Outdoor unit	Colour			Ivory white					
	Coil	Type		Cross fin coil			Micro channel		
	Compressor	Type		Hermetically sealed swing type					
		Motor output	kW	1.12	1.35	1.76	1.92		
	Refrigerant charge (R-410A)		kg	1.6 (Charged for 30 m)			1.9(Charged for 30 m)		
	Sound pressure level[3]	Cooling	dB(A)	48			49	52	54
		Night quiet mode	dB(A)	44			45		
	Dimensions (H×W×D)		mm	595×845×300			990×940×320		
	Machine weight		kg	43			73		
	Certified operation range		°CDB	21 to 46					
Piping connections	Liquid (Flare)		mm	Φ9.5					
	Gas (Flare)		mm	Φ15.9					
	Drain	Indoor unit	mm	VP20 (I.DΦ20×O.DΦ26)					
		Outdoor unit	mm	Φ26.0 (Hole)					
Max. interunit piping length			m	50 (Equivalent length 70)					
Max. installation level difference			m	30					
Heat insulation				Both liquid and gas piping					

Note :
[1]Rated cooling capacities are based on the following conditions: Indoor temp., 27°CDB, 19.0°CWB; outdoor temp. 35°CDB, 24°CWB. Equiv. refrigeration piping, 7.5 m (horizontal).
[2]Capacities are net, including a deduction for cooling for indoor fan motor heat.
[3]The operation sound is measured in anechoic chamber. If it is measured under the actual installation conditions, it is normally over the set value due to environmental noise and sound reflection.

Reference Equipment for ST1-9 (2/F)
used for Fixed Noise Calculation

Carrier

Turn to the experts

Residential and light commercial

SPLIT SYSTEMS CATALOGUE

2022-2023

Carrier
Turn to the experts

For ST1-9 (2/F)

Specifications Multi-Split 38QUS

COOLING HEATING

		2 OUTPUTS		3 OUTPUTS		4 OUTPUTS		5 OUTPUTS
		38QUS014D8S2-1	38QUS018D8S2-2	38QUS021D8S3-1	38QUS027D8S3-2	38QUS028D8S4	38QUS036D8S4-1	38QUS042D8S5-1
MULTI-SPLIT SYSTEM		42QHG007D8S (×2)	42QHG009D8S (×2	42QHG007D8S (×3)	42QHG009D8S (×3)	42QHG007D8S (×4)	42QHG009D8S (×4)	42QHG009D8S (×5)
Power supply	V-HZ-PH	220-240V~, 50HZ, 1PH	220-240V~, 50HZ, 1PH	220-240V~, 50HZ, 1PH	220-24 50HZ, 1PH	50HZ, 1PH	-240V~, 50HZ, 1PH	220-240V~, 50HZ, 1PH
Cooling capacity	kW	4.10 (1.44~4.79)	5.28 (2.26~5.63	6.15 (1.95~6.74)	7.90 (2.20~8.50)	8.20 (2.49~10.26)	10.55 (2.74~11.29)	12.30 (2.64~12.30)
Heating capacity	kW	4.40 (1.50~4.91)	5.57 (2.37~5.68	6.59 (1.45~6.74)	8.20 (1.90~8.50)	8.79 (1.61~10.14)	10.55 (3.60~10.83)	12.30 (3.52~12.30)
Heating capacity at -7, -10, -15°C	kW	3,24 - 3,09 - 2,89	3,82 - 3,85 - 3,42	4,83 - 4,61 - 4,32	5,38 - 5,14 - 4,81	6,50 - 6,20 - 5,81	9,22 - 8,80 - 8,24	8,96 - 8,55 - 8,00
Pdesign capacity cooling	kW	4.10	5.28	6.15	7.90	8.20	10.55	12.30
Pdesign capacity heating (average)	kW	3.90	4.3	5.40	5.70	6.80	9.20	9.50
SEER/ SCOP(average)	W/W	6.8/4.0	6.7/4.0	6.5/4.0	6.1/4.0	7.0/4.0	6.5/4.0	6.5 / 3.8
Energy label		A++/A+	A++/A+	A++/A+	A+	A++/A+	A++/A+	A++/A
Yearly energy consumption	kWh	211/1365	276/1505	331/1890	454	410/2380	568/3220	662/3500
EER/ COP	W/W	3.23/3.71	3.24/3.71	3.23/3.73	3.23/3.73	3.23/3.71	3.23/3.71	3.24/3.73
Standard current (cooling)	A	5,9	7,7	9,0	12,0	10,9	15,0	17,3
Standard input (cooling)	W	1270	1630	1900	2450	2500	3270	3800
Standard current (heating)	A	5,3	6,8	8,5	11,0	10,4	13,5	15,0
Standard input (heating)	W	1185	1500	1770	2200	2400	2845	3300
Rated current	A	11,5	13,0	15,5	17,5	19,0	21,5	22,0
Rated input	W	2650,0	2850	3300	3600,0	4150,0	4600,0	4700,0
Outdoor airflow	m^3/h	2200,0	2200	2700	27		000,0	3850,0
Outdoor sound pressure level	dB(A)	56,0	56	58	60,0	63,0	64,0	63,0
Outdoor sound power level	dB(A)	65,0	65	66	68,0	70,0	72,0	72,0
Throttle type		EXV+Capillary	EXV+Capillary	EXV+Capillary	EXV+Capillary	EXV+Capillary	EXV+Capillary	EXV+Capillary
Dimension (W×D×H)	mm	800×333×554	800×333×554	845×363×702	845×363×702	946×410×810	946×410×810	946×410×810
Packing (W×D×H)	mm	920×390×625	920×390×625	965×395×775	965×395×775	1090×500×885	1090×500×885	1090×500×885
Net / Gross weight	kg	32.0 / 35.0	35.5 / 38.5	47.0 / 51.0	51.0 / 56.0	62.0 / 67.5	69.0 / 75.5	74.1/79.5
GWP		675,0	675	675	675,0	675,0	675,0	675
Refrigerant charge amount (R-32)	kg	1,1	1,25	1,40	1,7	2,1	2,1	2,9
Design pressure	Mpa	4.3 / 1.7	4.3 / 1.7	4.3 / 1.7	4.3 / 1.7	4.3 / 1.7	4.3 / 1.7	4.3 / 1.7
Refrigerant piping (Liquid side/ Gas side)	mm(inch)	2 × [Ø6.35/ Ø9.52 (1/4"/ 3/8")]	2 × [Ø6.35/ Ø9.52 (1/4"/ 3/8")]	3 × [Ø6.35/ Ø9.52 (1/4"/ 3/8")]	3 × [Ø6.35/ Ø9.52 (1/4"/ 3/8")]	3 × [Ø6.35/ Ø9.52 (1/4"/ 3/8")] + 1 × [Ø6.35/ Ø12.7 (1/4"/ 1/2")]	3 × [Ø6.35/ Ø9.52 (1/4"/ 3/8")] + 1 × [Ø6.35/ Ø12.7 (1/4"/ 1/2")]	4 × [Ø6.35/ Ø9.52 (1/4"/ 3/8")] + 1 × [Ø6.35/ Ø12.7 (1/4"/ 1/2")]
Chargeless pipe length	m	7.5*2	7.5*2	7.5*3	7.5*3	7.5*4	7.5*4	7.5*5
Additional charge	g/m	12,0	12	12	12,0	12,0	12,0	12,0
Max. length for all rooms	m	40,0	40	60	60,0	80,0	80,0	80,0
Max. length for one indoor unit	m	25,0	25	25	30,0	30,0	35,0	35,0
Max. height difference between IDU and CDU	m	15,0	15	15	15,0	15,0	15,0	15,0
Max. height difference between indoor units	m	10,0	10	10	10,0	10,0	10,0	10,0
Temperature range cooling	°C	-15 ~ 50	-15 ~ 50	-15 ~ 50	-15 ~ 50	-15 ~ 50	-15 ~ 50	-15 ~ 50
Temperature range heating	°C	-15 ~ 24	-15 ~ 24	-15 ~ 24	-15 ~ 24	-15 ~ 24	-15 ~ 24	-15 ~ 24

Cooling Capacity

COP

Sound Power Level

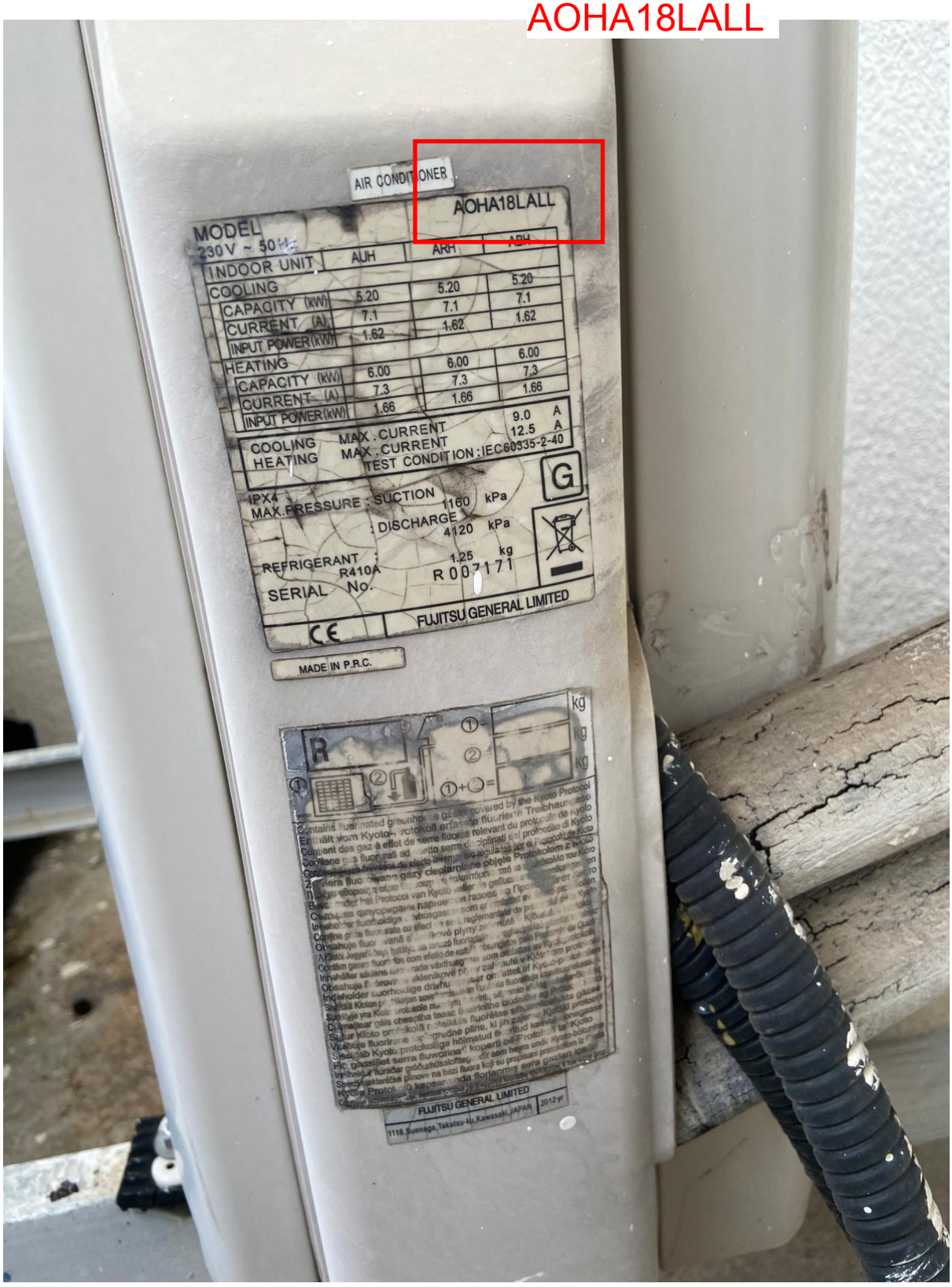
ACCESSORIES	CODE
KJR-120X controller	KJR-120X
Transfer board for KJR-120X (QHG/QHGH sizes 7, 9, 12)	17222000A58716
Transfer board for KJR-120X (QHG sizes 18,22,24)	17222000A58717
Transfer board for KJR-120X (QHE)	17317100A31589
KJR-120X2 controller	KJR-120X2
Transfer board for KJR-120X2 (QHG/QHGH sizes 7, 9, 12)	17222000A58719
Transfer board for KJR-120X2 - (QHG sizes 18,22,24)	17222000A58718
Transfer board for KJR-120X2 - (QHE)	17317100A28268

ACCESSORIES	CODE
Infrared controller	RG67
CCM09 controller	CCM09
Transfer board for CCM09 (QHG sizes 7, 9, 12)	17222000A58719
Transfer board for CCM09 (QHG sizes 18,22,24)	17222000A58718
Transfer board for CCM09 (QHE)	17311500A03582
Transfer board for CCM09 (QHP)	17311500A00145

ST 1-18

General
AOHA18LALL

General
AOHA18LALL



la gamma **a cassetta**

INVERTER alta efficienza

Telecomando a infrarossi
IR a corredo

AUHF12LA
AUHG12LV
INVERTER
› **F** 3.50 kW
› **C** 4.10 kW
› **F** Range: 0,90-4,40 kW
› **C** Range: 0,90-5,70 kW

AUHF14LA
AUHG14LV
INVERTER
› **F** 4.30 kW
› **C** 5.00 kW
› **F** Range: 0,90-5,40 kW
› **C** Range: 0,90-6,50 kW

AUHF18LB
AUHG18LV
INVERTER
› **F** 5.20 kW
› **C** 6.00 kW
› **F** Range: 0,90-5,90 kW
› **C** Range: 0,90-7,50 kW

AUHF24LB
AUHG24LV
INVERTER
› **F** 6.80 kW
› **C** 8.00 kW
› **F** Range: 0,90-8,00 kW
› **C** Range: 0,90-9,10 kW

F capacità di raffreddamento
C capacità di riscaldamento

AOHA/AOHG12/14/18LA

AOHA/AOHG24LA

CARATTERISTICHE

MODELLO		unità interna	AUHF12LA		AUHG12LV						AUHF18LB	
		unità esterna	AOHA12LALL		AOHG12LALL						AOHA18LALL	
			raffreddamento	riscaldamento	raffreddamento	riscaldamento	raffredda				raffreddamento	riscaldamento
capacità nominale [kW]			3,50	4,10	3,50	4,10	4,3				5,20	6,00
alimentazione [V/Ø/Hz]			230/1/50		230/1/50						230/1/50	
range min/max [kW]			0,90/4,40	0,90/5,70	0,90/4,40	0,90/5,70	0,90/5,40	0,90/6,50	0,90/5,40	0,90/6,50	0,90/5,90	0,90/7,50
classe di efficienza energetica			A++	A+	A++	A+	A++	A+	A++	A+	A++	A+
portata aria unità interna / esterna [m^3/h]			600/1780	600/1630	600/1780	600/1630	680/1910	800/1740	680/1910	800/1740	680/2000	800/1910
potenza in ingresso [kW]			1,05	1,11	1,05	1,11	1,33	1,34	1,33	1,34	1,33	1,34
corrente nominale [A]			4,60	4,90	4,80	5,10	5,80	5,9	6,10	6,10	7,10	7,30
rendimento energetico [W/W] EER/COP			3,33	3,69	3,33	3,69	3,21	3,71	3,21	3,71	3,21	3,61
P design c Pdesign h (kW)			-	-	3,50	4,20	-	-	4,30	4,50	-	-
indice di efficienza energetica stagionale SEER/ coefficiente di prestazione stagionale SCOP			-	-	6,20	4,10	-	-	6,40	4,40	-	-
consumo energetico annuale (QCE) (QHE) [kWh/a]			-	-	198	1431	-	-	235	1432	-	-
disturbo	unità interna	pressione sonora [dB(A)]	Hi	37	37	37	37	38	43	38	43	38	43
			Mi	34	34	34	34	34	38	34	38	34	38
			Lo	30	31	30	31	30	34	30	34	30	34
						7	29	27	30	27	30	26	30
		livello potenza sonora [dB(A)]				9	49	50	55	50	55	50	51
	unità esterna	pressione sonora [dB(A)]				7	48	49	49	49	49	50	50
		livello potenza sonora [dB(A)]	Hi	61	63	61	63	62	64	62	64	62	65
capacità deumidificazione [l/h]			1,20		1,20		1,50		1,50		2,20	
dimensioni: h x l x p [mm]	u. interna / u. esterna / griglia				70 / 578x790x300 x700x700		245x570x570 / 578x790x300 50x700x700		245x570x570 / 578x790x300 50x700x700		245x570x570 / 578x790x300 50x700x700	
peso netto [Kg]	u. interna / u. esterna		15/40		15/40		15/40		15/40		15/40	
Ø tubi di collegamento [mm]			6,35/9,52		6,35/9,52		6,35/12,70		6,35/12,70		6,35/12,70	
max. lunghezza / max. dislivello [m] u. interna / u. esterna			25/15		25/15		25/15		25/15		25/15	
precarica standard [m]			15		15		15		15		15	
R410A (Global Warning Potenzial - 1.975) carica aggiuntiva gas [g/m]]			20		20		20		20		20	
intervallo di funzionamento [C°]			-10~46	-15~24	-10~46	-15~24	-10~46	-15~24	-10~46	-15~24	-10~46	-15~24

General
AOHA18LALL
(ST1-18)

Outdoor Unit

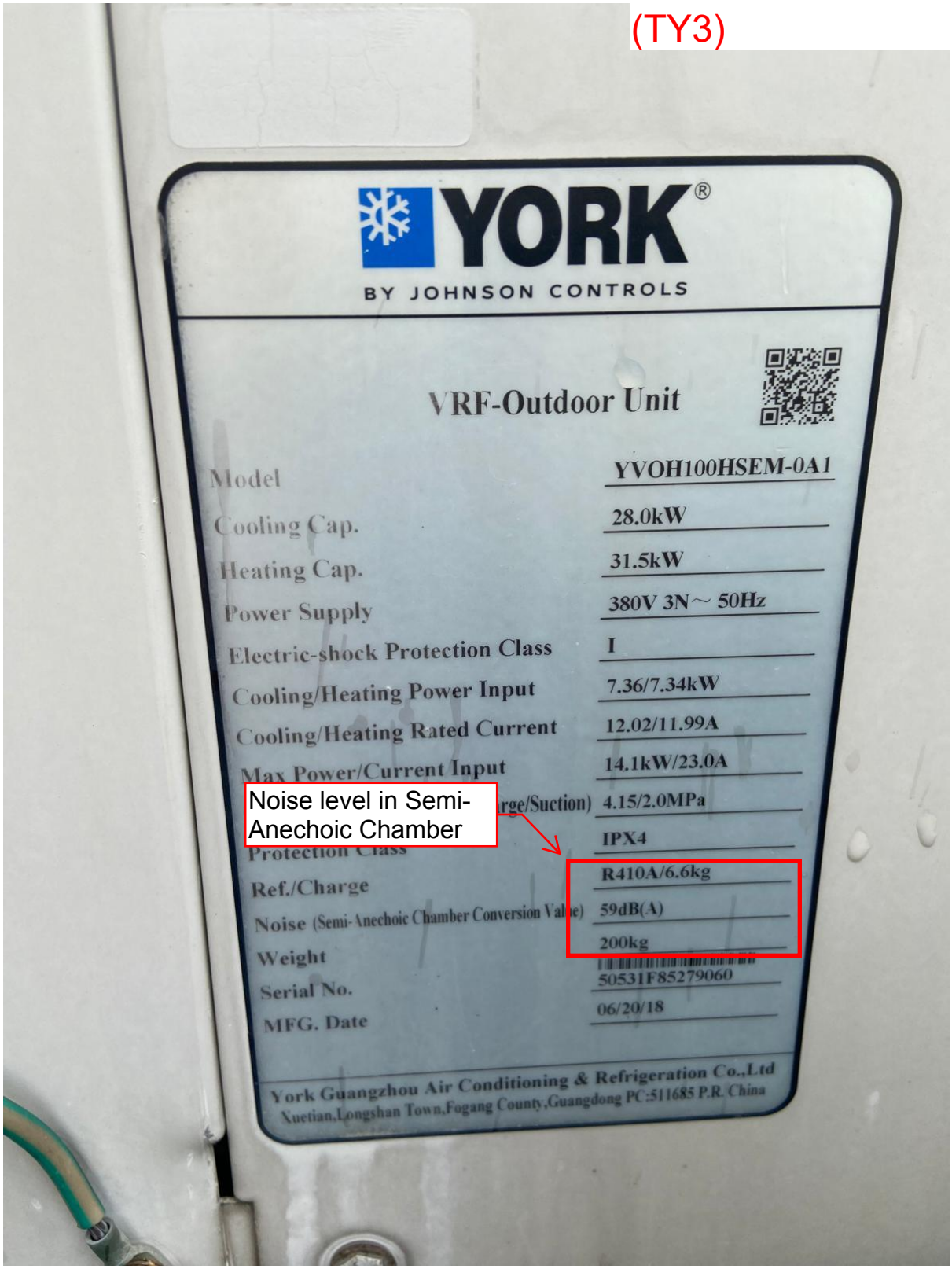
Sound Pressure Level

Sound Power Level

York
YVOH100HSEM-01

TY3

York
YVOH100HSEM-01
(TY3)



Product Specification

York
YVOH100HSEM-01
50Hz (TY3)

YES Slim Outdoor

Outdoor Unit Model		YVOH 080HSEM	YVOH 100HSEM	YVOH 120HSEM
HP		8HP	10HP	12HP
Power Supply (V/Ph/Hz)		380-415/3/50	380-415/3/50	380-415/3/50
Capacity (kW)	Cooling	22.4	28.0	33.5
	Heating	25.0	31.5	35.0
Power (kW)	Cooling	6.19	7.36	9.74
	Heating	5.71	7.34	8.75
Compressor Output (kW)	Nominal	4.80	6.00	7.20
Air Flow (m3/h)	-	9000	9000	10 000
Dimensions (mm)	H×W×D	1600 × 1100 × 400	1600 × 1100 × 400	1600 × 1100 × 400
Weight (kg)	Net Weight	180	200	200
Refrigerant	Type	R410A	R410A	R410A
	Charge (kg)	6.0	6.6	6.6
Noise (dB(A))	Anechoic Sound Level	53	56	58
	Semi-Anechoic Sound Level	56	59	61
Piping (ømm)	Liquid	9.52	9.52	12.70
	Gas	19.05	22.23	25.40
Current (A)	Max Current	20.50	23.00	26.00
	Breaker Current	25.00	32.00	32.00
	Cooling nominal current	10.11	12.02	15.91
	Heating nominal current	9.33	11.99	14.30

Note:

1. Cooling conditions: indoor 27°CDB/ 19°CWB, outdoor 35°CDB, equivalent length 10m, IU/OU height difference 0m.
2. Heating conditions: indoor 20°CDB, outdoor 7°CDB/6°CWB, equivalent length 10m, IU/OU height difference 0m.
3. Noise data is tested in semi-anechoic chamber and converted to equivalent anechoic chamber data. The actual noise data could vary per different installation and working conditions.

DAIKIN

VRV

Reference VRV for TY3 for Fixed Noise Calculation

VRV

Product Catalogue 2023

VRV: Purpose-built to support the decarbonisation of commerical buildings

Climate 360

VRV IV S-series heat pump

Space saving solution without compromising on efficiency

- By choosing this product with LOOP by Daikin you support the reuse of refrigerant
- Space saving trunk design for flexible installation
- Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, air handling units and Biddle air cutains
- Wide range of indoor units: either connect VRV or stylish indoor units such as Daikin Emura, Perfera...
- Wide range of units (4 to 12HP) suitable for projects up to 200m² with space limitations
- Incorporates VRV IV standards & technologies: Variable Refrigerant Temperature and full inverter compressors
- Possibility to limit peak power consumption between 30 and 80%, for example during periods with high power demand
- Contains all standard VRV features

RXYSQ4-6TV9_TY9

LOOP BY DAIKIN

For units made and sold in Europe*

ErP 2021 COMPLIANT

Already fully compliant to LOT 21 - Tier 2

Published data with real-life indoor units

RXYSQ-TV9 / TY9

Outdoor Units			RXYSQ4TV9	RXYSQ5TV9	RXYSQ6TV9	RXYSQ4TY9	RXYSQ5TY9	RXYSQ6TY9
Capacity	Nominal Cooling	kW	12.1	14.0	15.5	12.1	14.0	15.5
	Nominal Heating	kW	12.1	14.0	15.5	12.1	14.0	15.5
ηs,c	Seasonal Efficiency Cooling	%	278.90	270.10	278.00	269.20	260.50	268.30
ηs,h	Seasonal Efficiency Heating	%	171.60	182.90	192.80	154.40	164.50	174.10
Dimensions	Height x Width x Depth	mm	1345 x 900 x 320	1345 x 900 x 320	1345 x 900 x 320	1345 x 900 x 320	1345 x 900 x 320	1345 x 900 x 320
Weight		kg	104	104	104	104	104	104
Air Flow Rate		m³/sec	1.767	1.767	1.767	1.767	1.767	1.767
Electrical Details	Power Supply	Phase / Hz / V	1 / 50 / 230			3 / 50 / 380~415		
	Running Current	amps	14.6	17.9	21.8	5.04	6.15	7.44
	Starting Current	amps	4	4	4	4	4	4
	Fuse Rating	amps	32	32	32	16	16	16
Refrigerant Circuit	Refrigerant Type		R410A					
Sound Pressure (Nom)		dBA	50.0	51.0	51.0	50.0	51.0	51.0
Sound Power (Nom)		dBA	68.0	69.0	70.0	68.0	69.0	70.0
Piping Limits	Maximum Length	m	300	300	300	300	300	300
Piping Connections	Liquid	inch (mm)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)
	Gas	inch (mm)	5/8 (15.9)	5/8 (15.9)	3/4 (19)	5/8 (15.9)	5/8 (15.9)	3/4 (19)
Capacity Index Limit			50 - 130	62.5 - 162.5	70 -182	50 - 130	62.5 - 162.5	70 -182
Maximum Number of Connected Indoor Units			8	10	12	8	10	12

TY3

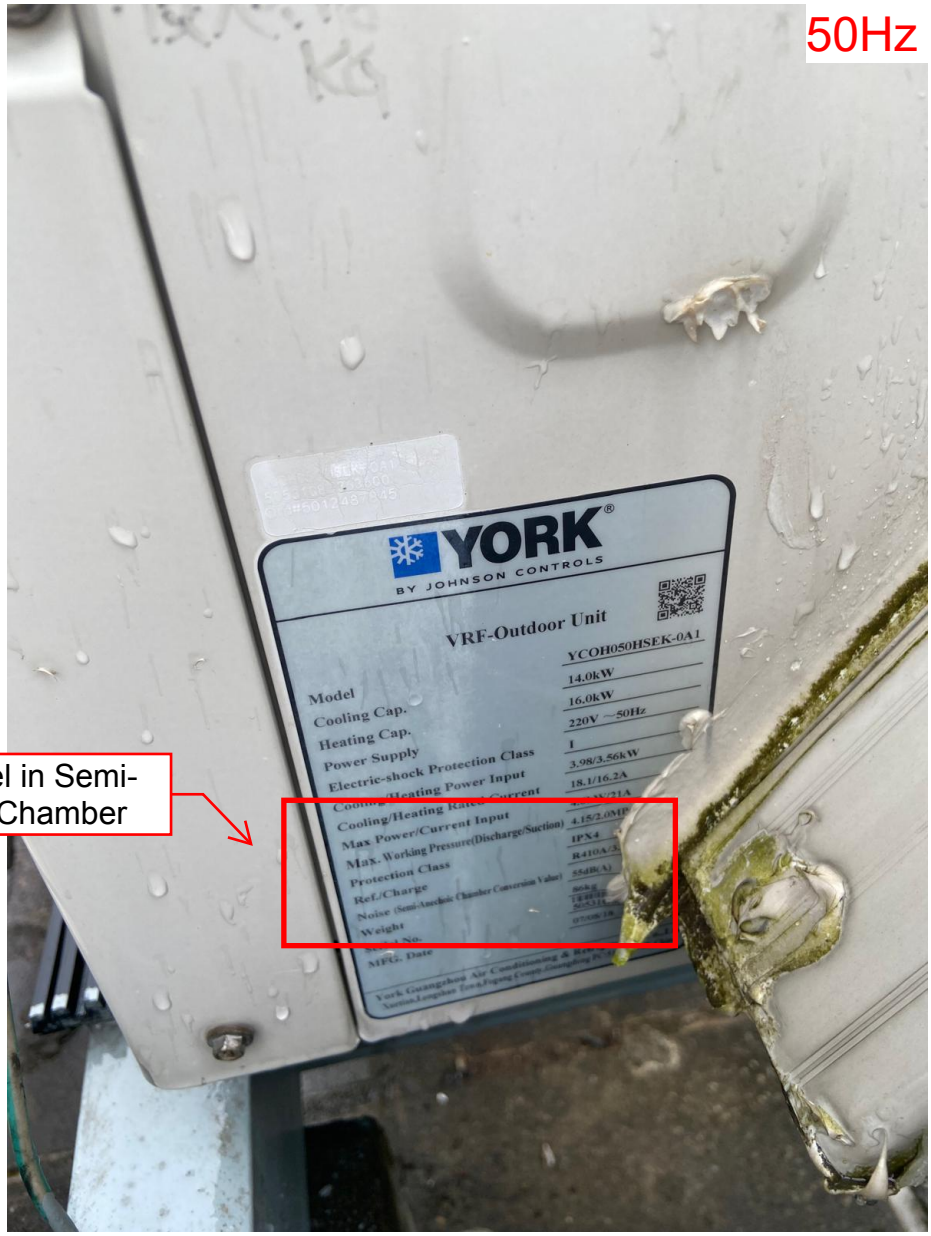
RXYSQ-TY1

Outdoor Units			RXYSQ8TY1	RXYSQ10TY1	RXYSQ12TY1
Capacity	Nominal Cooling	kW	22.4	28.0	33.5
	Nominal Heating	kW	22.4	28.0	33.5
ηs,c	Seasonal Efficiency Cooling	%	247.30	247.40	256.50
ηs,h	Seasonal Efficiency Heating	%	165.80	162.40	169.60
Dimensions	Height x Width x Depth	mm	1430 x 940x320	1615 x 940 x 460	
Weight		kg	144	175	180
Air Flow Rate		m³/sec	2.333	3.033	3.033
Electrical Details	Power Supply	Phase / Hz / V	3 / 50 / 380~415		
	Running Current	amps	11.0	12.1	15.0
	Starting Current	amps	4	4	4
	Fuse Rating	amps	25	25	32
Refrigerant Circuit	Refrigerant Type		R410A		
Sound Pressure (Nom)		dBA	55.0	55.0	57.0
Sound Power (Nom)		dBA	73.0	74.0	76.0
Piping Limits	Maximum Length	m	300	300	300
Piping Connections	Liquid	inch (mm)	3/8 (9.5)	3/8 (9.5)	1/2 (12.7)
	Gas	inch (mm)	3/4 (19)	7/8 (22.2)	1 1/8 (28.6)
Capacity Index Limit			100 - 260	125 - 325	150 - 390
Maximum Number of Connected Indoor Units			17	21	26

York
YCOH050HSEK-0A1

TY 4

York
YCOH050HSEK-0A1
50Hz (TY4)



Noise level in Semi-Anechoic Chamber

APCVAU1605

Reference VRV for TY4 for Fixed Noise Calculation

VRV IV S SERIES



For residential and commercial use

R-410A

Heat Pump 50 Hz

Specifications

Outdoor Units

VRV IV S SERIES — Heat Pump



TY4

MODEL			RXYMQ3AV4A	RXYMQ4AV4A	RXYMQ5AV4A	RXYMQ6AV4A	RXYMQ8AY1	RXYMQ9AY1
Power supply			1-phase, 230–240 V, 50 Hz				3-phase, 380–415 V, 50 Hz	
Cooling capacity		kcal/h	7,740	9,600	12,000	13,800	19,300	20,600
		Btu/h	30,700	38,200	47,800	54,600	76,400	81,900
		kW	9.0	11.2	14.0	16.0	22.4	24.0
Heating capacity		kcal/h	8,600	10,800	12,000	15,500	21,500	22,400
		Btu/h	34,100	42,700	47,800	61,400	85,300	88,700
		kW	10.0	12.5	14.0	18.0	25.0	26.0
Power consumption	Cooling	kW	2.44	2.88	3.93	4.14	5.94	6.88
	Heating		2.28	2.60	3.04	4.07	6.25	6.82
Capacity control		%	24 to 100		16 to 100		20 to 100	
Casing colour			Ivory white (5Y7.5/1)					
Compressor	Type		Hermetically sealed swing type				Hermetically sealed scroll type	
	Motor output	kW	1.92		3.0	3.5	3.8	4.8
Airflow rate		ℓ/s	1,267			1,767	2,333	
		m^3/min	76			106	140	
Dimensions (H×W×D)		mm	990×940×320			1,345×900×320	1,430×940×320	
Machine weight		kg	71		82	104	138	
Sound level (Cooling/Heating)		dB(A)	51/52	52/54	53/54	55/56	57/58	58/59
Sound power		dB(A)	69	70	71	73	75	76
Operation range	Cooling	°CDB	-5 to 46					
	Heating	°CWB	-20 to 15.5					
Refrigerant	Type		R-410A					
	Charge	kg	2.9		3.4	3.6	5.8	
Piping connections	Liquid	mm	ϕ9.5 (Flare)				ϕ9.5 (Brazing)	
	Gas		ϕ15.9 (Flare)			ϕ19.1 (Flare)	ϕ19.1 (Brazing)	ϕ22.2 (Brazing)

Note: Specifications are based on the following conditions;
- Cooling: Indoor temp.: 27°CDB, 19°CWB, Outdoor temp.: 35°CDB, Equivalent piping length: 7.5 m, Level difference: 0 m.
- Heating: Indoor temp.: 20°CDB, Outdoor temp.: 7°CDB, 6°CWB, Equivalent piping length: 7.5 m, Level difference: 0 m.
- Sound level: Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.
  During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- Refrigerant charge is required.

Outdoor unit combinations

MODEL	kW	Class	Capacity index	Total capacity index of connectable indoor unit				Maximum number of connectable indoor units
				Combination (%)				
				50%*1	80%*2	100%	130%	
RXYMQ3AV4A	9.0	3.5	80	40	64	80	104	5
RXYMQ4AV4A	11.2	4	100	50	80	100	130	6
RXYMQ5AV4A	14.0	5	125	62.5	100	125	162.5	8
RXYMQ6AV4A	16.0	6	150	75	120	150	195	9
RXYMQ8AY1	22.4	8	200	100	160	200	260	13
RXYMQ9AY1	24.0	9	225	112.5	180	225	292.5	14

Note: *1. When only *VRV* indoor units are connected, connection ratio must be 50% to 130%.
*2. When a mixed combination of *VRV* and residential indoor units is connected or when only residential indoor units are connected, connection ratio must be 80% to 130%.

The following current *VRV* III S model is also available

VRV III S SERIES — Heat Pump

MODEL			RXYMQ5PV4A
Power supply			1-phase, 230–240 V, 50 Hz
Cooling capacity		Kcal/h	12,000
		Btu/h	47,800
		kW	14.0
Heating capacity		Kcal/h	13,800
		Btu/h	54,600
		kW	16.0
Power consumption	Cooling	kW	3.97
	Heating		4.09
Capacity control		%	24 to 100
Casing colour			Ivory white (5Y7.5/1)
Compressor	Type		Hermetically sealed scroll type
	Motor output	kW	3.0
Airflow rate		ℓ/s	1,767
		m^3/min	106
Dimensions (H x W x D)		mm	1,345 x 900 x 320
Machine weight		kg	125
Sound level (Cooling/Heating)		dB(A)	51/53
Sound power		dB(A)	69
Operation range	Cooling	°CDB	-5 to 46
	Heating	°CWB	-20 to 15.5
Refrigerant	Type		R-410A
	Charge	kg	4.0
Piping connections	Liquid	mm	ϕ9.5 (Flare)
	Gas		ϕ15.9 (Flare)

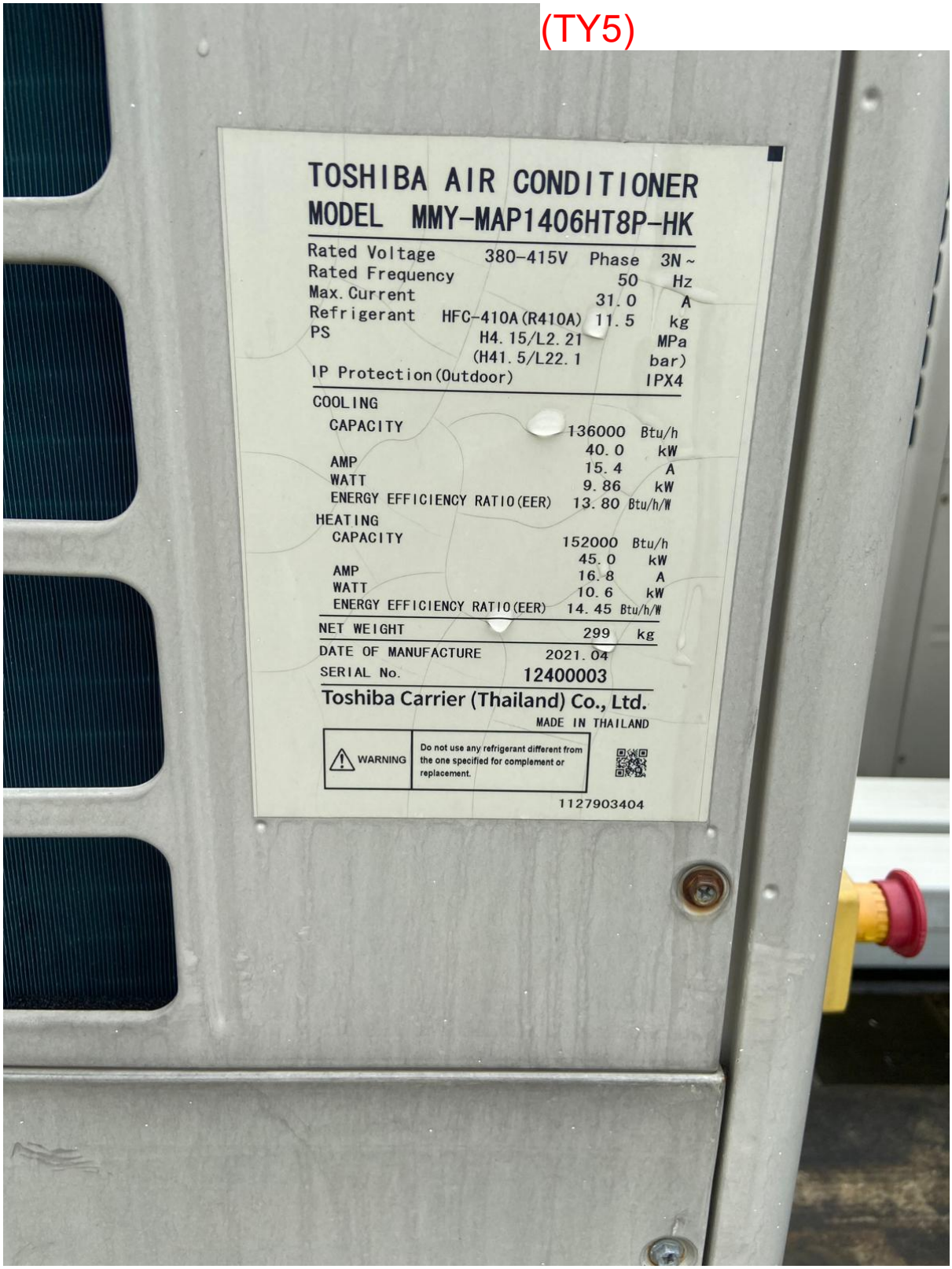
Note: Specifications are based on the following conditions;
- Cooling: Indoor temp.: 27°CDB, 19.5°CWB, Outdoor temp.: 35°CDB, Equivalent piping length: 7.5 m, Level difference: 0 m.
- Heating: Indoor temp.: 20°CDB, Outdoor temp.: 7°CDB, 6°CWB, Equivalent piping length: 7.5 m, Level difference: 0 m.
- Sound level: Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.
  During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- Refrigerant charge is required.

Please refer to the *VRV* III S series brochure and Engineering Data Book for more information.

TOSHIBA
MMY-MAP1406HT8P-HK

TY 5

TOSHIBA
MMY-MAP1406HT8P-HK
(TY5)



Outdoor unit specifications

Standard model (Single unit)

Technical specifications

Equivalent HP				8HP	10HP	12HP
Model name	Heat Pump	50Hz	(MMY-)	MAP0806HT8P-ME	MAP1006HT8P-ME	MAP1206HT8P-ME
Outdoor unit type				Inverter		
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V)		
Cooling (*)	Capacity 100%		(kW)	22.4	28.0	33.5
	Power consumption		(kW)	4.84	6.28	8.24
	EER (Energy efficiency ratio)			4.63	4.46	4.07
Cooling (**)	Capacity 100%		(kW)	20.3	25.2	26.8
	Power consumption		(kW)	6.54	8.75	8.98
	EER (Energy efficiency ratio)			3.1	2.88	2.98
Heating (*2)	Capacity 100%		(kW)	25.0	31.5	37.5
	Power consumption		(kW)	5.38	7.08	9.24
	COP (Coefficiency of performance)			4.65	4.45	4.06
Starting Current			(A)	Soft Start		
External dimensions (Height / Width / Depth)			(mm)	1,800 / 990 / 780	1,800 / 990 / 780	1,800 / 990 / 780
Total weight	Heat Pump		(kg)	242	242	242
Compressor	Quantity		(nos)	2	2	2
Fan unit	Air volume		(m³/h)	9,700	9,700	12,200
Refrigerant R410A(Charged refrigerant amount)			(kg)	11.5	11.5	11.5
Refrigerant piping	Main pipe diameter	Gas side	(mm)	Φ19.1	Φ22.2	Φ28.6
		Liquid side	(mm)	Φ12.7	Φ12.7	Φ12.7
		Balance pipe	(mm)	Φ9.5	Φ9.5	Φ9.5
Sound pressure level (Cooling/Heating)			(dB(A))	55 / 56		
Sound power level (Cooling/Heating)			(dB(A))	74 / 74		
Connectable indoor units			(nos)	13		

TOSHIBA
MMY-MAP1406HT8P-HK
(TY5)

Standard model (Single unit)

Technical specifications

Equivalent HP				14HP	16HP	18HP	20HP
Model name	Heat Pump	50Hz	(MMY-)	MAP1406HT8P-ME	MAP1606HT8P-ME	MAP1806HT8P-ME	MAP2006HT8P-ME
Outdoor unit type				Inverter			
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V)			
Cooling (*)	Capacity 100%		(kW)	40.0	45.0	50.4	56.0
	Power consumption		(kW)	9.90	12.1	12.3	15.5
	EER (Energy efficiency ratio)			4.04	3.72	4.1	3.61
Cooling (**)	Capacity 100%		(kW)	32.5	36.0	42.8	44.8
	Power consumption		(kW)	11.6	12.5	14.2	14.9
	EER (Energy efficiency ratio)			2.80	2.88	3.01	3.01
Heating (*2)	Capacity 100%		(kW)	45.0	50.0	56.0	63.0
	Power consumption		(kW)	10.6	12.50	13.6	16.5
	COP (Coefficiency of performance)			4.25	4.00	4.12	3.82
Starting Current			(A)		Soft Start		
External dimensions (Height / Width / Depth)			(mm)	1,800 / 1,210 / 780	1,800 / 1,210 / 780	1,800/1,600/780	1,800/1,600/780
Total weight	Heat Pump		(kg)	299	299	370	370
Compressor	Quantity		(nos)	2	2	2	2
Fan unit	Air volume		(m³/h)	12,200	12,600	17,300	17,900
Refrigerant R410A (Charged refrigerant amount)			(kg)	11.5	11.5	11.5	11.5
Refrigerant piping	Main pipe diameter	Gas side	(mm)	Φ28.6	Φ28.6	Φ28.6	Φ28.6
		Liquid side	(mm)	Φ15.9	Φ15.9	Φ15.9	Φ15.9
		Balance pipe	(mm)	Φ9.5	Φ9.5	Φ9.5	Φ9.5
Sound pressure level (Cooling/Heating)			(dB(A))	60 / 62			61 / 62
Sound power level (Cooling/Heating)			(dB(A))	80 / 82			80 / 82
Connectable indoor units			(nos)	23	27	30	33

Sound Power Level

Protective devices: Discharge temp. sensor / Suction temp. sensor / High-pressure sensor Low-pressure sensor / High-pressure switch / PC board fuse

*1 The source voltage must not fluctuate more than ±10%.

* Indoor temperature: 26.7°C DB/19.4°CWB, outdoor temperature: 35°C DB (AHRI 1230 standard).

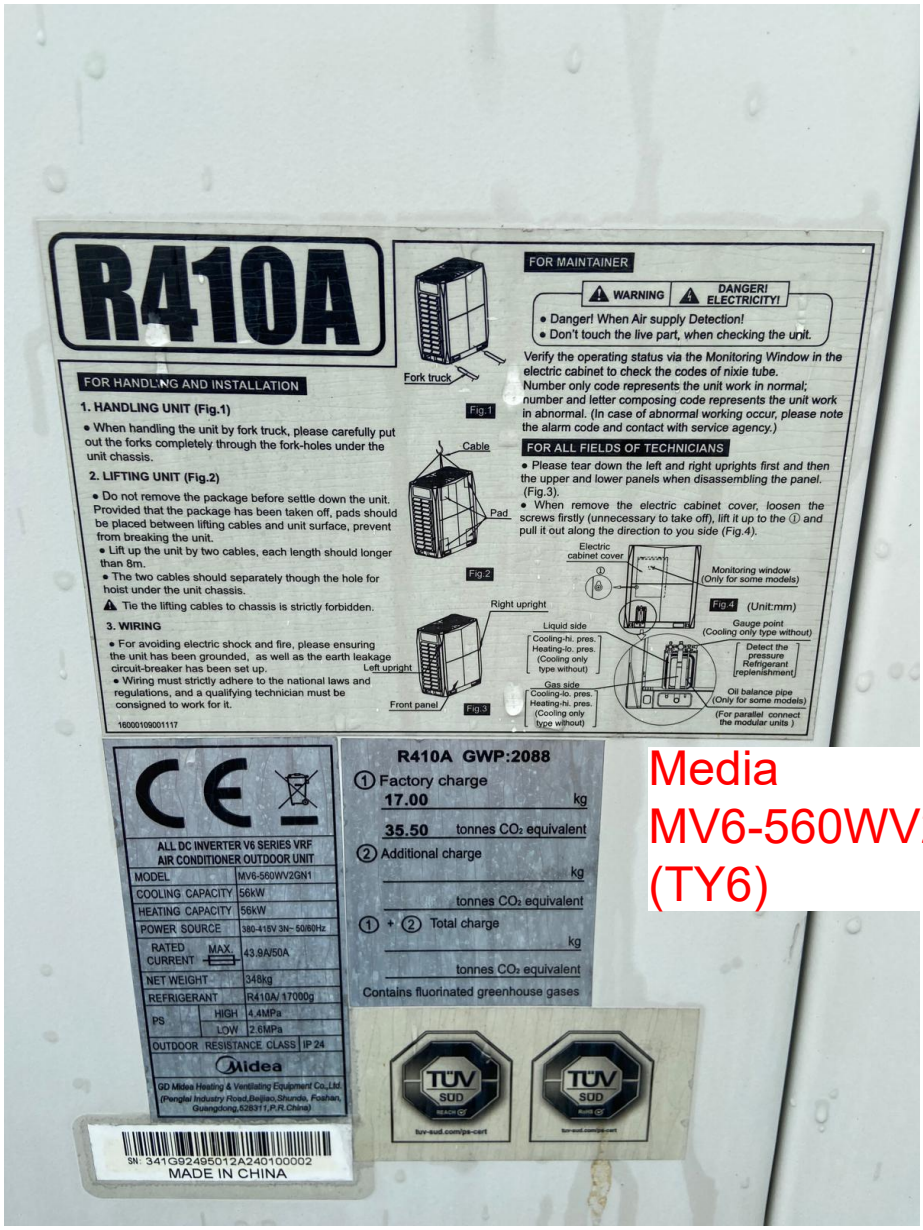
** Indoor temperature: 29°C DB/19°CWB, outdoor temperature: 46°C DB (ISO 15042 standard).

*2 Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

TY-6

Media
MV6-560WV2GN1

Media
MV6-560WV2GN1
(TY6)



Media
MV6-560WV2GN1
(TY6)

Working Range	Heating	°C	-25 ila 24			
Capacity		HP	16	18	20	22
Model			MV6-450WV2GN1-E	MV6-500WV2GN1-E	MV6-560WV2GN1-E	MV6-615WV2GN1-E
Power source		V / Ph / Hz	380-415/3/50			
Cooling[1]	Capacity	kW	45.0	50.0	56.0	61.5
		kBut/h	153.5	170.6	191.1	209.8
	Power Input	kW	12.0	12.5	15.1	18.4
	HONOUR	kW / kW	3.75	4.00	3.70	3.35
Heating[2]	Capacity	kW	45.0	50.0	56.0	61.5
		kBut/h	153.5	170.6	191.1	209.8
	Power Input	kW	9.8	10.6	12.7	15.0
	COP	kW / kW	4.60	4.70	4.40	4.10
Connectable indoor unit	Total Capacity		50-130% of outdoor unit capacity			
	Max. Capacity		26	29	33	36
compressors	Tip		DC inverter			
	Quantity		1	2		
fan motors	Tip		DC			
	Quantity		1	2		
	Maks. IT	Well	20 Default; 60 Personalization			
Cooler liquid	Tip		R410A			
	Factory Filling	kg	13	17		
Pipe Connections[3]	Liquid Pipe	mm	Φ15.9	Φ19.1		
	Gas Pipe	mm	Φ31.8	Φ31.8		
Airflow Rate		m^3/h	13000	17000		
Sound Pressure Level[4]		dB(A)	65		66	
Sound Power Level		dB(A)	88			
Net Dimensions (WxHxD)		mm	1340×1635×850	1340×1635×825		
Packaged Dimensions (WxHxD)		mm	1405×1805×910			
Net weight		kg	277	348		
Gross weight		kg	304	368		
Ambient temperature Working Range	Cooling	°C	-5 night 48			
	Heating	°C	-25 ila 24			

Capacity		HP	24	26	28
Model			MV6-670WV2GN1-E	MV6-730WV2GN1-E	MV6-785WV2GN1-E
Power source		V / Ph / Hz	380-415/3/50		
Cooling[1]	Capacity	kW	67.0	73.0	78.5
		kBut/h	228.6	249.1	267.8
	Power Input	kW	18.1	20.9	24.2
	HONOUR	kW / kW	3.70	3.49	3.25
Heating[2]	Capacity	kW	67.0	73.0	78.5
		kBut/h	228.6	249.1	267.8
	Power Input	kW	15.33	18.11	21.27
	COP	kW / kW	4.37	4.03	3.69

Sound Power Level

Media
MV6-560WV2GN1
(TY6)

TOP

Reference chiller for Japanese International School (JIS) 1-4 in fixed noise calculation

Air Cooled Screw Chiller and Heat Pump

150kW~1180kW
44.6Ton~334.9Ton

Application areas

- Offices, Hotels, Hospitals
- Industry
- Administration
- Medium and large commercial buildings

Why this choice?

- High efficiency
- Very low noise operation
- Screw compressors
- Advanced control
- Reduced total cost of ownership

Characteristics

The compressor

The unit is equipped with semi-hermetic screw compressor, compared with the piston compressor, semi-hermetic screw compressor has two advantages:

• Less parts(About 1/3 of the piston compressor), simple structure, less wearing parts, high reliability and long life.
• Compressor suction and exhaust uniform, exhaust temperature is low, vibration is small, not sensitive to wet compression, anti-liquid strike ability.

Tube-fin air-cooled condenser

The tube-fin air-cooled condenser adopts the inverted "V" type layout, on the one hand, it improves the space utilization ratio, increases the heat exchange area, on the other hand, it improves the airflow and heat transfer efficiency, so that improve the unit's cooling and heating capacity.

Throttling equipment

For expansion valve, we select the most advanced products, with a compact overall design, rugged stainless steel diaphragm, and in a wide range of operating conditions to provide stable and accurate control.

Tube-shell evaporator

Using shell and tube structure, the outside is proceeded with fire-retardant,waterproof insulation materials, water side of the working pressure is 1.0MPa.

Evaporator with PVC plastic water board, corrosion resistance. Chilled water along the diaphragm up and down circuitous flow, in order to increase the spoiler effect to improve the evaporator heat transfer capacity.

Using the latest DAC corrugated spiral high efficiency heat transfer tubes, strengthen the fluorine side heat transfer capacity, improve the heat transfer coefficient to ensure that the unit good refrigeration and heating performance.

Electronic control

Air-cooled hot and cold water unit uses a microcomputer as the core of the control system, the control system control precision, anti-interference ability to ensure that the unit safe, reliable and economical operation.

Energy regulation automatic control can make the unit always in the best economic mode point efficient operation.

Protection function complete unit with overload, short circuit protection, frost protection, high and low voltage protection, overheating protection and other functions.

Technical Data

Model	Unit	AW150	AW180	AW250	AW320	AW380	AW430	AW500
Cooling capacity *	kW	156	180	250	320	380	428	497.6
	Ton	44.6	51.4	71.4	91.4	108.6	122.3	142.2
Heating capacity *	kW	180	198	276	353	416	474	550
	Ton	51.4	56.6	78.9	100.9	118.9	124.7	157.1
Compressor								
Qty	Nr.	1	1	1	1	1	2	2
Cooling power input *	kW	49.3	54.2	77.4	96.7	114	131.6	154.8
Cooling current *	A	87.8	95.2	134	166	199	229.2	268
Heating power input *	kW	48.4	53.2	76	95	112	129.2	152
Heating current *	A	86.5	93.7	132	164	196	225.7	264
Energy adjustment steps	step	4	4	4	4	4	8	8
Evaporator								
Water flow rate	m^3/h	26.7	31	42.8	54.8	65	74	85.6
Water side pressure drop	kPa	41	41	42	42	42	42	43
Water pipe	DN	100	100	100	125	125	125	125
Axial Fan								
Fan motor number	Nr.	4	4	6	6	8	10	12
Power input	kW	4*2.2	4*2.2	6*2.2	6*2.2	8*2.2	10*2.2	12*2.2
Current input	A	4*5.6	4*5.6	6*5.6	6*5.6	8*5.6	10*5.6	12*5.6
Air flow	m^3/h	68000	96000	144000	144000	196000	240000	288000
Dimensions								
Length	mm	2500	2500	3300	3590	4680	5800	6790
Width	mm	2160	2160	2160	2160	2160	2160	2160
Height	mm	2450	2450	2450	2450	2450	2450	2450
Sound pressure level **	dB(A)	73	73	75	75	78	80	81
Net weight	kg	2050	2350	2750	3150	3650	4800	5250

Technical Data

Model	Unit	AW570	AW640	AW700	AW760	AW870	AW930	AW1000	AW1180
Cooling capacity *	kW	568	637.8	700	758	868	923.8	992.8	1172
	Ton	162.3	182.2	200	216.6	248	263.9	283.7	334.9
Heating capacity *	kW	630	706	772	827	953	1014	1086	1264
	Ton	180	201.7	220.6	236.3	272.3	289.7	310.3	361.1
Compressor									
Qty	Nr.	2	2	2	2	3	3	3	3
Cooling power input *	kW	174.1	193.4	210.7	228	268.8	286.4	309.6	348.2
Cooling current *	A	300	332	365	398	467	497.2	536	600.4
Heating power input *	kW	171	190	207	224	264	281.2	304	342
Heating current *	A	296	328	360	392	460	489.7	528	591.2
Energy adjustment steps	step	8	8	8	8	12	12	12	12
Evaporator									
Water flow rate	m^3/h	97.4	109.7	120	130	149	159	170.8	201.6
Water side pressure drop	kPa	43	44	45	45	45	45	45	45
Water pipe	DN	125	150	150	150	150	150	150	200
Axial fan									
Fan motor number	Nr.	12	12	14	16	18	18	18	20
Power input	kW	12*2.2	12*2.2	14*2.2	16*2.2	18*2.2	18*2.2	18*2.2	20*2.2
Current input	A	12*5.6	12*5.6	14*5.6	16*5.6	18*5.6	18*5.6	18*5.6	20*5.6
Air flow	m^3/h	288000	288000	333600	384000	432000	432000	432000	576000
Dimensions									
Length	mm	6790	7190	8280	9370	10290	10580	10980	11780
Width	mm	2160	2160	2160	2160	2160	2160	2160	2160
Height	mm	2450	2450	2450	2450	2450	2450	2450	2450
Sound pressure level **	dB(A)	81	81	82	83	83	83	83	83
Net weight	kg	5600	6150	6900	7600	8900	9650	10000	11000

* The performance values refer to the following conditions:
Cooling: ambient air temperature 35°C; evaporator water in/out temperature 12/7°C.
Heating: ambient air temperature DB 7°C, WB 6°C; condenser water in/out temperature 40/45°C

** Sound pressure measured at a distance of 1 m and a height of 1.5 m above the ground in a clear field.

Reference Chiller for Sound Power Level Supporting

LDA

AIR COOLED WATER CHILLERS WITH AXIAL FANS

Cooling capacity from 20 kW to 390 kW

LDA water chillers are efficient, low-noise products designed for medium to large applications.

They are suitable for generating chilled water at temperatures in the region of 7°C, commonly used in applications with fan coils and/or air handling units.

The use of tandem scroll compressors results in high efficiencies (especially at part loads) and low noise levels, making them suitable for use in many applications.

Differing versions and a wide range of accessories, enable the optimal solution to be selected.

VERSIONS

CO	Cooling only.
SA	Standard efficiency, AC fans. Only for the non-EU market
SE	Standard efficiency, EC fans.
HA	High efficiency, AC fans.
HE	High efficiency, EC fans.

Hidros
INNOVATION AS ENERGY

HA/XL/CO		252	302	412	432	492	602	702	802	902	1002	1202	1402
Cooling capacity (EN14511) (1)	kW	20,5	27,0	31,9	42,6	46,1	54,0	61,2	68,1	80,7	91,2	103,2	118,8
Total input power (EN14511) (1)	kW	6,6	8,7	10,2	13,7	14,9	17,4	19,6	22,0	25,4	29,4	33,3	36,9
EER (EN14511) (1)	W/W	3,11	3,10	3,14	3,11	3,10	3,11	3,12	3,10	3,18	3,10	3,10	3,22
SEER (2)	kWh/kWh	4,14	4,11	4,15	4,13	4,11	4,16	4,15	4,15	4,16	4,17	4,16	4,20
ηs,c (2)	%	162	161	163	162	161	163	163	163	163	164	163	165
Sound power (3)	dB (A)	70	70	70	70	72	72	72	73	75	77	78	80
Sound pressure (4)	dB (A)	38	38	38	38	40	40	40	41	43	45	46	48
Water tank volume	l	100	100	100	100	100	300	300	300	300	300	300	500
HE/XL/CO		**252**	**302**	**412**	**432**	**492**	**602**	**702**	**802**	**902**	**1002**	**1202**	**1402**
Cooling capacity (EN14511) (1)	kW	20,5	27,0	31,4	42,6	46,1	54,0	61,2	68,1	80,7	91,2	103,2	118,8
Total input power (EN14511) (1)	kW	6,6	8,7	10,1	13,7	14,8	17,2	19,6	21,9	25,4	29,2	33,2	36,9
EER (EN14511) (1)	W/W	3,12	3,11	3,12	3,11	3,11	3,14	3,13	3,11	3,18	3,12	3,11	3,22
SEER (2)	kWh/kWh	4,35	4,32	4,44	4,25	4,30	4,35	4,30	4,25	4,40	4,43	4,30	4,50
ηs,c (2)	%	171	170	175	167	169	171	169	167	173	174	169	177
Sound power (3)	dB (A)	64	65	68	70	72	72	72	73	75	77	78	80
Sound pressure (4)	dB (A)	32	33	36	38	40	40	40	41	43	45	46	48
Power supply	V/Ph/Hz	400/3+N/50	400/3+N/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Compressors / Circuits	n° / n°	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1
Fans	n°	2	2	2	2	2	2	2	2	2	2	2	3
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	6,5	6,5	6,5	10,0	8,5	8,5	14,5	14,5	19,0	19,0	20,0	28,0
Global warming potential (GWP)		2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	13,57	13,57	13,57	20,88	17,74	17,74	30,27	30,27	39,67	39,67	41,76	58,46
Water tank volume	l	100	100	100	100	100	300	300	300	300	300	300	500

HA/XL/CO		1602	1802	2002	2302	2502	2504	3004	3204	3504	4004	4504
Cooling capacity (EN14511) (1)	kW	130,1	150,1	166,8	189,1	211,0	208,5	236,0	264,0	297,8	337,4	383,5
Total input power (EN14511) (1)	kW	42,0	48,1	53,8	60,8	67,8	67,3	75,6	84,9	95,8	108,5	123,7
EER (EN14511) (1)	W/W	3,10	3,12	3,10	3,11	3,11	3,10	3,12	3,11	3,11	3,11	3,10
SEER (2)	kWh/kWh	4,11	4,25	4,12	4,27	4,15	4,14	4,22	4,20	4,30	4,20	4,25
ηs,c (2)	%	161	167	162	168	163	163	166	165	169	165	167
Sound power (3)	dB (A)	81	81	81	83	84	81	83	84	84	84	86
Sound pressure (4)	dB (A)	49	49	49	51	52	49	51	52	52	52	54
Water tank volume	l	500	500	500	500	500	1000	1000	1000	1000	1000	1000
HE/XL/CO		**1602**	**1802**	**2002**	**2302**	**2502**	**2504**	**3004**	**3204**	**3504**	**4004**	**4504**
Cooling capacity (EN14511) (1)	kW	130,1	150,1	166,8	189,1	211,0	208,5	236,0	264,0	297,8	337,4	383,5
Total input power (EN14511) (1)	kW	42,0	48,1	53,6	60,8	67,8	67,3	75,6	84,9	95,4	108,5	122,9
EER (EN14511) (1)	W/W	3,10	3,12	3,11	3,11	3,11	3,10	3,12	3,11	3,12	3,11	3,12
SEER (2)	kWh/kWh	4,40	4,45	4,35	4,35	4,28	4,30	4,40	4,35	4,38	4,30	4,40
ηs,c (2)	%	173	175	171	171	168	169	173	171	172	169	173
Sound power (3)	dB (A)	81	81	81	83	84	81	83	84	84	84	86
Sound pressure (4)	dB (A)	49	49	49	51	52	49	51	52	52	52	54
Power supply	V/Ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Compressors / Circuits	n° / n°	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2
Fans	n°	3	3	3	3	3	4	6	6	6	6	8
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	30,0	30,0	30,0	30,0	40,0	40,0	50,0	60,0	50,0	60,0	90,0
Global warming potential (GWP)		2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	62,64	62,64	62,64	62,64	83,52	83,52	104,40	152,28	104,40	152,28	187,92
Water tank volume	l	500	500	500	500	500	1000	1000	1000	1000	1000	1000

Sound Power Level

Number of fan

Performances are referred to the following conditions:

(1) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C.

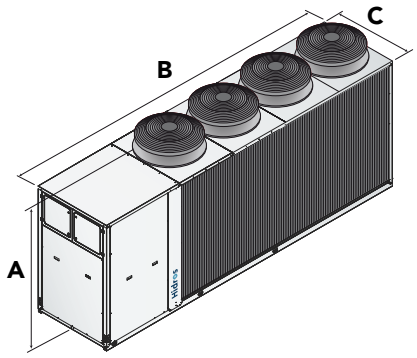
(2) In accordance with (EU) 2016/2281 and relative norms part of this

(3) Sound power level in accordance with ISO 3744.

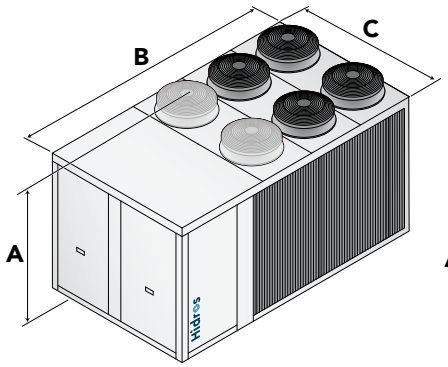
(4) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

LDA		2502	2504	3004	3204	3504	4004	4504	5004
Flow switch		●	●	●	●	●	●	●	●
"Floating frame" Technology - LS Version		–	–	–	–	–	–	–	–
"Floating frame" Technology - XL Version		●	●	●	●	●	●	●	●
E.C. fans - SA versions	VECE	–	–	–	–	–	–	–	–
E.C. fans - SE versions	VECE	●	●	●	●	●	●	●	●
E.C. fans - HA versions	VECE	–	–	–	–	–	–	–	–
E.C. fans - HE versions	VECE	●	●	●	●	●	●	●	●
Evap/cond. press. control by transducer and fan speed control	DCCF	O	O	O	O	O	O	O	O
Antifreeze kit for 2 pipe units	RAEV2	O	O	O	O	O	O	O	O
Electronic soft starter	DSSE	O	O	O	O	O	O	O	O
Serial interface card RS485	INSE	O	O	O	O	O	O	O	O
Rubber anti-vibration mountings	KAVG	O	O	O	O	O	O	O	O
Remote control panel	PCRL	O	O	O	O	O	O	O	O
Electronic expansion valve	VTEE	O	O	O	O	O	O	O	O
Cascade control system via RS485	SGRS	O	O	O	O	O	O	O	O
Hydraulic kit with one pump with tank	A1ZZU	O	O	O	O	O	O	O	O
Hydraulic kit with two pumps with tank	A2ZZU	O	O	O	O	O	O	O	O
Hydraulic kit with one pump without tank	A1NTU	O	O	O	O	O	O	O	O
Hydraulic kit with two pumps without tank	A2NTU	O	O	O	O	O	O	O	O

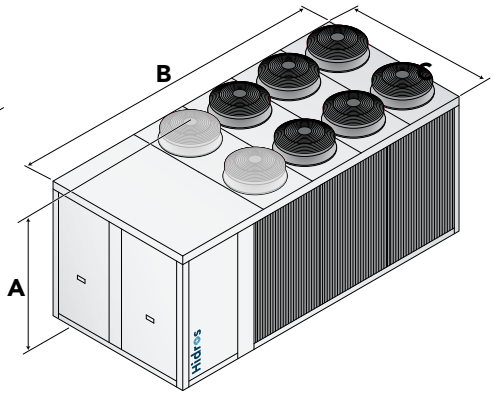
● Standard O Optional – Not available



SA/SE-LS/XL 2504 - 3004 - 3204



SA/SE-LS/XL 3504 - 4004
HA/HE-LS/XL 2504 - 3004 - 3204 - 3504



SA/SE-LS/XL 4504 - 5004
HA/HE-LS/XL 4004 - 4504 - 5004

		2502	2504	3004	3204	3504	4004	4504	5004
A	**SA-SE/LS**	2310	2310	2310	2310	2350	2350	2380	2380
B	**SA-SE/LS**	4505	5300	5300	5300	4205	4205	4810	4810
C	**SA-SE/LS**	1150	1150	1150	1150	2210	2210	2210	2210
kg	**SA-SE/LS**	2000	2460	2500	2580	3170	3220	3550	3650
A	**SA-SE/XL**	2310	2310	2310	2310	2350	2350	2380	2380
B	**SA-SE/XL**	4505	5300	5300	5300	4205	4205	4810	4810
C	**SA-SE/XL**	1150	1150	1150	1150	2210	2210	2210	2210
kg	**SA-SE/XL**	2000	2460	2500	2580	3170	3220	3550	3650
A	**HA-HE/LS**	2270	2350	2350	2350	2350	2380	2380	2380
B	**HA-HE/LS**	3905	4205	4205	4205	4205	4805	4810	4810
C	**HA-HE/LS**	1150	2210	2210	2210	2210	2210	2210	2210
kg	**HA-HE/LS**	1780	3120	3170	3220	3270	3610	3670	3720
A	**HA-HE/XL**	2270	2350	2350	2350	2350	2380	2380	2380
B	**HA-HE/XL**	3905	4205	4205	4205	4205	4805	4810	4810
C	**HA-HE/XL**	1150	2210	2210	2210	2210	2210	2210	2210
kg	**HA-HE/XL**	1810	3170	3220	3270	3320	3660	3720	3770

Size of chiller

MITSUBISHI ELECTRIC
HYDRONICS & IT COOLING SYSTEMS

Reference Chiller for Sound Power Level Supporting

Data Book

NX-N-G06 0202P - 0812P_202107_EN R454B
ELCA_Engine ver.4.5.5.5

HEATING
COOLING

NX-N-G06 0202P - 0812P

44,9-211 kW
Reversible unit, air source for outdoor installation

R454B
SCROLL
PLATES

(The photo of the unit is indicative and may vary depending on the model)

- LOW GWP REFRIGERANT
- WIDE OPERATING LIMITS
- ELECTRONIC EXPANSION VALVE
- CLASS A EFFICIENCY
- TWO SOUND EMISSION LEVELS
- INTEGRATED HYDRONIC GROUP

CLIMAVENETA®

[SI System]

NX-N-G06/LN-CA			0712P	0812P
Power supply		V/ph/Hz	400/3/50	400/3/50
PERFORMANCE				
COOLING ONLY (GROSS VALUE)				
Cooling capacity	(1)	kW	**181,4**	**203,9**
Total power input	(1)	kW	59,49	65,30
EER	(1)	kW/kW	3,049	3,123
COOLING ONLY (EN14511 VALUE)				
Cooling capacity	(1)(2)	kW	181,0	203,6
EER	(1)(2)	kW/kW	3,000	3,070
HEATING ONLY (GROSS VALUE)				
Total heating capacity	(3)	kW	**200,9**	**222,9**
Total power input	(3)	kW	60,06	66,34
COP	(3)	kW/kW	3,343	3,362
HEATING ONLY (EN14511 VALUE)				
Total heating capacity	(3)(2)	kW	201,2	223,4
COP	(3)(2)	kW/kW	3,290	3,300
COOLING WITH PARTIAL RECOVERY				
Cooling capacity	(4)	kW	188,2	211,5
Total power input	(4)	kW	57,64	63,24
Desuperheater heating capacity	(4)	kW	**47,21**	**52,40**
EXCHANGERS				
HEAT EXCHANGER USER SIDE IN COOLING				
Water flow	(1)	l/s	8,673	9,751
Pressure drop at the heat exchanger	(1)	kPa	45,6	57,7
HEAT EXCHANGER USER SIDE IN HEATING				
Water flow	(3)	l/s	9,696	10,76
Pressure drop at the heat exchanger	(3)	kPa	57,0	70,2
PARTIAL RECOVERY USER SIDE IN REFRIGERATION				
Water flow	(4)	l/s	2,279	2,529
Pressure drop at the heat exchanger	(4)	kPa	18,6	23,0
REFRIGERANT CIRCUIT				
Compressors nr.		N°	2	2
Number of capacity steps		N°	2	2
No. Circuits		N°	1	1
Regulation			2xSTEPS	2xSTEPS
Min. capacity step		%	50	50
Refrigerant			R454B	R454B
Theoretical refrigerant charge		kg	54,3	63,8
Oil charge		kg	10,6	10,6
Rc (ASHRAE)	(5)	kg/kW	0,30	0,32
FANS				
Quantity		N°	6	6
Air flow		m³/s	24,18	22,96
Total fans power input		kW	6,60	6,60
NOISE LEVEL				
Total sound Pressure	(6)	dB(A)	66	67
Total sound power level in cooling	(7)(8)	dB(A)	86	87
Total sound power level in heating	(7)(9)	dB(A)	87	88
SIZE AND WEIGHT				
A		mm	5110	5110
B		mm	2220	2220
H		mm	2150	2150
Operating weight	(10)	kg	2080	2210

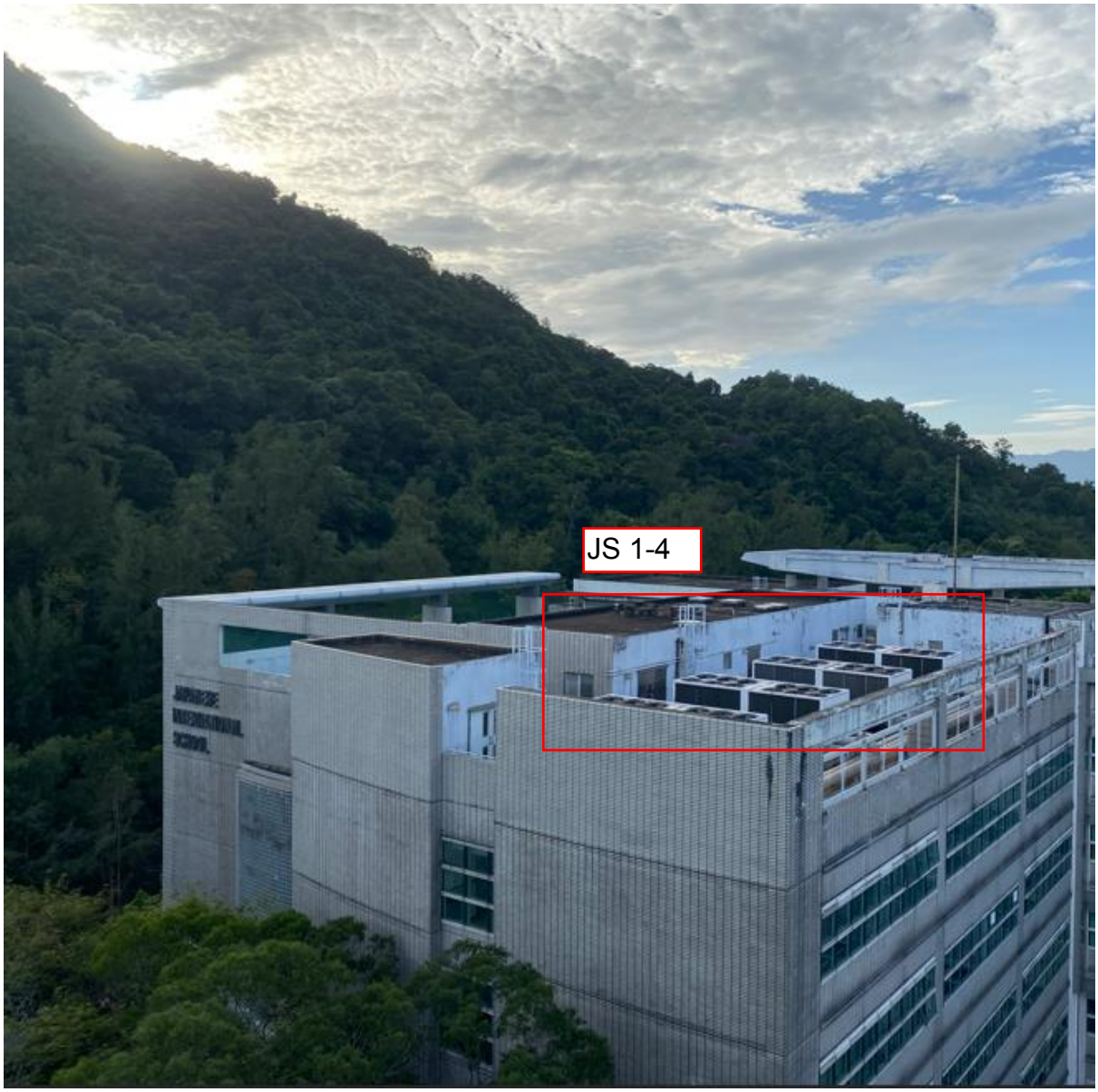
Number of Fan

Sound Power of Chiller

Size of chiller

Notes:
1 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C.
2 Values in compliance with EN14511
3 Plant (side) heat exchanger water (in/out) 40,00°C/45,00°C; Source (side) heat exchanger air (in) 7,0°C - 87% R.H.
4 Plant (side) cooling exchanger water (in/out) 12,00°C/7,00°C; Source (side) heat exchanger air (in) 35,0°C; Plant (side) heat exchanger recovery water (in/out) 40,00°C/45,00°C.
5 Rated in accordance with AHRI Standard 550/590
6 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
7 Sound power on the basis of measurements taken in compliance with ISO 9614.
8 Sound power level in cooling, outdoors.
9 Sound power level in heating, outdoors.
10 Unit in standard configuration, without optional accessories.
- Not available
Data certified in EUROVENT

Record in roof level of PLK Tin Ka Ping Millennium Primary School with 106.3mPD



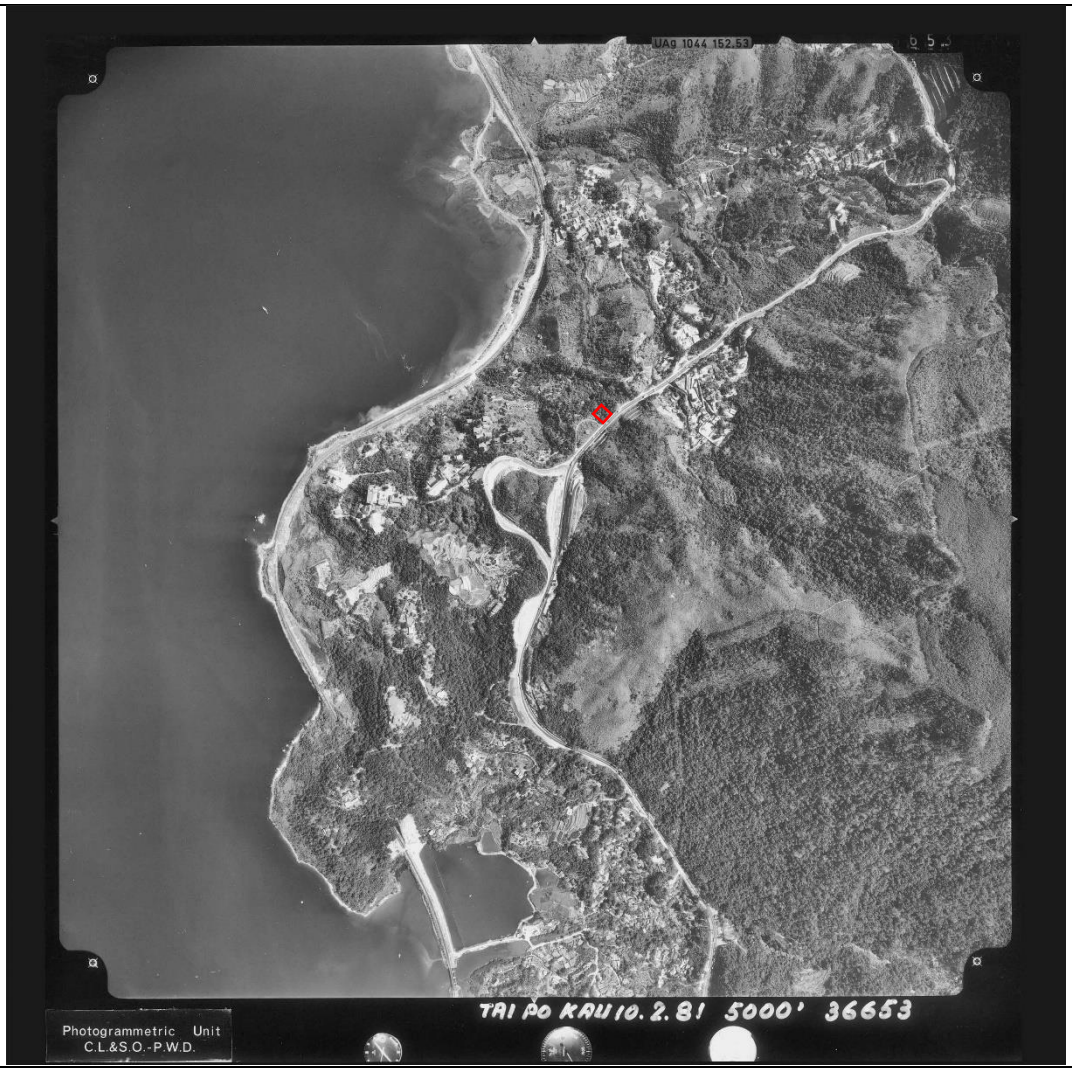
Appendix H

Aerial Photos

Project: Proposed Development of Hong Kong Sheng Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 In D.D.34. Tai Po St. Christopher's Complex at Tai Po

Aerial Photos

Year 1964


UAg 1044 152.53
TAI PO KAU 10. 2. 81 5000' 36653
Photogrammetric Unit
C.L.&S.O.-P.W.D.

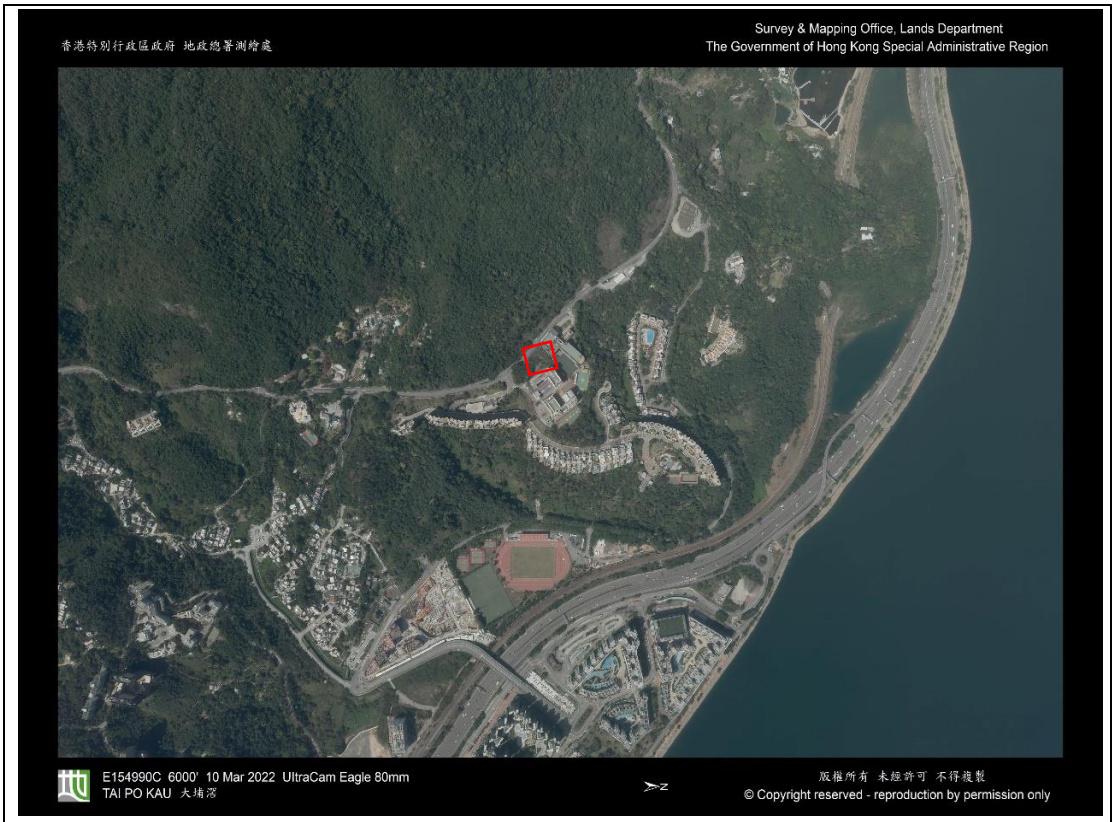
Year 1981


版權所有 未經許可 不得複製
© Copyright reserved - reproduction by permission only
0164
TAI PO KAU 24.11.2003 6,000' CW52549
香港特別行政區政府 地政總署測繪處
Survey & Mapping Office, Lands Department
The Government of Hong Kong Special Administrative Region
P2F2000

Year 2003


香港特別行政區政府 地政總署測繪處
Survey & Mapping Office, Lands Department
The Government of Hong Kong Special Administrative Region
P2F2000
0036
CW103750 31 May 2013 2000' PAK SHEK KOK
OBLIQUE
版權所有 未經許可 不得複製
© Copyright reserved - reproduction by permission only

Year 2013


香港特別行政區政府 地政總署測繪處
Survey & Mapping Office, Lands Department
The Government of Hong Kong Special Administrative Region
E154990C 6000' 10 Mar 2022 UltraCam Eagle 80mm
TAI PO KAU 大埔滘
版權所有 未經許可 不得複製
© Copyright reserved - reproduction by permission only

Year 2022


香港特別行政區政府 地政總署測繪處
Survey & Mapping Office, Lands Department
The Government of Hong Kong Special Administrative Region
E189302C 6900' 27 Feb 2023 UltraCam Eagle 210mm
PAK SHEK KOK 白石角
版權所有 未經許可 不得複製
© Copyright reserved - reproduction by permission only

Year 2023

Appendix I

Site Visit Photographs

Site visit photo record

P1

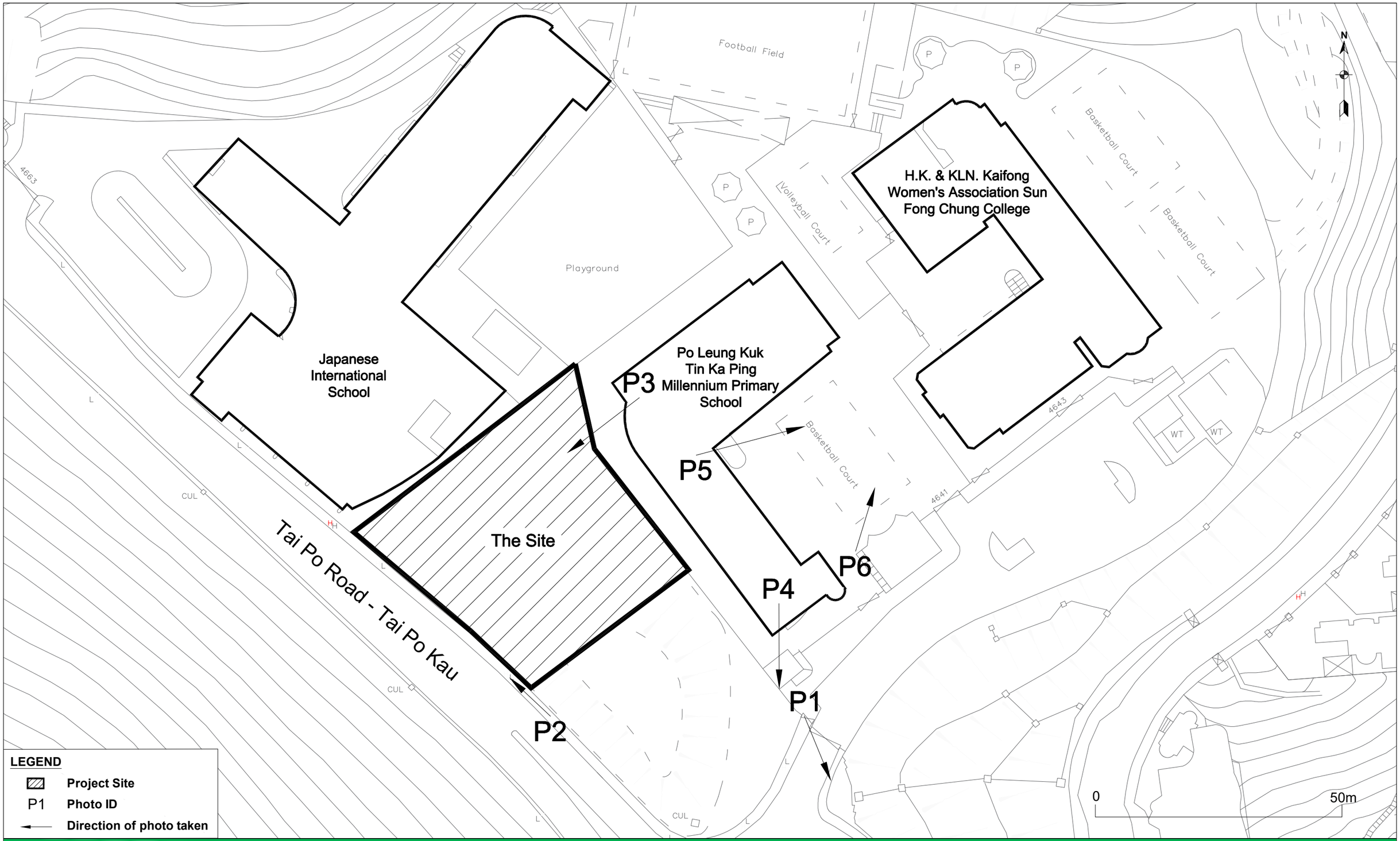
P2

P3

P4

P5

P6



URBAN GREEN

Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D.34 Tai Po St. Christopher's Complex at Tai Po

Photo Index Plan

Rev. 0

Appendix J

Site Walker Checklists

Site Walkover Checklist

Site Walkover Details

Date	10 June 2024
Time	14:30 – 15:30

General Site Details

Site Owner/ Client	
Property Address	Taxlord Lot No. T77 in D.D.34, Tai Po

Person Conducted the Questionnaire

Name	Cheryl Chen
Position	Environmental Consultant
Company	Urban Green Consultants Ltd.
Telephone	35653317

Site Activities

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

Please see the last page of **Site Walkover Observations**.

No. of employees	Full-time	N/A
	Part-time	N/A
	Temporary/ Seasonal	N/A
Maximum no. of people on site at any time		N/A
Typical hours of operation (per week)		N/A
No. of shifts		N/A
Days per week		N/A
Weeks per year		N/A
Scheduled/ expected date of service discontinuance		N/A

Detail the main sources of energy at the site:

Gas	~~YES/ NO~~/ NA
Electricity	~~YES/ NO~~/ NA
Coal	~~YES/ NO~~/ NA
Oil	~~YES/ NO~~/ NA
Other	~~YES/ NO~~/ NA

Site Description

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

What is the total site area?	2210.12m^2
Please list all current and previous owners/ occupiers of possible.	N/A
Is a site plan available? If yes, please attach.	N/A
Are there any other parties on-site as tenants or sub-tenants?	N/A
If yes, identify those parties.	N/A

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

North	PLK Tin Ka Ping Millennium Primary School
East	Deerhill Tower Deerhill Bay
South	Natural Hillside
West	Japanese International School

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

Flat terrain

State the size and location of the nearest residential communities.

Japanese International School is about 3.5 m from the project boundary. PLK Tin Ka Ping Millennium Primary School is about 7.2 m from the project boundary. Hong Kong & Kowloon Kaifong Women's Association Sun Fong Chung College is about 62.8m from the project boundary.

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

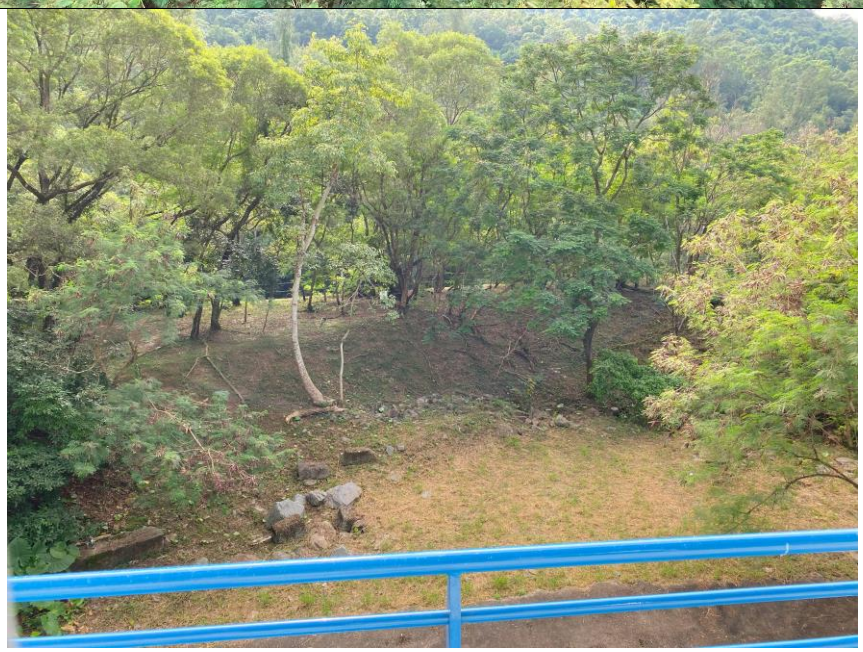
Tai Po Kau Natural Reserves

Site Walkover Observations

		Yes/No/ NA	**Notes**
1.	Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	NA	-
2.	What are the conditions of the bund walls and floors?	**NA**	-

3.	Are there any surface water drains located near to drum storage and unloading areas?	**NA**	-
4.	Are there any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	**NA**	-
5.	Is there a storage site for the wastes?	**NA**	-
6.	Is there an on-site landfill?	**NA**	-
7.	Was there any stressed vegetation noted on site during the site reconnaissance? (If yes, please indicate location and approximate size.)	**NA**	-
8.	Were any stained surfaces noted on-site during the site reconnaissance? (If yes, please provide details.)	**NA**	-
9.	Are there any potential off-site sources of contamination?	NA	-
10.	Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	NA	-
11.	Are there any sumps, effluent pits, interceptors, or lagoons on site?	NA	-
12.	Any noticeable odours during site walkover?	NA	-
13.	Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ash, oily tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	NA	-

Photo Records

1	
2	

3	
4