Appendix 6

Environmental Assessment Report

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 3
Date: November 2024
Confidential

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 3

Date: November 2024

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	08/11/24	EMT	08/11/24	JOC	08/11/24

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

Contents

1 Introduction 1

1.1 Background 1
1.2 Objectives of the EA 1
1.3 Report Structure 1

2 Site Context 2

2.1 Site Location and Its Environs 2
2.2 Proposed Development 2

3 Air Quality 3

3.1 Introduction 3
3.2 Criteria and Guidelines 3
3.3 Representative Air Sensitive Receivers 4
3.4 Existing and Future Background Air Quality Data 5
3.5 Potential Impact during Construction Phase 6
3.6 Mitigation Measures during Construction Phase 7
3.7 Potential Impact during Operation Phase 8
3.8 Mitigation Measures during Operation Phase 9

4 Noise – Road Traffic Noise 10

4.1 Introduction 10
4.2 Assessment Criteria 10
4.3 Assessment Locations 10
4.4 Assessment Assumption and Methodology 10
4.5 Assessment Results 11
4.6 Noise Mitigation Measures 11

5 Noise – Fixed Source Noise 13

5.1 Introduction 13
5.2 Criteria and Guidelines 13
5.2.1 Existing Fixed Source Noise 13
5.2.2 Planned Fixed Source Noise 13

5.3 Noise Sensitive Receiver 14

5.4 Background Noise Conditions 14

5.5 Potential Impact during Operation Phase 15

5.5.1 Noise Impacts from the Proposed Development on the Existing NSRs 15

5.5.2 Noise Impact from Potential Noise Sources within the Development 16

5.5.3 Noise Impact from Existing Noise Sources to the Development 16

6 Noise – Construction Noise 18

6.1 Introduction 18

6.2 Relevant Legislation, Standards and Guidelines 18

6.3 Potential Impact during Construction Phase 18

7 Water Quality 20

7.1 Introduction 20

7.2 Relevant Legislation, Standards and Guidelines 20

7.3 Water Sensitive Receivers and Baseline Conditions 23

7.4 Potential Impact during Construction Phase 25

7.4.1 Construction Site and Drainage 25

7.4.2 Sewage from Construction Workforce 26

7.5 Potential Impact during Operation Phase 27

7.5.1 Domestic Sewage 27

7.5.2 Landscape Runoff ***錯誤! 尚未定義書籤。***

8 Waste Management 28

8.1 Introduction 28

8.2 Relevant Legislations, Standards and Guidelines 28

8.3 Waste Disposal Implications during Construction Phase 28

8.3.2 Construction and Demolition Materials 29

8.3.3 Chemical Waste 29

8.3.4 General Refuse 30

8.4 Waste Disposal Implications during Operation Phase 30

8.4.1 Chemical Waste 30

8.4.2 Clinical Waste 31

8.4.3 General Refuse 31

8.5 Summary of Waste Materials 31

8.6 Recommended Waste Management Mitigation Measures 33

9 Land Contamination 35

9.1 Introduction 35

9.2 Relevant Guidelines 35

9.3 Site Conditions 35

10 Conclusion 37

List of Figures

Figure 2.1	Site Location and Its Environs
Figure 3.1	Location of Air Sensitive Receiver
Figure 3.2	Buffer Distance of Surrounding Roads
Figure 4.1a-d	Location of Noise Sensitive Receiver
Figure 4.2a-d	Location of Noise Mitigation Measures
Figure 4.3a-d	Typical Configuration of Acoustic Window
Figure 5.1	Location of Representative Noise Sensitive Receiver and Noise Measurement Point
Figure 5.2	Location Plan of Chiller and Measurement Location
Figure 5.3	Cross - Section Diagram Japanese Internation School
Figure 5.3	Cross - Section Diagram PLK Tin Ka Ping Millennium Primary School
Figure 7.1	Location of Water Sensitive Receiver

List of Tables

Table 3.1	Hong Kong Air Quality Objectives
Table 3.2	Required Buffer Distance between the Surrounding Road and the Air Sensitive Receivers of the Proposed Development
Table 3.3	Required Buffer Distance between the Industrial Chimneys and the ASRs
Table 3.4	Representative Air Sensitive Receivers
Table 3.5	Existing Background Air Quality Data from the AQMS – Tai Po
Table 3.6	Future Annual Average Air Pollutant Concentrations
Table 3.7	Number of Dump Trucks and Mechanical Equipment
Table 4.1	Key Configuration of Acoustic Window and Reference Case
Table 4.2	Locations of Proposed Mitigation Measure for Road Traffic Noise
Table 5.1	Noise Standards for Existing Fixed Noise Source
Table 5.2	Noise Standards for Planned Fixed Noise Sources

Table 5.3	Representative Noise Sensitive Receiver
Table 5.4	Measurement of Background Noise Levels
Table 5.5	Mitigation Measure for fixed noise
Table 7.1	Summary of Water Quality Objectives for Port Shelter WCZ
Table 7.2	Representative Water Sensitive Receivers
Table 7.3	River Water Quality Monitoring Data for Tai Po Kau Stream (TR14) in 2022
Table 8.1	Summary of Waste Generation
Table 9.1	Summary of Aerial Photograph Review

List of Appendices

Appendix A	Proposed Layout Plan
Appendix B	Traffic Data
Appendix C	Road Traffic Noise Result (Unmitigated Scenario)
Appendix D	Road Traffic Noise Result (Mitigated Scenario)
Appendix E	Reference of Acoustic Window Noise Reduction
Appendix F	Noise Measurement Records and Photo Records
Appendix G	Estimation of Fixed Noise Sources Noise Level
Appendix H	Aerial Photos
Appendix I	Site Visit Photographs
Appendix J	Photo Index Plan
Appendix K	Site Walker Checklist

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 Draft 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;
- 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 show 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. As the installed capacity of the STP is 673.64m^3/day which is not classified as a Designated Project (DP) under EIAO as it has an installed capacity of not more than 2,000m^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 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.

2.2.1.3 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 Table 3.1 in Chapter 9 of the HKPSG stipulates the required buffer distance between the Air Sensitive Receivers (ASRs) and the surrounding roads. Applicable buffer distance requirements are summarised in Table 3.2 below:

Table 3.2 Required Buffer Distance between the Surrounding Road and the Air Sensitive Receivers of the Proposed Development

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

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

3.2.1.4 Table 3.1 in Chapter 9 of the HKPSG stipulates the required buffer distance between the ASRs based on the land uses and the different pollutant sources. Applicable buffer distance requirements are summarised in Table 3.2 below:

Table 3.3 Required Buffer Distance between the Industrial Chimneys and the ASRs

Pollution Source	Difference in Height between Industrial Chimney Exit and the site	Required Buffer Distance
Industrial Area	<20m	> 200m
	20 – 30m	5 - 200m
		> 100m
	30 – 40m	5 - 100m
		> 50m
	40m	5 - 50m
		> 10m

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); and
- Air Pollution Control (Fuel Restriction) Regulations (i.e. using liquid fuel with a sulphur content of less than 0.005% by weight)
- 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	368.9	8
ASR 2	Villa Castell	Residential	190	8
ASR 3	Deerhill Bay	Residential	78	36
ASR 4	Japanese International School	Educational	6.6	21
ASR 5	PLK Tin Ka Ping Millennium Primary School	Educational	7.2	21
ASR 6	Sun Fong Chung College	Educational	62.8	21
ASR 7	Banyan Villa	Residential	445	9
ASR 8	Proposed Development	Residential	NA	39.4

3.4 Existing and Future Background Air Quality Data

3.4.1.1 The background air quality data from Tai Po Monitoring Station – the nearest Air Quality Monitoring Station (AQMS) of the Project Site, in the past five years is shown below:

Table 3.5 Existing Background Air Quality Data from the AQMS – Tai Po

Year	NO_2	PM_{10}	$PM_{2.5}$	SO_2	O_3	CO
2019	36	31	20	4	61	-
2020	30	24	15	3	58	-
2021	32	26	16	4	59	-
2022	27	21	14	3	63	-
2023	27	25	15	2	62	-
AQO	**200 (1-hour)** **40 (Annual)**	**100 (24-hour)** **50 (Annual)**	**50 (24-hour)** **25 (Annual)**	**500 (10 minutes)** **50 (24-hour)**	**160 (8-hour)**	**30000 (1-hour)** **10000 (8-hour)**

Remark:
1) CO concentration is not available at Tai Po Station
2) Pollutant concentrations in micrograms per cubic metre ($\mu g/m^3$)
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. This could indicate improvements in air quality over the year. By comparing with the Air Quality Objectives in Table 3.5, the concentration of all air pollutants falls within the standard.

3.4.1.3 The annual average air pollutant concentrations near the Site retrieved from PATH v3.0 are tabulated below:

Table 3.6 Future Annual Average Air Pollutant Concentrations

Year 2030	PM_{10}	NO_2	O_3	SO_2	CO	$PM_{2.5}$
L1	19	11	84	2	176	12
L2	19	10	85	2	174	12
L3	19	10	86	2	173	11

Pollutant concentrations in micrograms per cubic metre ($\mu g/m^3$)
Source: PATH v3.0 data for grid cell (42,45) at levels L1-3 from https://path.epd.gov.hk/

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 956 dump truck would be required throughout the construction period. The whole excavation process will be lasted for 12 months. 3 trips per day is therefore anticipated. 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
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)	3
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.

3.6 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; and
- An environmental & auditing program is required to monitor the dust impact arising from the construction activities associated with the project during the construction stage. Contiuous PM monitoring will be conducted during the construction period.

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 617 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 2,000m^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.

3.8 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 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 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). The use of practicable noise mitigation measures has been investigated and are discussed below.

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

4.6 Noise Mitigation Measures

4.6.1.1 To comply with the HKPSG's road traffic noise standards (i.e. L10(1-hour) 70 dB(A)), acoustic window application is proposed.

4.6.1.2 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.

4.6.1.3 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.

4.6.1.4 In accordance with the recommended *ProPECC PN 5/23 Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact* and considering the reference project of Kwai Tsui Estate which has similar room sizes with the Proposed Development, the baffle type acoustic window configuration was considered for noise attenuation purposes. The acoustic window in four different types can achieve noise attenuation of at least 6dB(A), and the typical configurations are presented in Figure 4.3a-e. The reference of acoustic window proposed are presented in Appendix E and the summarised of key configuration table are shown in Table 4.1. In addition, it is anticipated that noise performance of the provided acoustic window could be further enhanced by reducing the gap width (i.e. 175mm) and providing sound absorptive lining on all four sides of the window frame, it is expected noise attenuation of 8 dB(A) could be achieved.

Table 4.1 Key Configuration of Acoustic Window and Reference Case

Key Configuration	Acoustic Window (Type A)	Acoustic Window (Type B)	Acoustic Window (Type C)	Acoustic Window (Type D)
Room Size (m2)	27.1 – 40.4	32.7	9-17	11
Inner Window Opening	2155	3045	1230	920
Outer Window Opening	2450	2708	1570	580
Overlapping	340	340	340	340
Gap width	175	175	175	175
Absorptive Material	Yes	Yes	Yes	Yes

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

Table 4.2 Locations of Proposed Mitigation Measure for Road Traffic Noise

NSR ID	Recommended Mitigation Measure(s)	Implemented Floor(s)
NSR 1	Acoustic Window (Type A)	3/F-6/F
NSR 4		3/F-6/F
NSR 8		2/F-6/F
NSR 19		3/F-6/F
NSR 21		3/F-6/F
NSR 2	Acoustic Window (Type B)	2/F
NSR 5	Acoustic Window (Type C)	2/F
NSR 3		8/F-9/F
NSR 6	Acoustic Window (Type D)	8/F-9/F
NSR 7		8/F-9/F

4.6.1.6 With the 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.

4.6.1.7 The predicted traffic noise levels at the NSRs with the application of mitigation measures are presented in Appendix D. The locations of the recommended noise mitigation measures are given in Figures 4.2a-e.

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 2022*" 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 It is observed that there are four chillers on the roof Japanese International School (JIS) and several AC outdoor unit on the roof and the typical floor of PLK Tin Ka Ping Millennium Primary School (PLK), which may pose noise impacts to the Proposed Development. The sound power level of the equipment in of the equipment is estimated based on ISO 3745 requirements.

5.5.3.2 Far field measurement for the chillers in JIS was conducted on 20 October 2022 to collect data for the sound power level estimation. The location of chiller and measurement are shown in Figure 5.2 and the measurement was conducted on the roof of PLK, which has a comparable building height to the Proposed Development. The sound power level of the MVAC equipment is back calculated by adopting standard acoustic principles as shown below:

$$SWL = SPL + DC - FC - TC - BC$$

where,

SWL	Sound power level, dB(A)
SPL	Sound pressure level, dB(A)
DC	Distance attenuation, dB(A) (i.e. 20 log D + 8, where D is distance in m)
FC	Façade correction, dB(A) (i.e. 3dB(A))
TC	Tonality correction, dB(A) (i.e. 3dB(A) if applicable)
BC	Barrier correction, dB(A) (i.e. 5dB(A) if applicable)

5.5.3.3 As shown in Appendix G, the estimated noise levels from the identified MVAC equipment received of the Proposed Development at 2F to 5/F are meets the noise criteria as stated in Table 5.1. NSR21 and NSR 19 in 6th floor receives a higher noise level of 63dB(A) necessitating the installation of an acoustic window. The NSRs in 8/F and 9/F, which face the Japanese International School also require acoustic window to meet the noise criteria in daytime. The configuration of acoustic window is shown in Figure 4.3a. The Figure 5.3 and Figure 5.4 depict the cross-section diagram between the proposed building and the Japanese International School and PLK Tin

Ka Ping Millennium Primary School respectively. The diagram indicates the possible lines of sight for sensitive noise receivers and the noise source. 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.

Table 5.5 Mitigation Measure for fixed noise

NSR ID	Recommended Mitigation Measure(s)	Implemented Floor(s)
NSR 19	Acoustic Window Type A	6/F
NSR 21		6/F
NSR 25		8/F-9/F
NSR 26		8/F-9/F
NSR 22	Acoustic Window Type D	8/F-9/F
NSR 23		8/F-9/F
NSR 24		8/F-9/F

5.5.3.4 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. Therefore, adverse impact from fixed noise is not anticipated.

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";
- Practice Note for Professional Persons No. ProPECC PN No. 4/23 "Planning of Residential Developments Against Road Traffic Noise";
- 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 2/23 "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 2022" published by EPD, the proposed development is located in the inland area of the Port Shelter Water Control Zone (WCZ). The water quality objectives for Port Shelter WCZ are summarised in Table 5.1.

Table 7.1 Summary of Water Quality Objectives for Port Shelter WCZ

Parameters	Water Quality Objectives	Part or parts of Zone
Aesthetic Appearance	a) Waste discharges shall cause no objectionable odours or discolouration of the water.	Whole Zone
	b) Tarry residues, floating wood, articles made of glass, plastic, rubber or of any other substance should be absent	Whole Zone
	c) Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam.	Whole Zone

Parameters	Water Quality Objectives	Part or parts of Zone
	d) There should be no recognizable sewage-derived debris.	Whole Zone
	e) Floating, submerged and semi-submerged objects of a size likely to interfere with the free movement of vessels, or cause damage to vessels, should be absent	Whole Zone
	f) Waste discharges shall not cause the water to Whole Zone contain substances which settle to form objectionable deposits.	Whole Zone
Bacteria	a) 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.	Secondary Contact Recreation Subzone and Fish Culture Subzones (L.N. 451 of 1991)
	b) The level of Escherichia coli should not exceed 180 per 100 ml, calculated as the geometric mean of all samples collected from March to October inclusive in one calendar year. Samples should be taken at least 3 times in a calendar month at intervals of between 3 and 14 days.	Bathing Beach Subzones
Colour	Waste discharges shall not cause the colour of water to exceed 50 Hazen units.	Inland waters
Dissolved Oxygen	a) Waste discharges shall not cause the level of dissolved oxygen to fall below 4 mg per litre for 90% of the sampling occasions during the year; values should be calculated as the water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 mg per litre within 2 m of the seabed for 90% of the sampling occasions during the year.	Marine waters excepting Fish Culture Subzones
	b) The dissolved oxygen level should not be less than 5 mg per litre for 90% of the sampling occasions during the year; values should be calculated as water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 mg per litre within 2 m of the seabed for 90% of the sampling occasions during the year.	Fish Culture Subzones

Parameters	Water Quality Objectives	Part or parts of Zone
	c) Waste discharges shall not cause the level of dissolved oxygen to be less than 4 mg per litre.	Inland waters
pH	a) The pH of the water should be within the range of 6.5-8.5 units. In addition, waste discharges shall not cause the natural pH range to be extended by more than 0.2 units.	Marine waters excepting Bathing Beach Subzones
	b) The pH of the water should be within the range of 6.0-9.0 units for 95% of samples. In addition, waste discharges shall not cause the natural pH range to be extended by more than 0.5 units.	Bathing Beaching Subzones
	c) Waste discharge shall not cause the pH of the water to exceed the range of 6.5-8.5 units	Ho Chung (A) Subzone
	d) The pH of the water should be within the range of 6.0-9.0 units	Other inland Waters
Temperature	Waste discharges shall not cause the natural daily temperature range to change by more than 2.0 degrees Celsius.	Whole Zone
Salinity	Waste discharges shall not cause the natural ambient salinity level to change by more than 10%.	Whole Zone
Suspended Solids	a) Waste discharges shall neither cause the natural ambient level to be raised by 30% nor give rise to accumulation of suspended solids which may adversely affect aquatic communities.	Marine waters
	b) Waste discharges shall not cause the annual median of suspended solids to exceed 25 mg per litre.	Inland waters
Ammonia	The ammonia nitrogen level should not be more than 0.021 mg per litre, calculated as the annual average (arithmetic mean), as unionized form.	Whole Zone
Nutrients	a) Nutrients shall not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants.	Marine waters
	b) Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.1 mg per litre, expressed as annual water column average (arithmetic mean of at	Marine waters

Parameters	Water Quality Objectives	Part or parts of Zone
	least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed).	
5-Day Biochemical Oxygen Demand	Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 5 mg per litre.	Inland waters
Chemical Oxygen Demand	Waste discharges shall not cause the chemical oxygen demand to exceed 30 mg per litre.	Inland waters
Dangerous Substances	a) Waste discharges shall not cause the concentrations of dangerous substances in the water to attain such levels as to produce significant toxic effects in humans, fish or any other aquatic organisms, with due regard to biologically cumulative effects in food chains and to toxicant interactions with each other.	Whole Zone
	b) Waste discharges of dangerous substances shall not put a risk to any beneficial uses of the aquatic environment.	Whole Zone
Phenol	Phenols shall not be present in such quantities as to produce a specific odour, or in concentrations greater than 0.05 mg per litre as C6H5OH	Bathing beach Subzones
Turbidity	No changes in turbidity or ither factors arising from waste discharges shall reduce light transmission substantially from the normal level	Bathing beach Subzones

7.3 Water Sensitive Receivers and Baseline Conditions

7.3.1.1 Within the 500m water quality study area, six potential water quality sensitive receivers (WSR) are identified. The locations of the WSRs are shown in Figure 7.2.

Table 7.2 Representative Water Sensitive Receivers

WSR	Description	Distance from Site Boundary, (m)
WSR1	Natural Stream	277
WSR2	Natural Stream	331
WSR3	Natural Stream	374

WSR	Description	Distance from Site Boundary, (m)
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

7.3.1.2 With reference to "River Water Quality in Hong Kong in 2022" 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 7.3 shows the summary of water quality monitoring data for Tai Po Kau Stream in 2022:

Table 7.3 River Water Quality Monitoring Data for Tai Po Kau Stream (TR14) in 2022

Parameter	Unit	Water Quality Monitoring Station TR14
Dissolved Oxygen	mg/L	8.0 (6.0 -- 9.9)
pH	-	7.0 (6.7 – 7.6)
Suspended Solids	mg/L	1.8 (0.6 -- 6.6)
5-Day Biochemical Oxygen Demand	mg/L	0.6 (0.3 – 2.0)
Chemical Oxygen Demand	mg/L	0.3 (<0.1 -- 3.2)
Oil & Grease	mg/L	<0.5 (<0.5 - <0.5)
E. coli	counts/ 100mL	830 (64 -- 23000)
Faecal Coliforms	counts/ 100mL	2 600 (130 -- 33000)
Ammonia-Nitrogen	mg/L	0.095 (0.06 – 0.32)
Nitrate-Nitrogen	mg/L	0.225 (0.150 – 0.700)
Total Kjeldahl Nitrogen	mg/L	0. 24 (0.14 – 0.48)
Orthophosphate Phosphorus	mg/L	0.004 (0.002 – 0.037)
Total Phosphorus	mg/L	0.04 (0.02 – 0.05)

Parameter	Unit	Water Quality Monitoring Station TR14
Sulphide	mg/L	<0.02 (<0. 02 - 0. 02)
Aluminium	µg/L	<50 (<50 – 167)
Cadmium	µg/L	<0.1 (<0.1 – 0.1)
Chromium	µg/L	<1 (<1 – 2)
Copper	µg/L	1 (<1 – 4)
Lead	µg/L	<1 (<1 - <1)
Zinc	µg/L	<10 (<10 – 20)
Flow	m^3/s	0.071 (0.020 – 0.570)

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 with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains; and
- All chemical toilets, if any, should be regularly cleaned and the night-soil collected and transported by a licensed contractor to a Government Sewage Treatment Works facility for disposal.

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.

7.5 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 Landscape 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. With these measures implemented and the sewage properly treated in the on-site STP, no adverse water quality impact is anticipated.

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 K. 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.

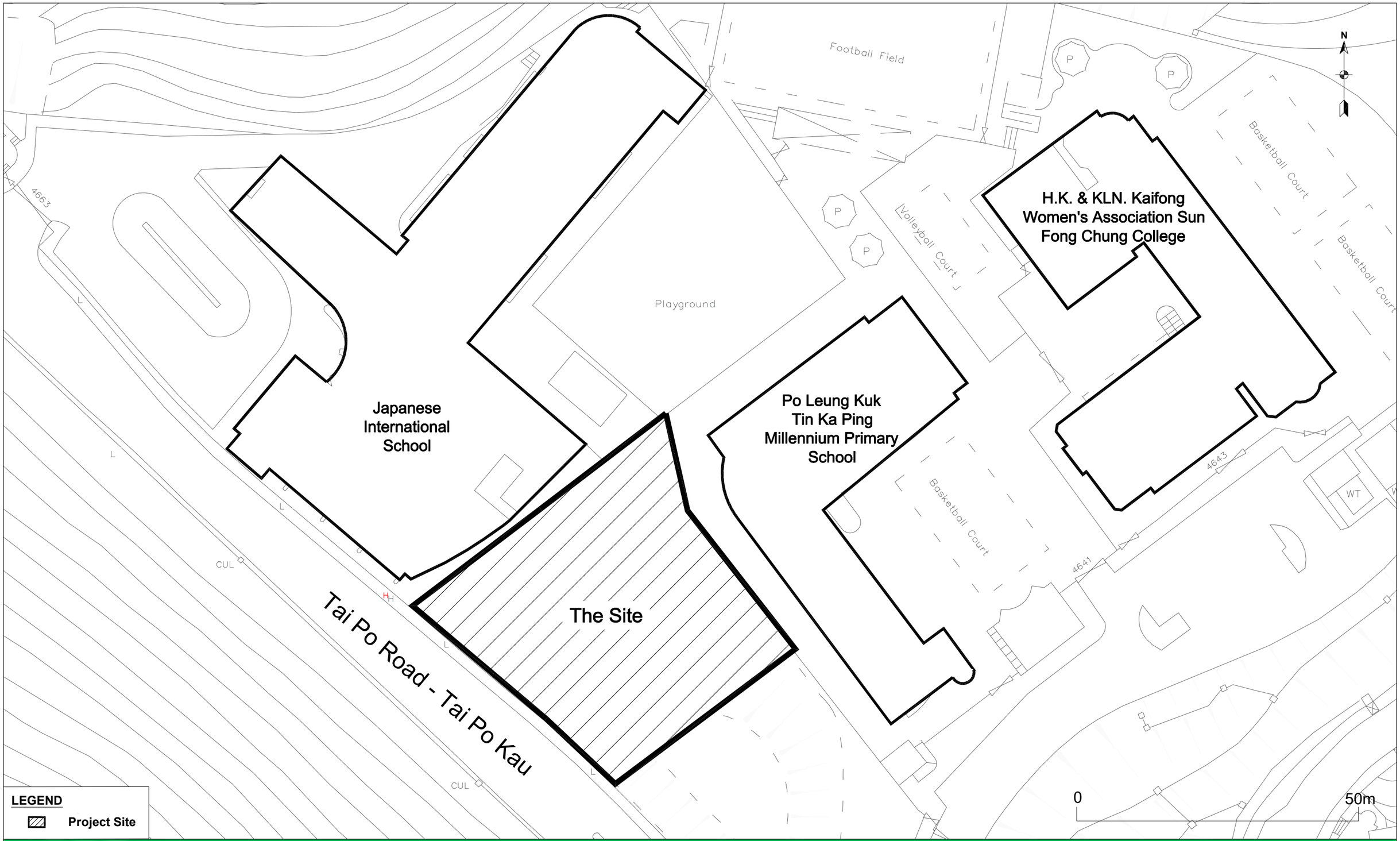
10.1.1.6 Regarding the water quality during construction stage, good site practices, effluent discharge guidelines, and water pollution control measures will be followed and carried out. For operation stage, the sewage generated from the Proposed Development will be treated in the proposed sewage treatment 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



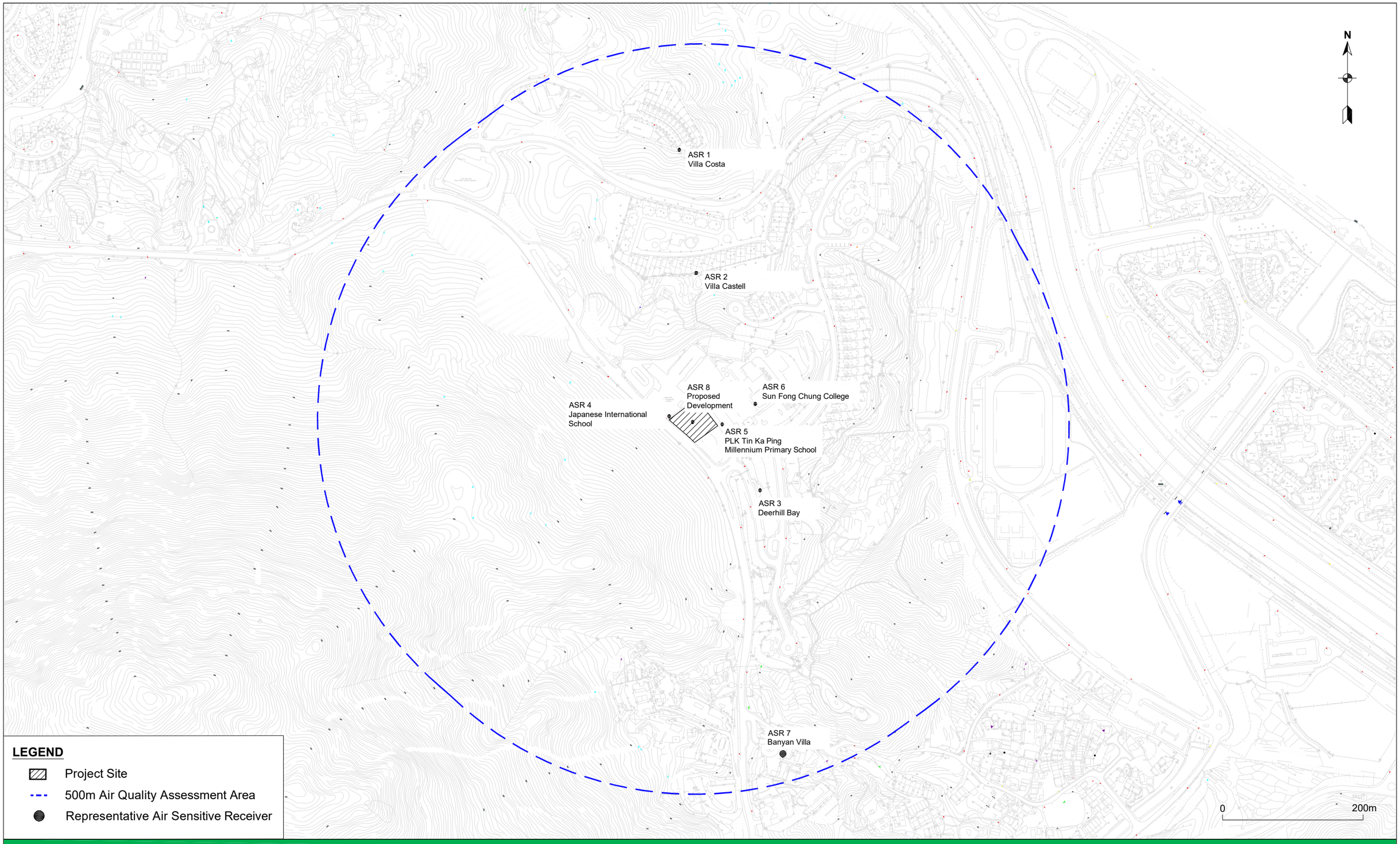
URBAN GREEN

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

The Site and Its Environs

Figure 2.1

Rev. 0



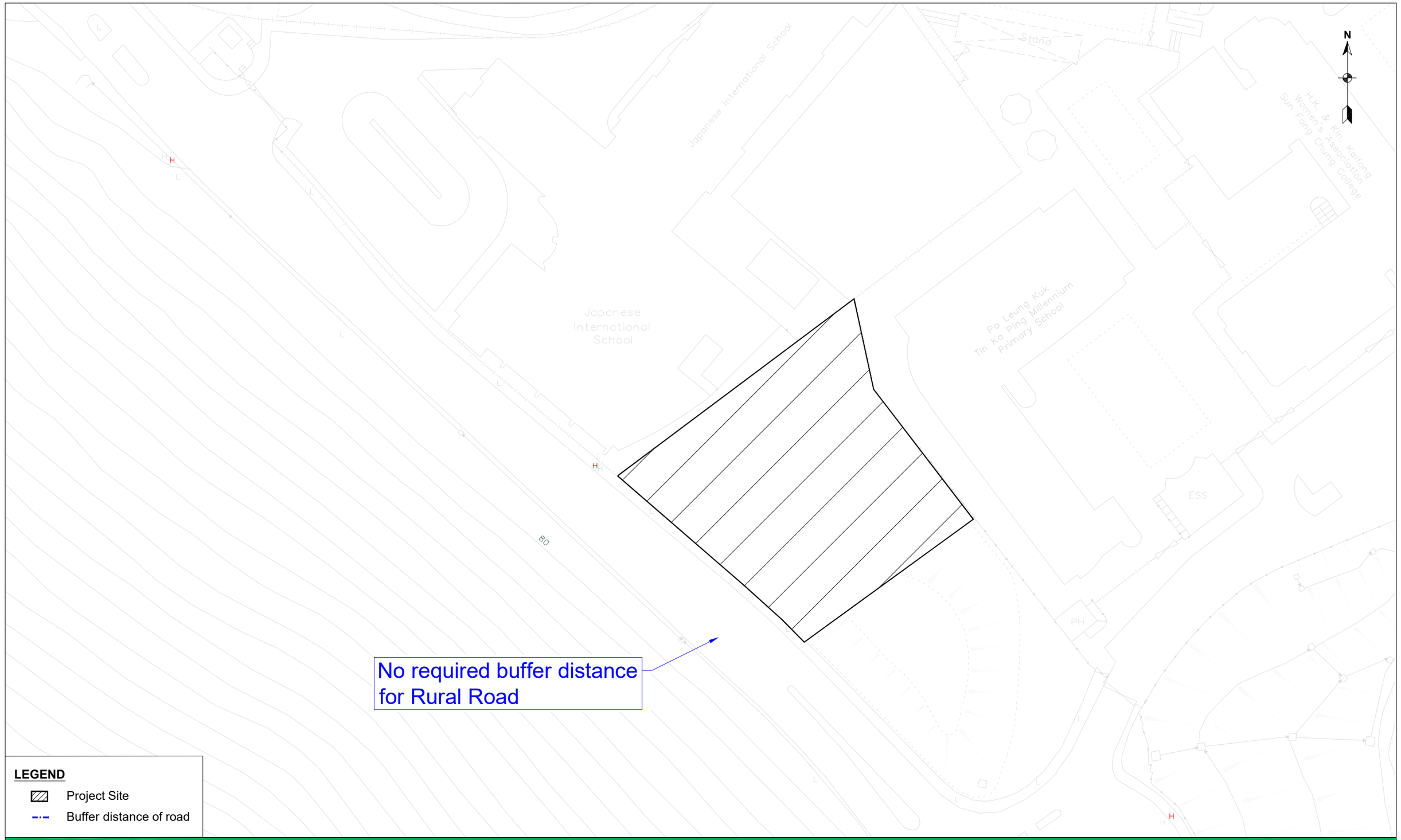
URBAN GREEN

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 Air Sensitive Receiver

Figure 3.1

Rev. 1



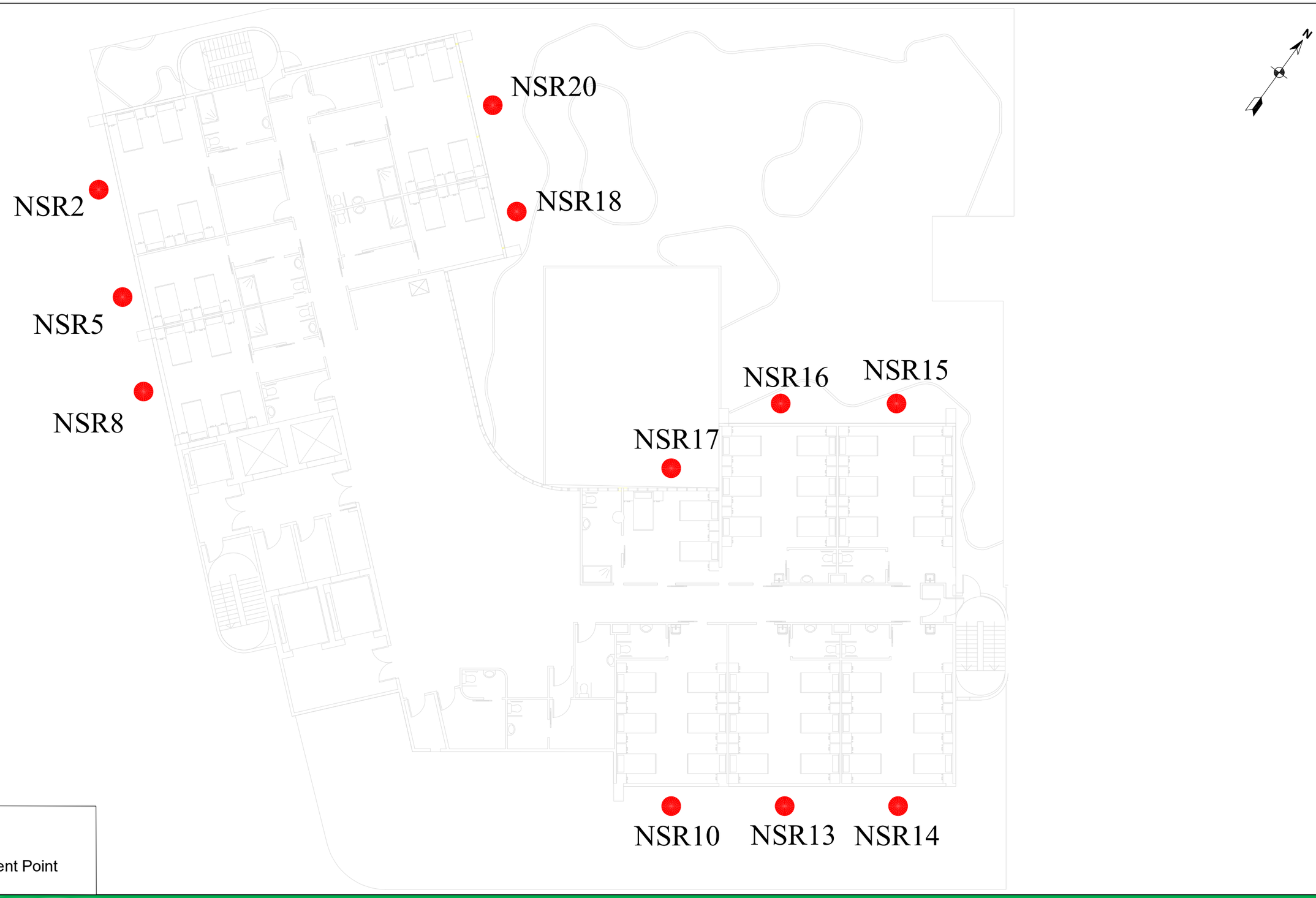
URBAN GREEN

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



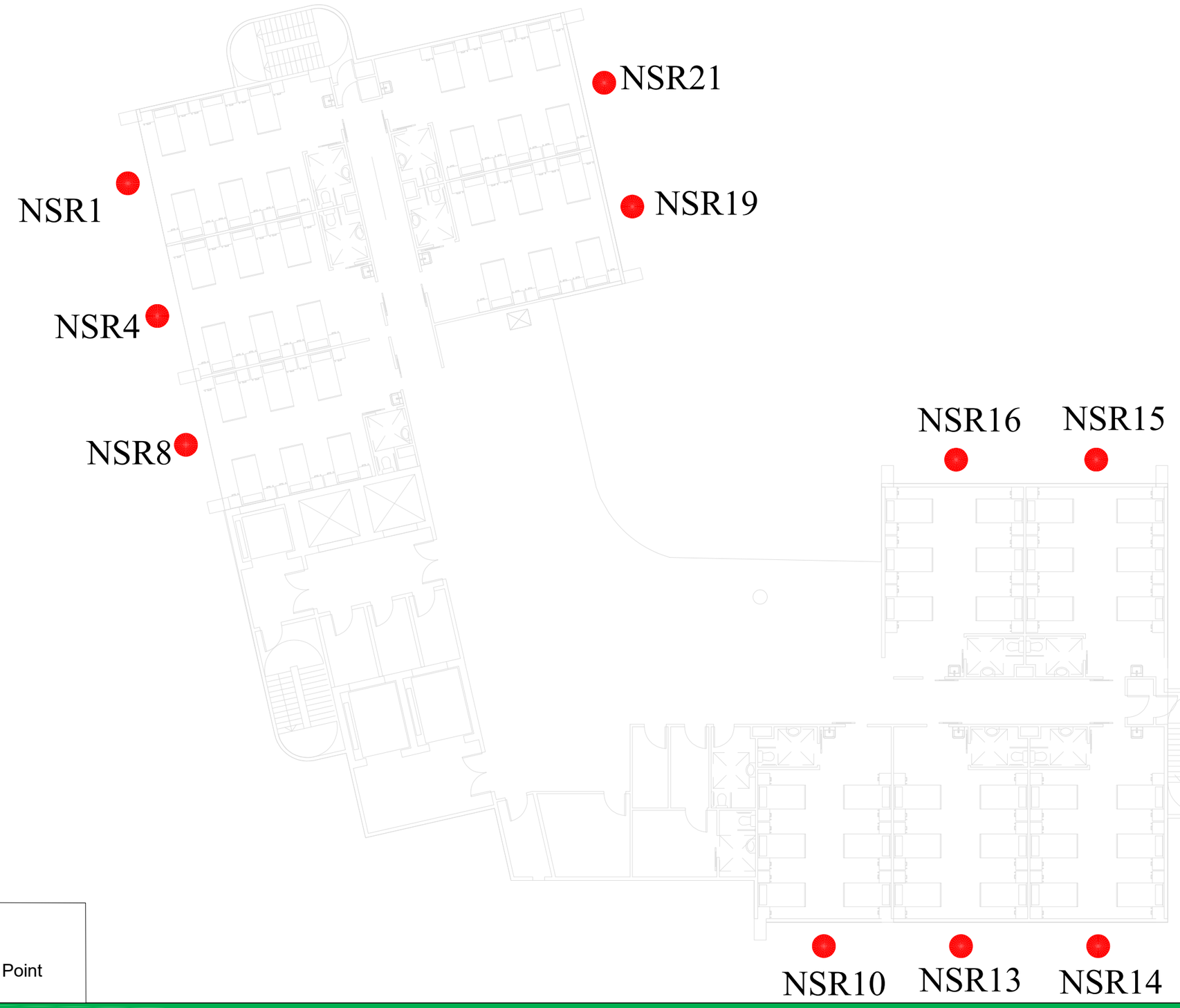
Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord lot No. T77 in D.D. 34 Tai Po

Location of Noise Sensitive Receiver (2/F)

Figure 4.1a

Rev. 0

URBAN GREEN



Legend

Assessment Point

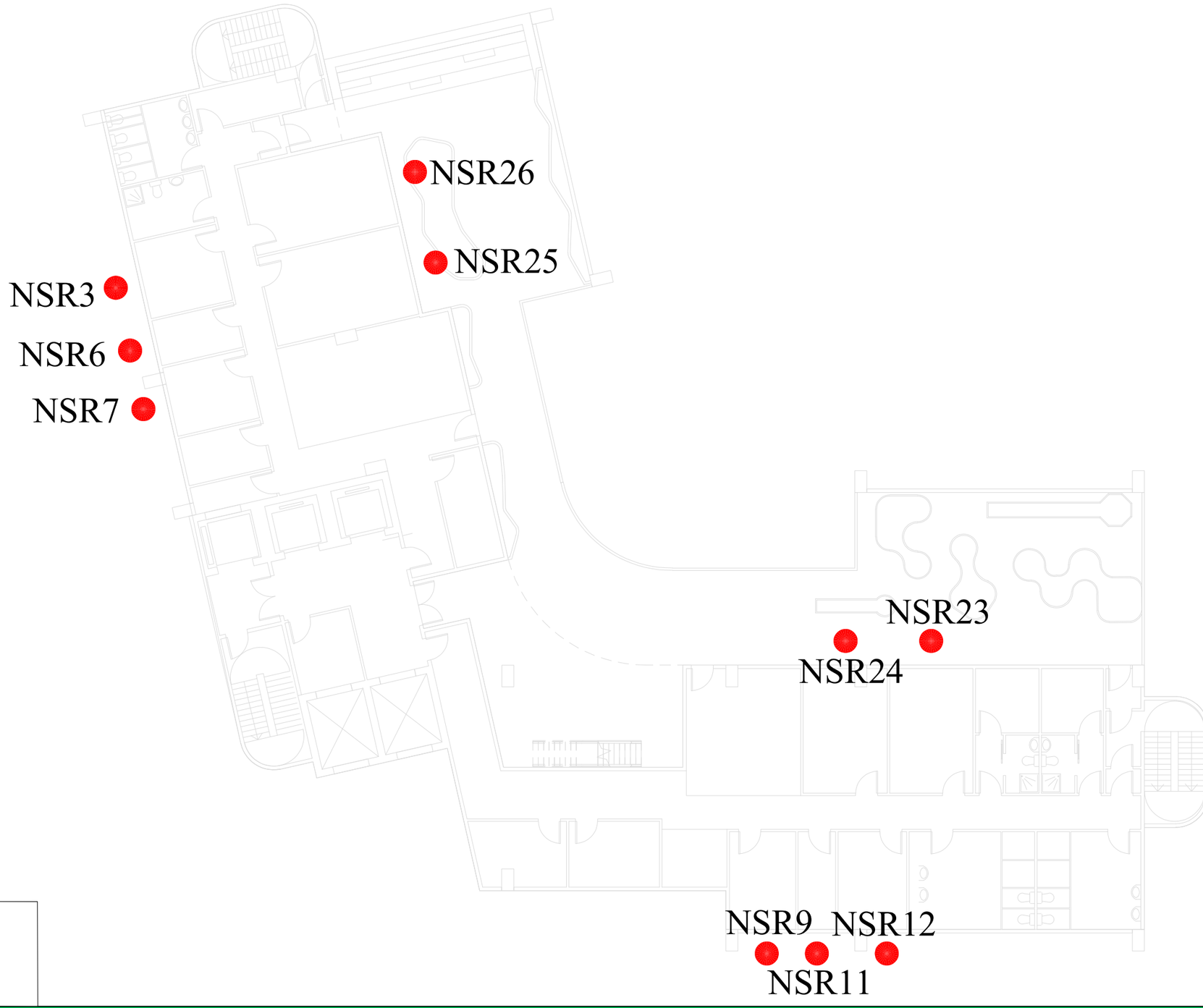
URBAN GREEN

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



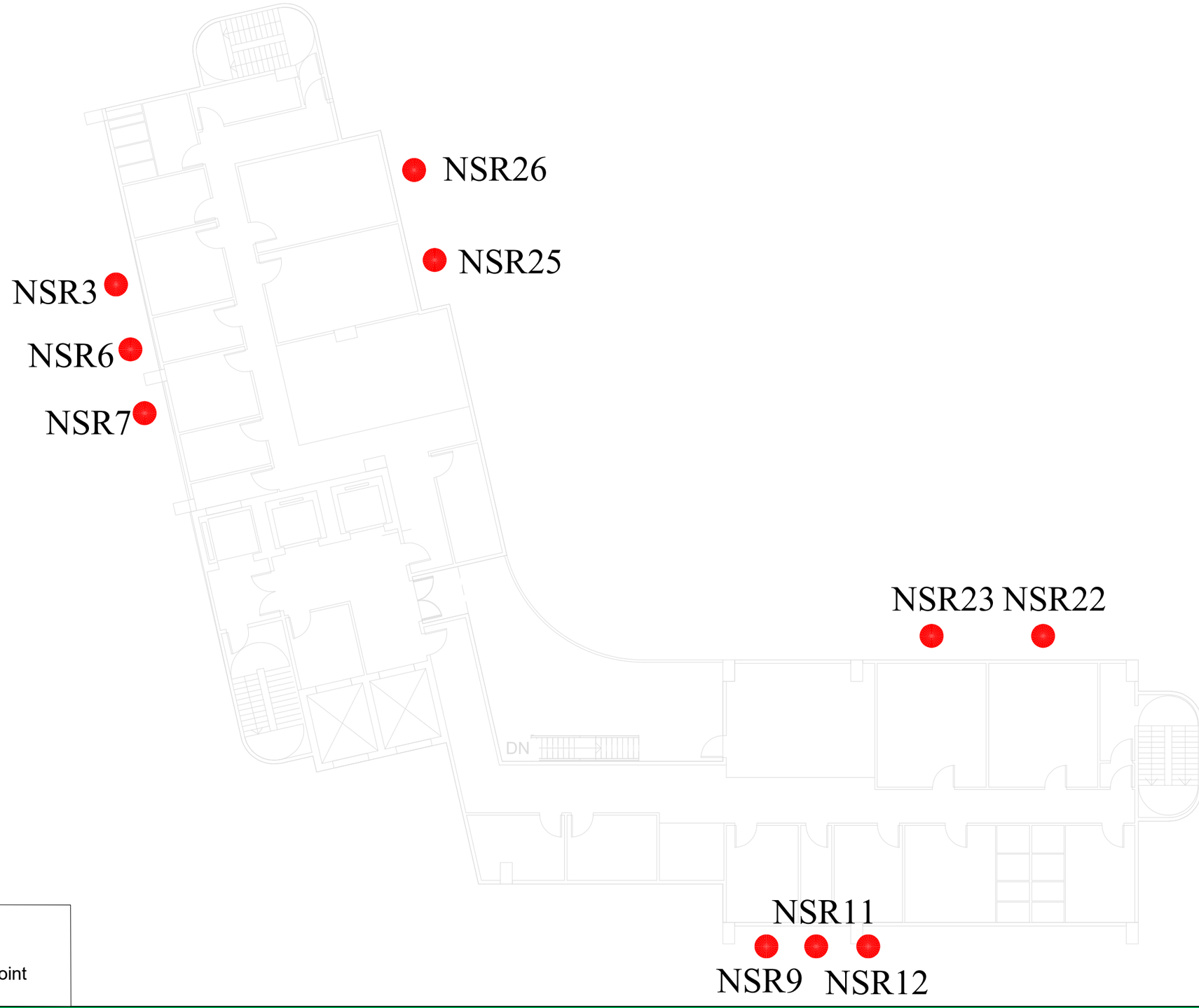
URBAN GREEN

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

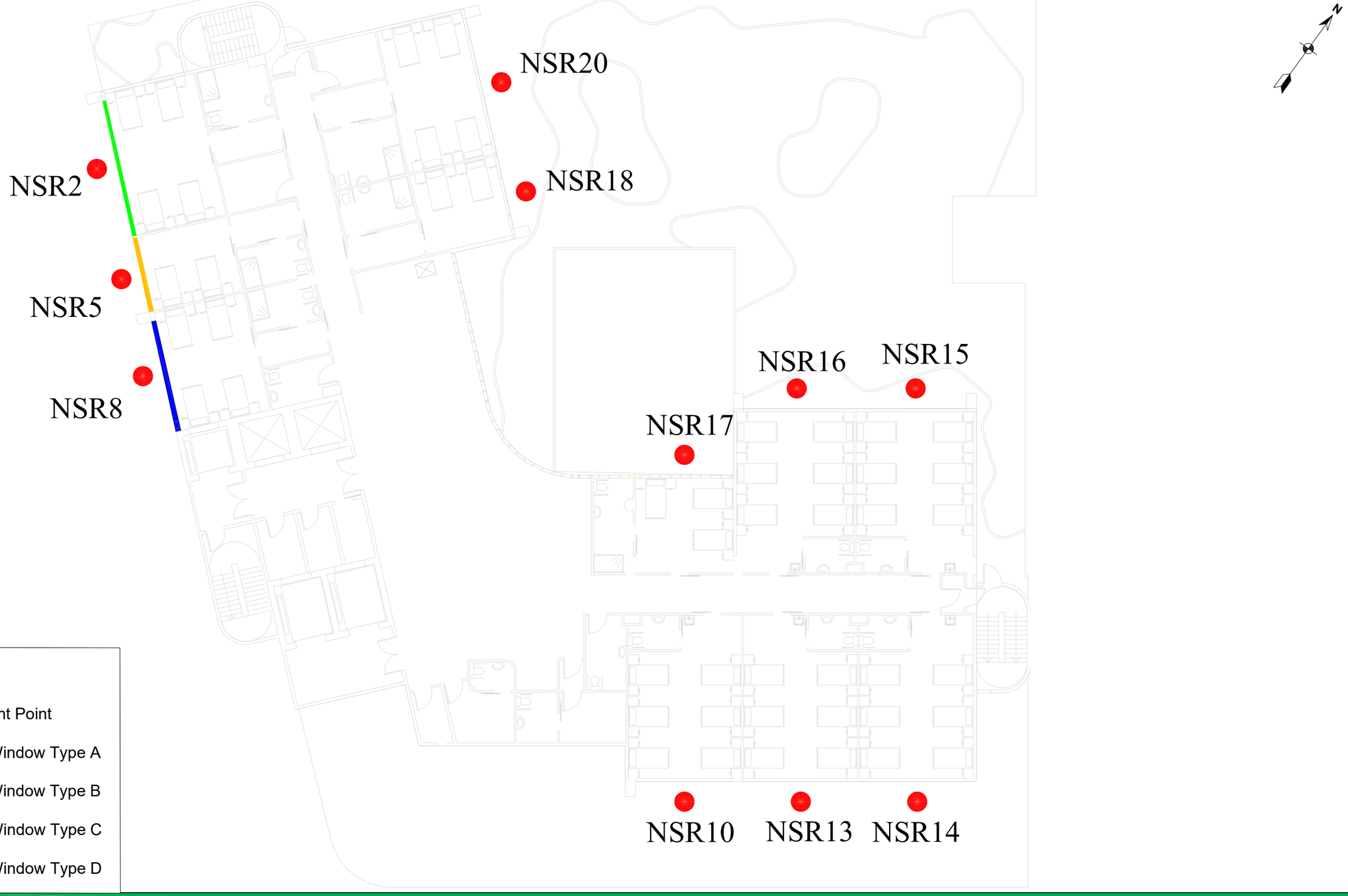
URBAN GREEN

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



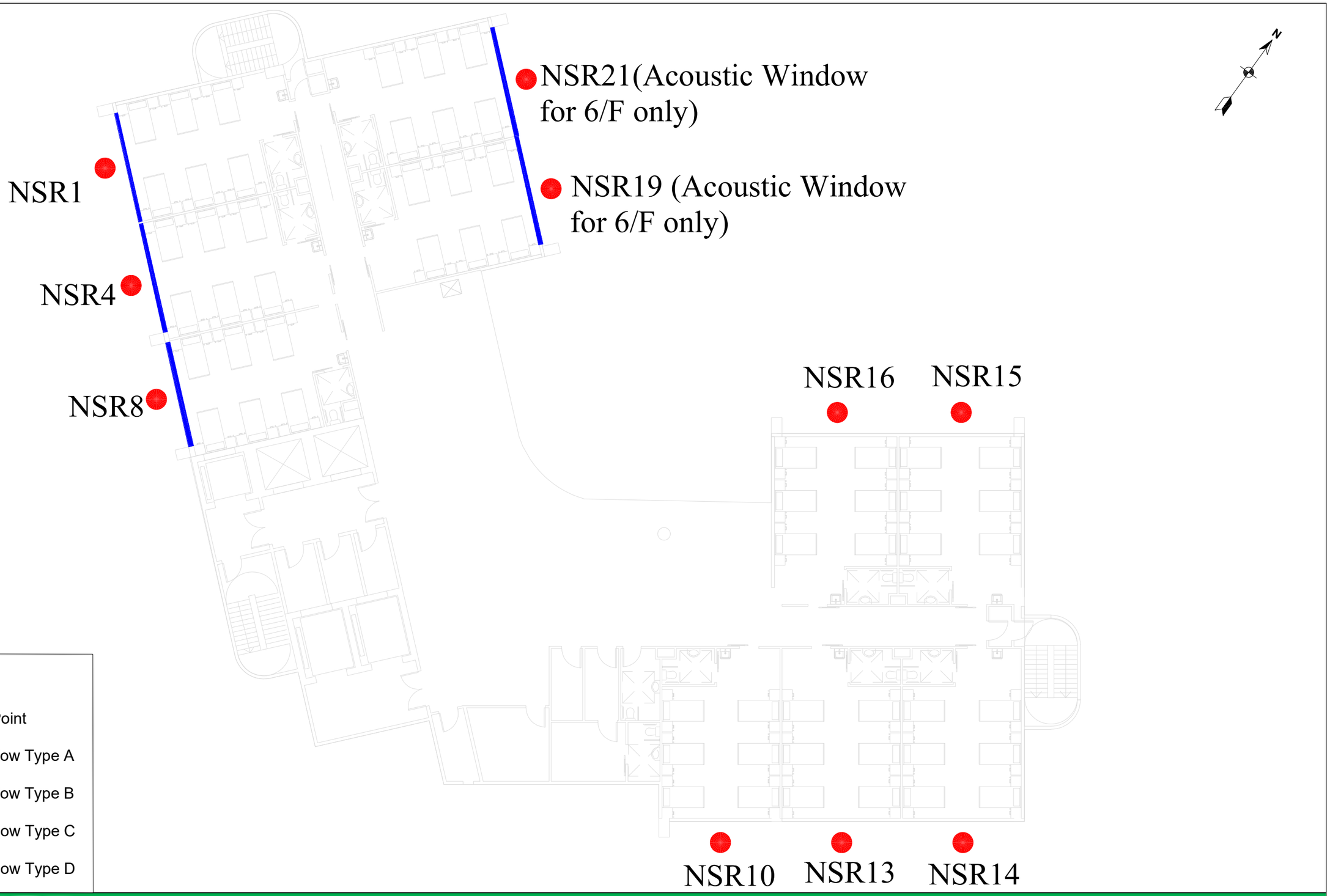
URBAN GREEN

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



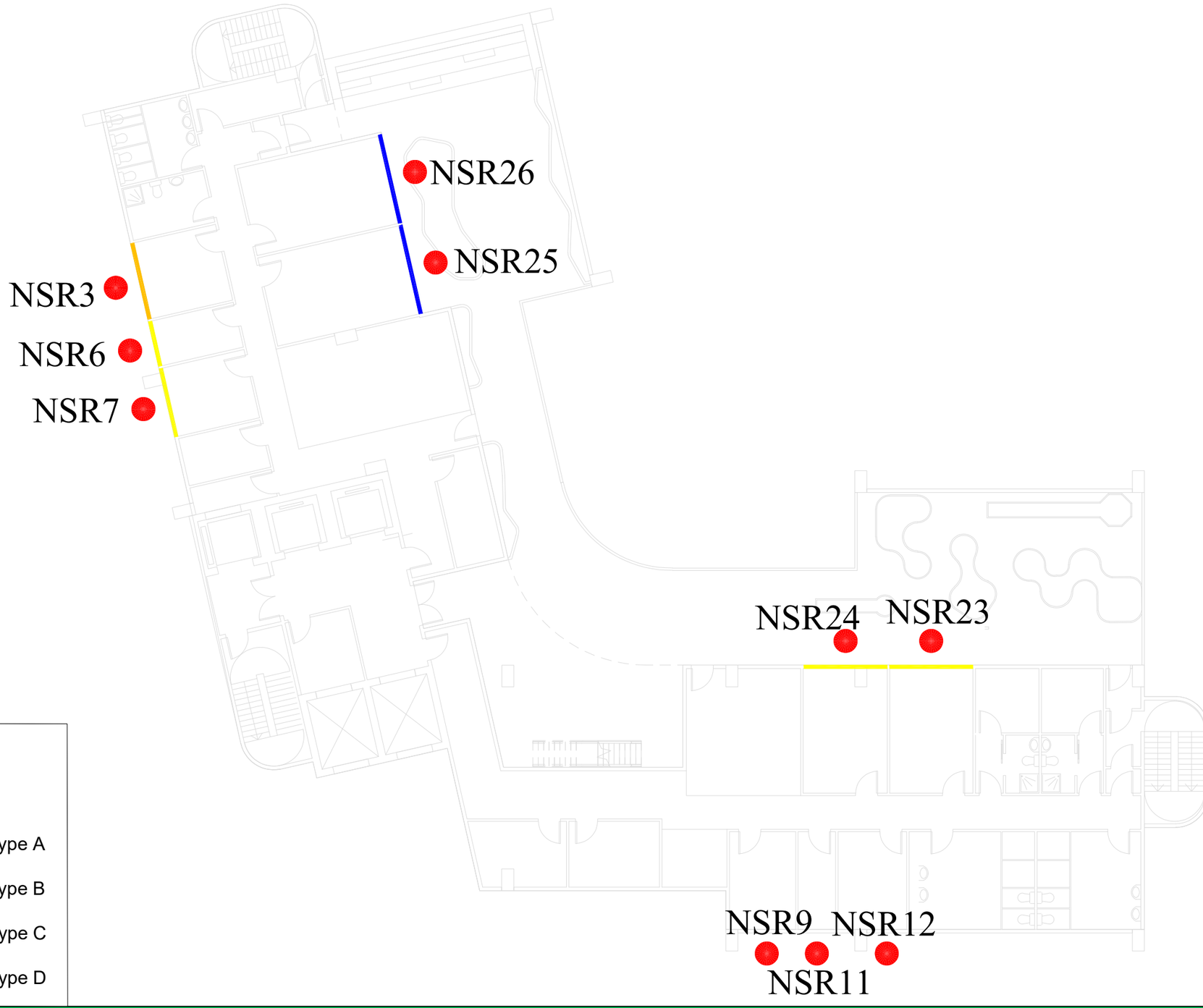
URBAN GREEN

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



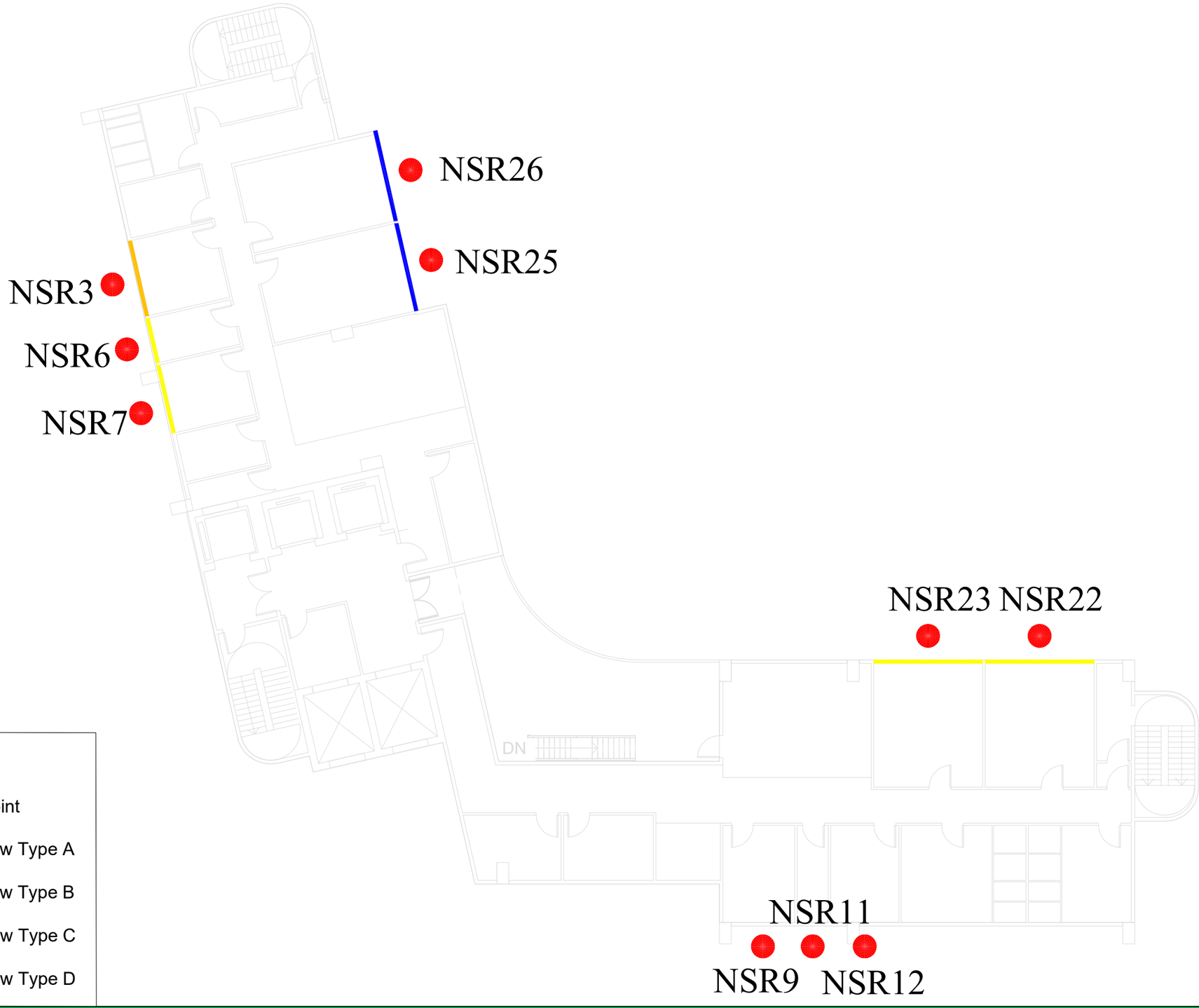
URBAN GREEN

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



URBAN GREEN

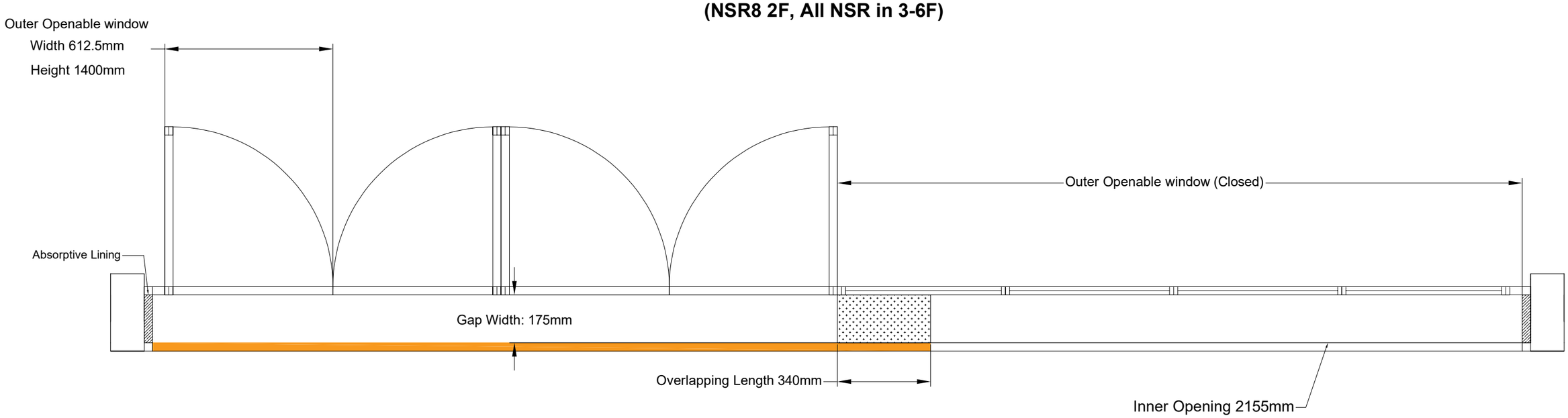
Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord lot No. T77 in D.D. 34 Tai Po

Location of Noise Mitigation Measures (9/F)

Figure 4.2d

Rev. 0

Configuration of Acoustic Window (Baffle Type); Wall: 5.05m;
(NSR8 2F, All NSR in 3-6F)



Legend

Sliding Window

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

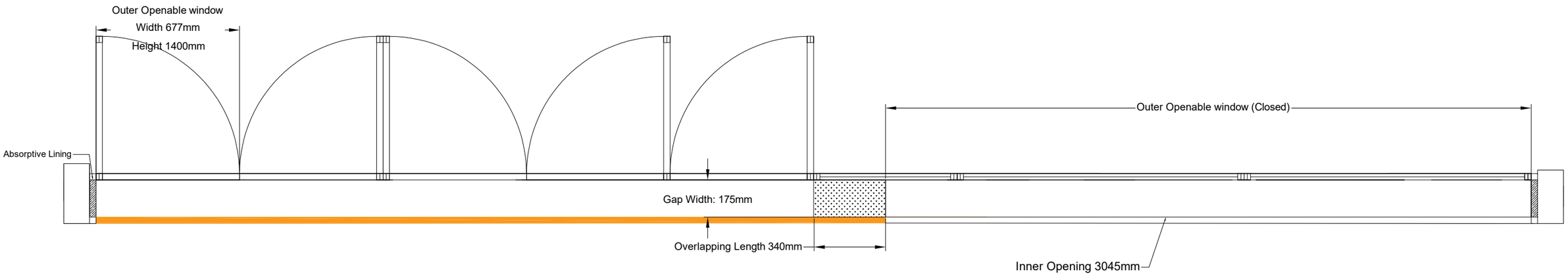
Configuration of **Type A** Acoustic Window (Baffle Type)

URBAN GREEN

Figure 4.3a

Rev. 0

Configuration of Acoustic Window (Baffle Type); 6.83m wall; (NSR2 2F)



Legend

Sliding Window

URBAN GREEN

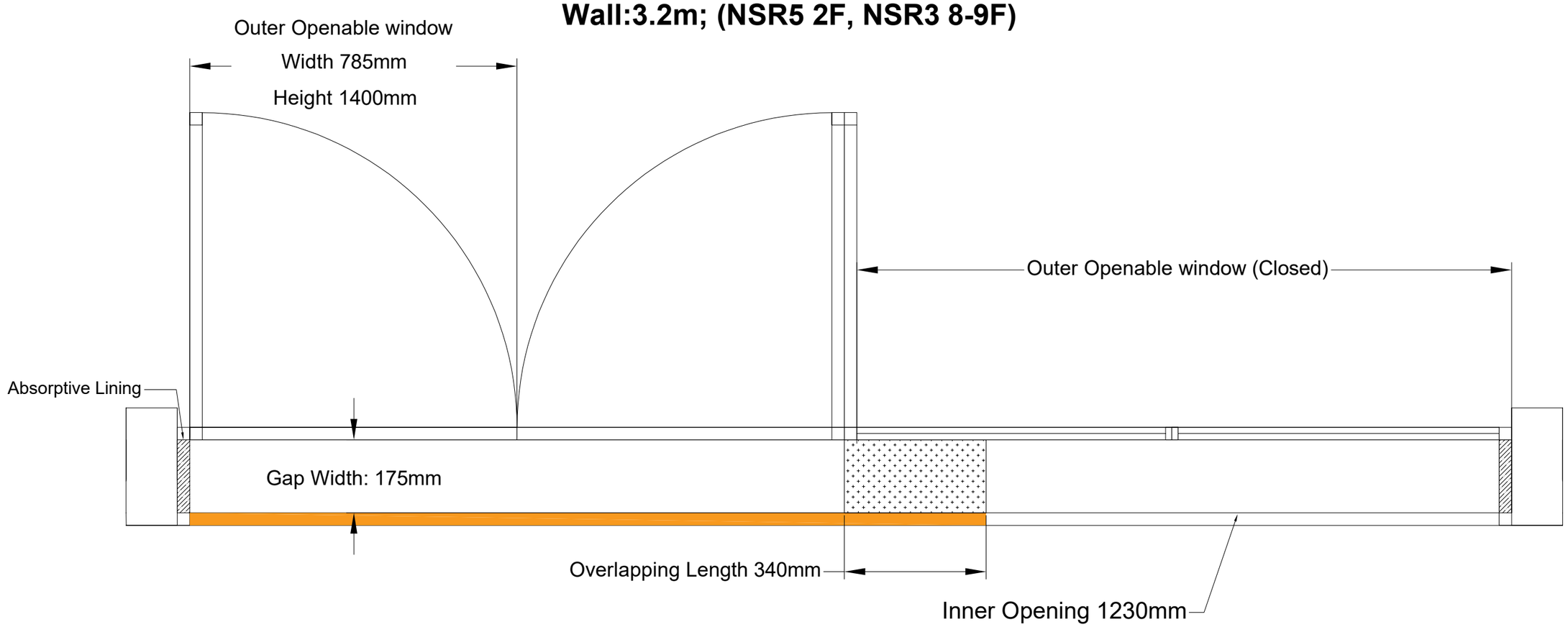
Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

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

Figure 4.3b

Rev. 0

Configuration of Acoustic Window (Baffle Type); Wall:3.2m; (NSR5 2F, NSR3 8-9F)



Legend

Sliding Window

URBAN GREEN

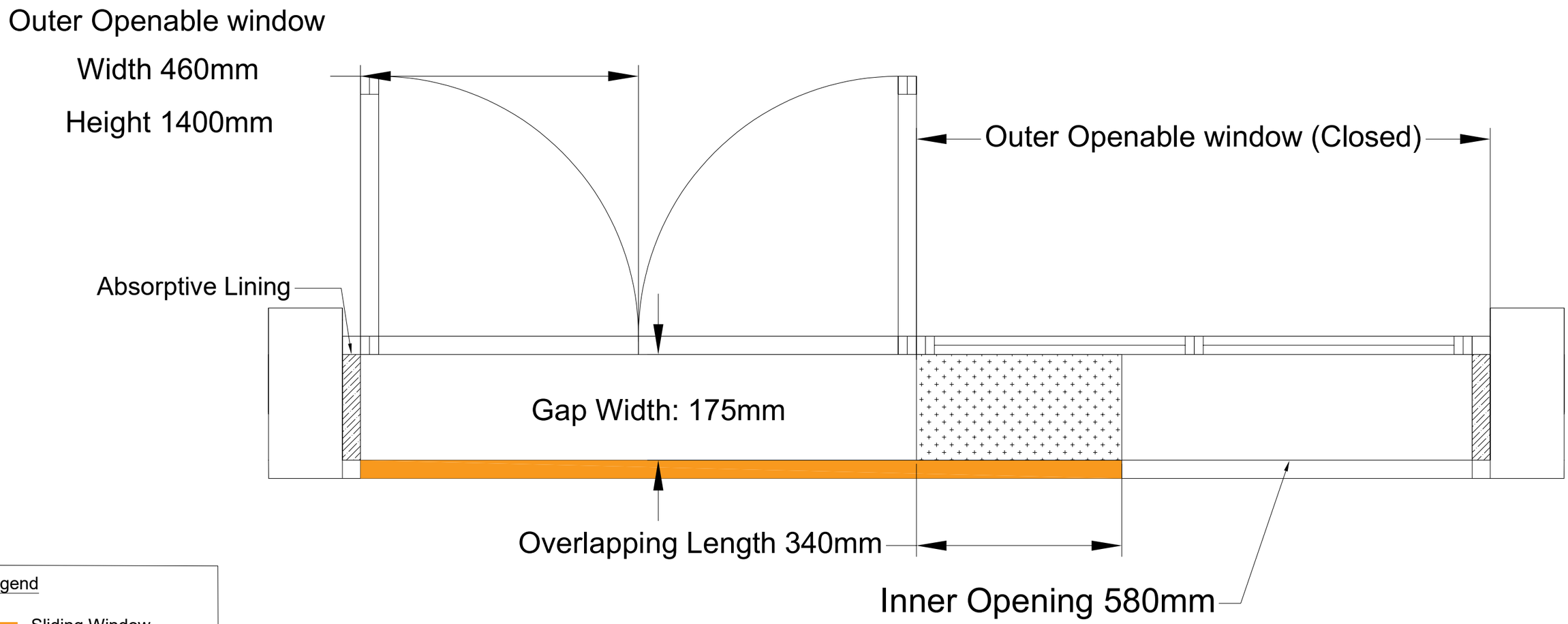
Proposed Development of Hong Kong Sheung Kung Hui St. Christopher's Complex at the Remaining Portion of Taxlord Lot No. T77 in D.D. 34 Tai Po

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

Figure 4.3c

Rev. 0

Configuration of Acoustic Window (Baffle Type); wall: 1.9m; (NSR6, 7 8-9F)



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 D** Acoustic Window (Baffle Type)

Figure 4.3d

Rev. 0

URBAN GREEN

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

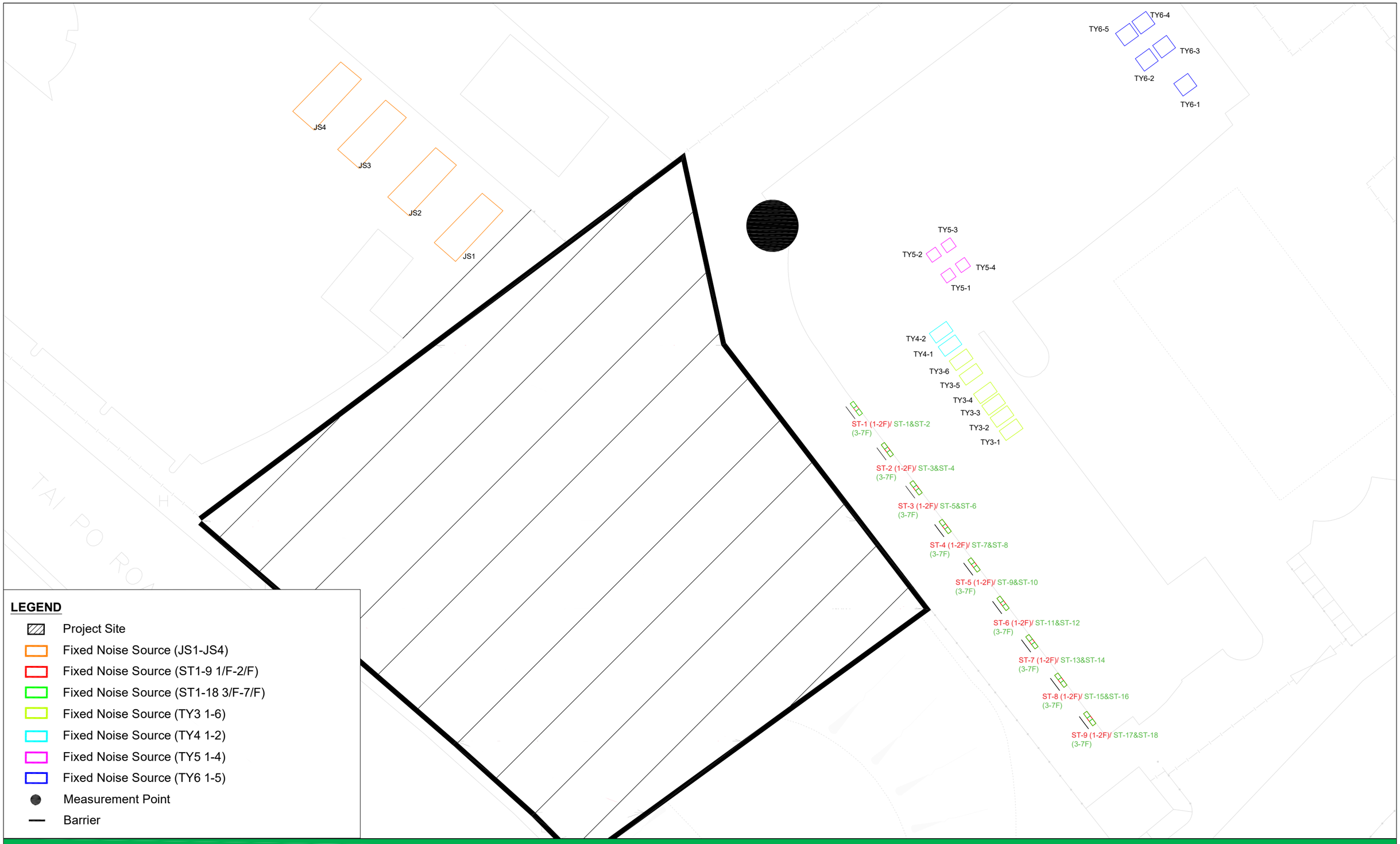
URBAN GREEN

Proposed 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 Representative Noise Sensitive Receiver and Noise Measurement Point

Figure 5.1

Rev. 0



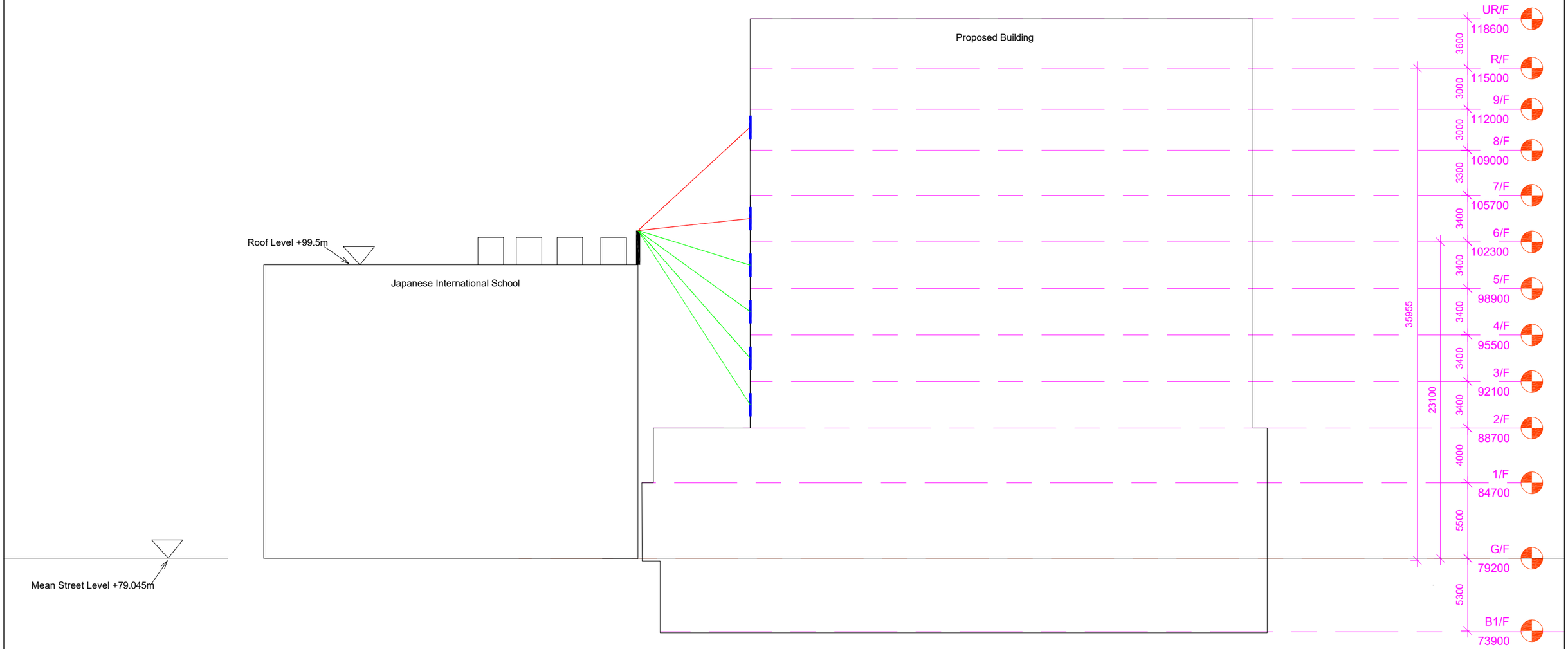
URBAN GREEN

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

Location Plan of Chiller and Measurement Location

Figure 5.2

Rev. 0



LEGEND

- Line of Sight (Not Direct)
- Line of Sight (Direct)
- Openable Window

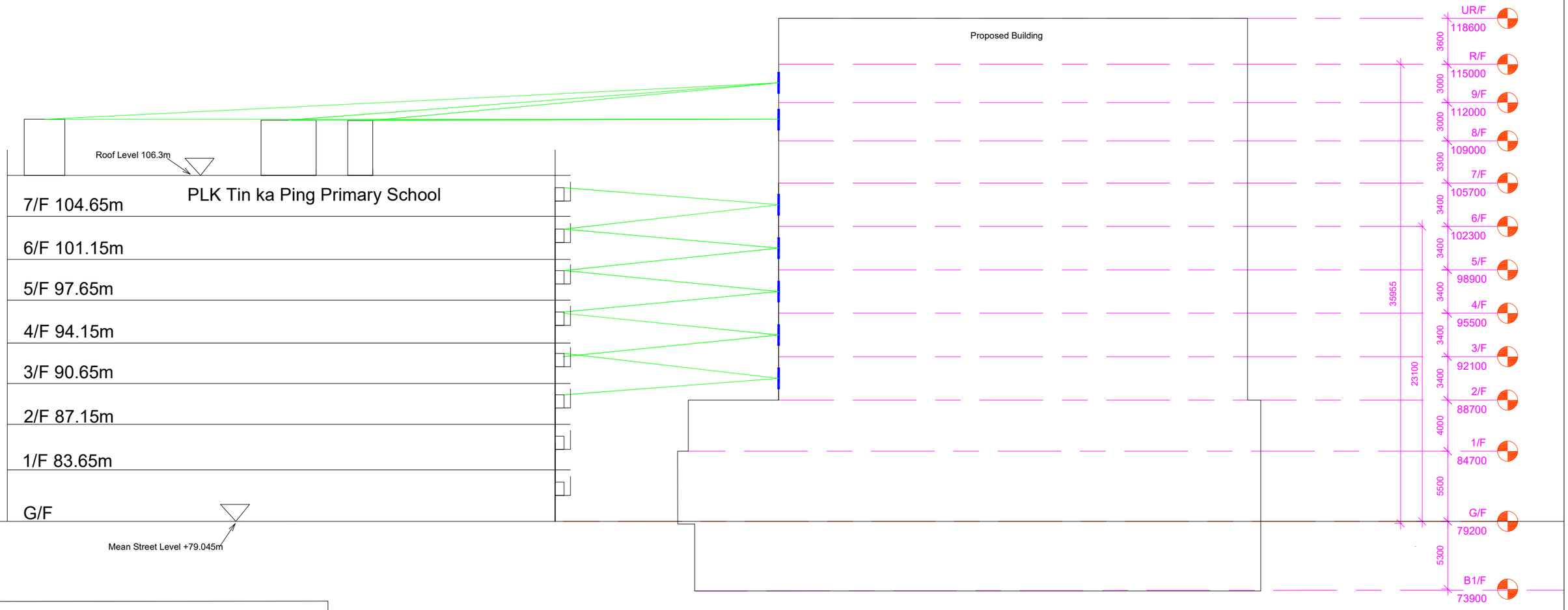
URBAN GREEN

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

Cross-Section Diagram (Japanese International School)

Figure 5.3

Rev. 0



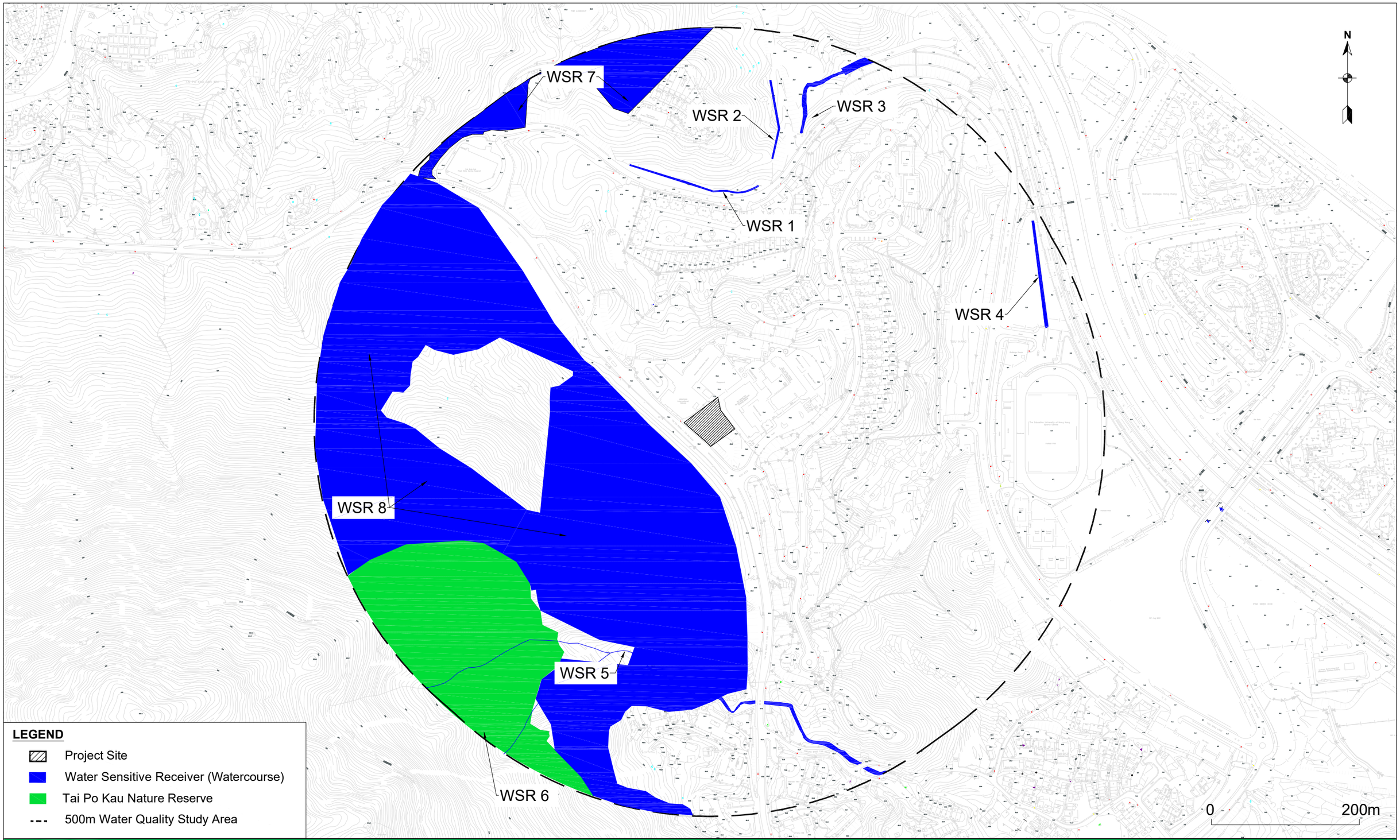
URBAN GREEN

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

Cross-Section Diagram (PLK Tin Ka Ping 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

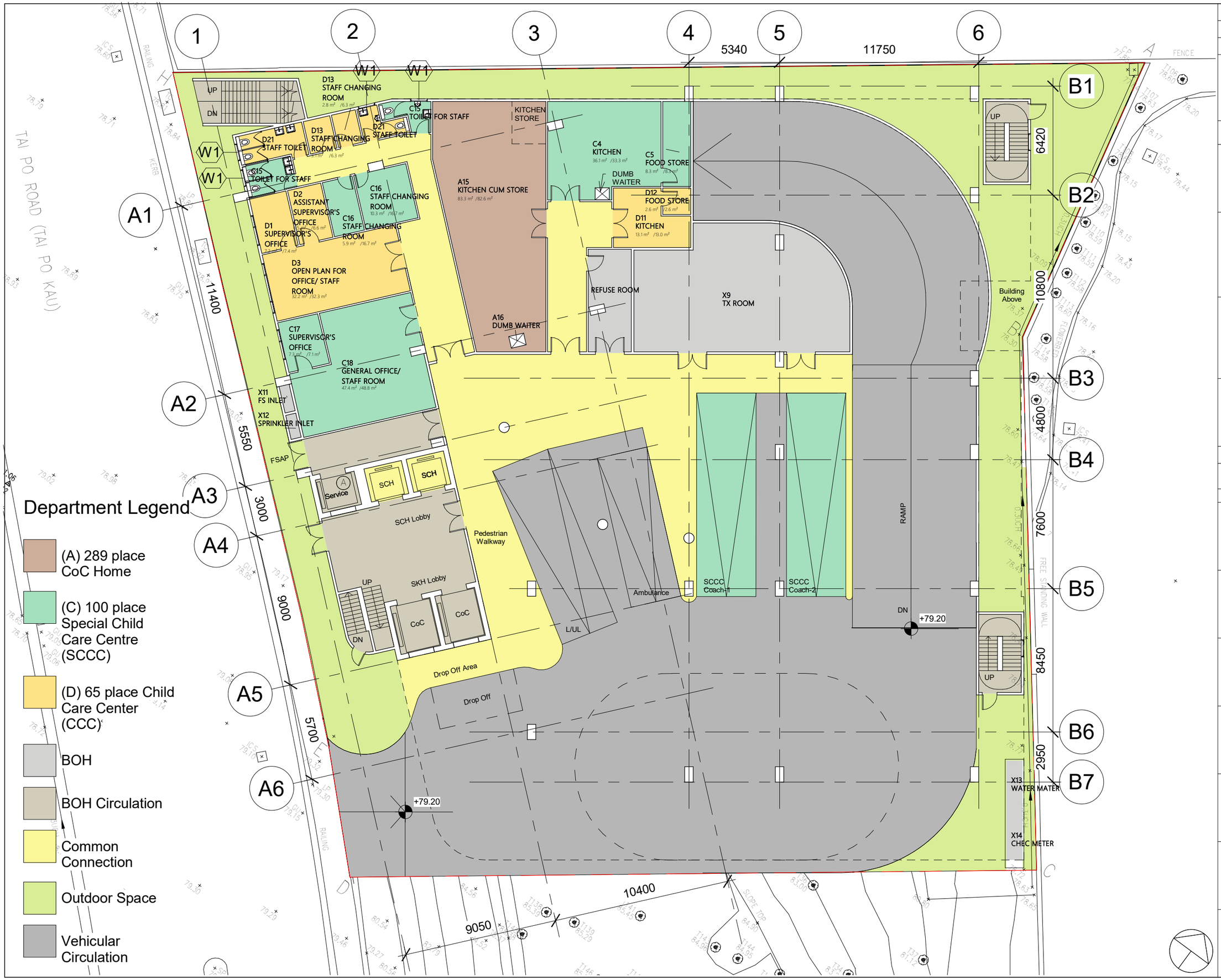
Location of Water Sensitive Receiver

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

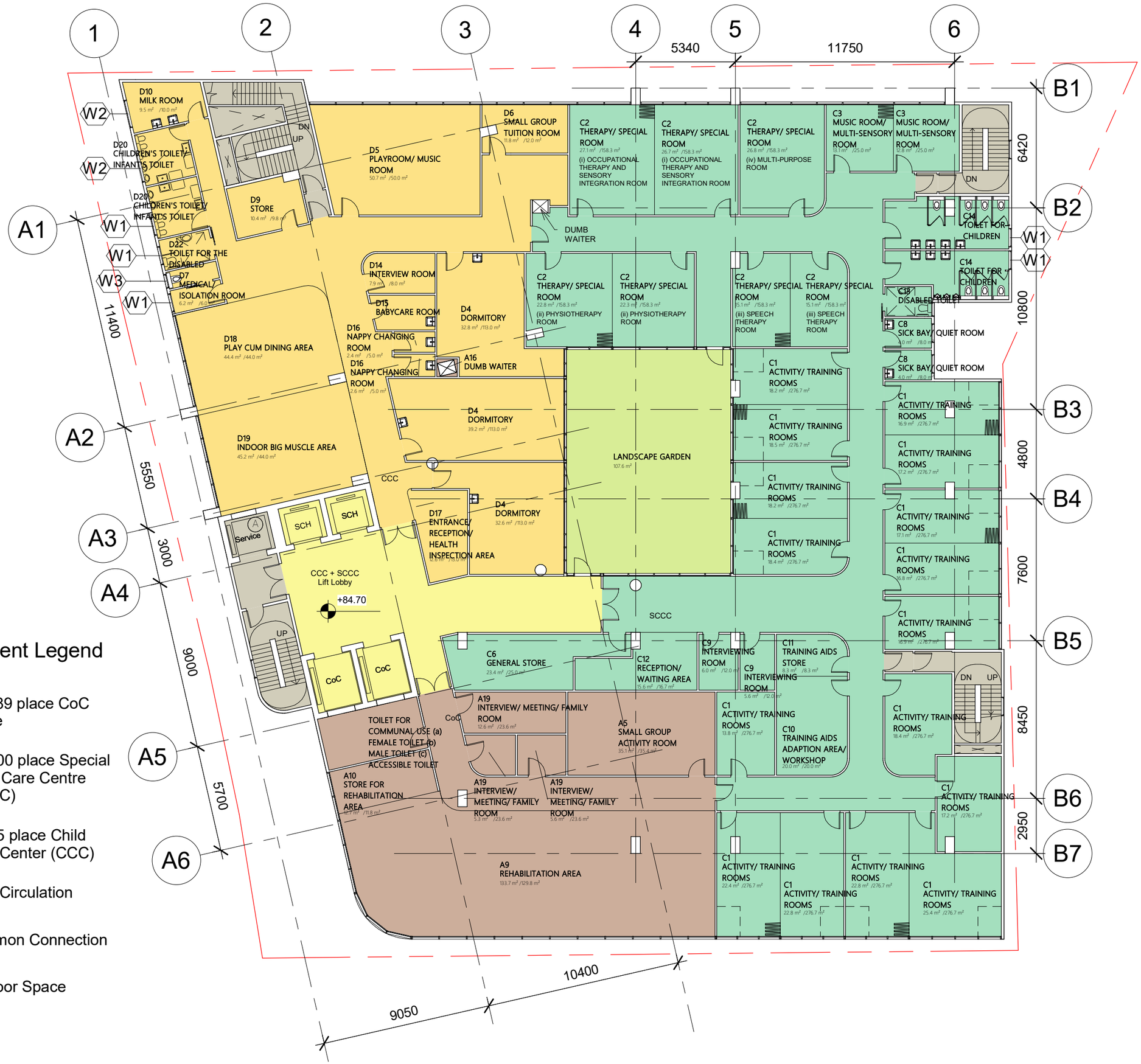
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

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

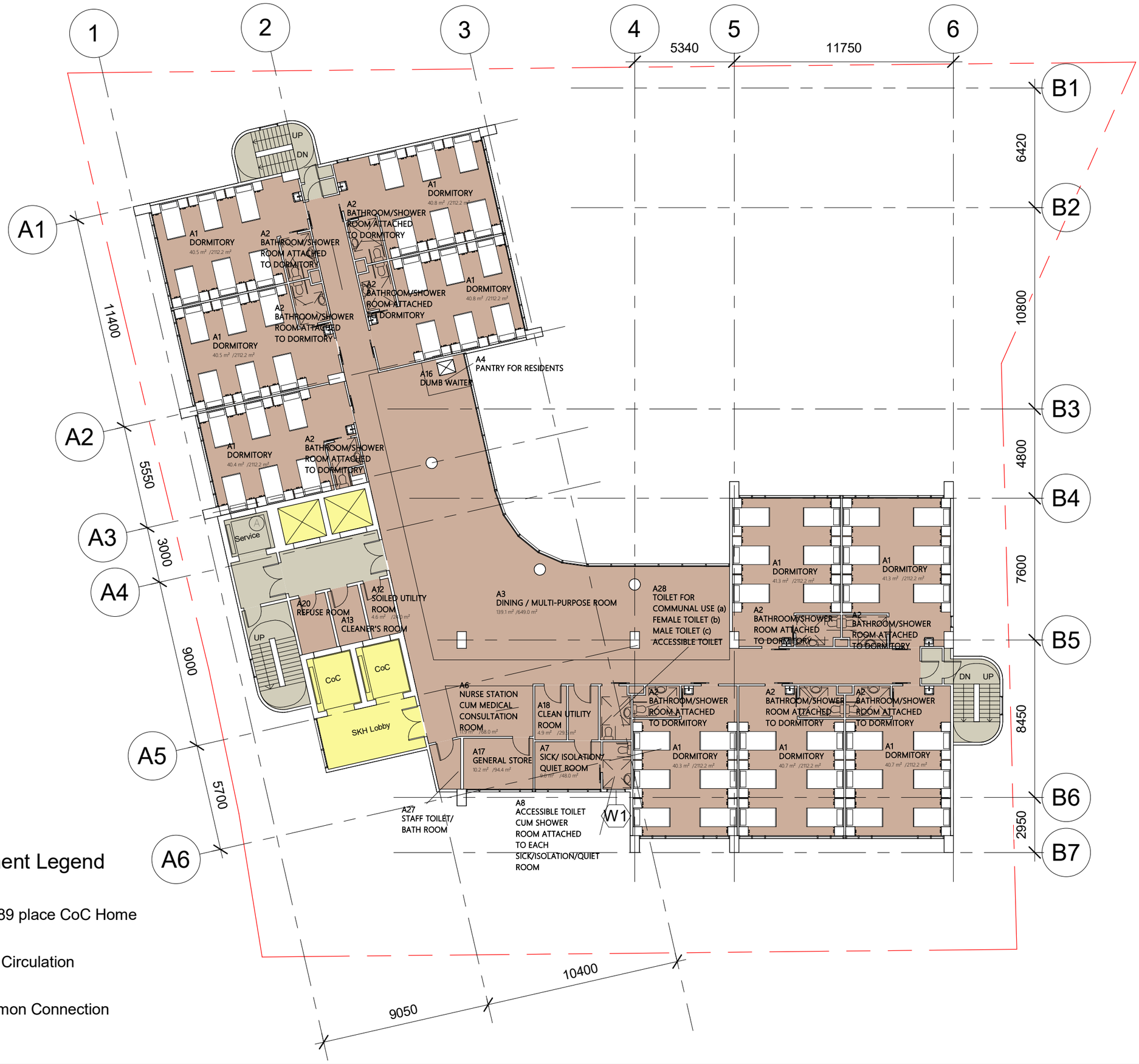
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

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 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

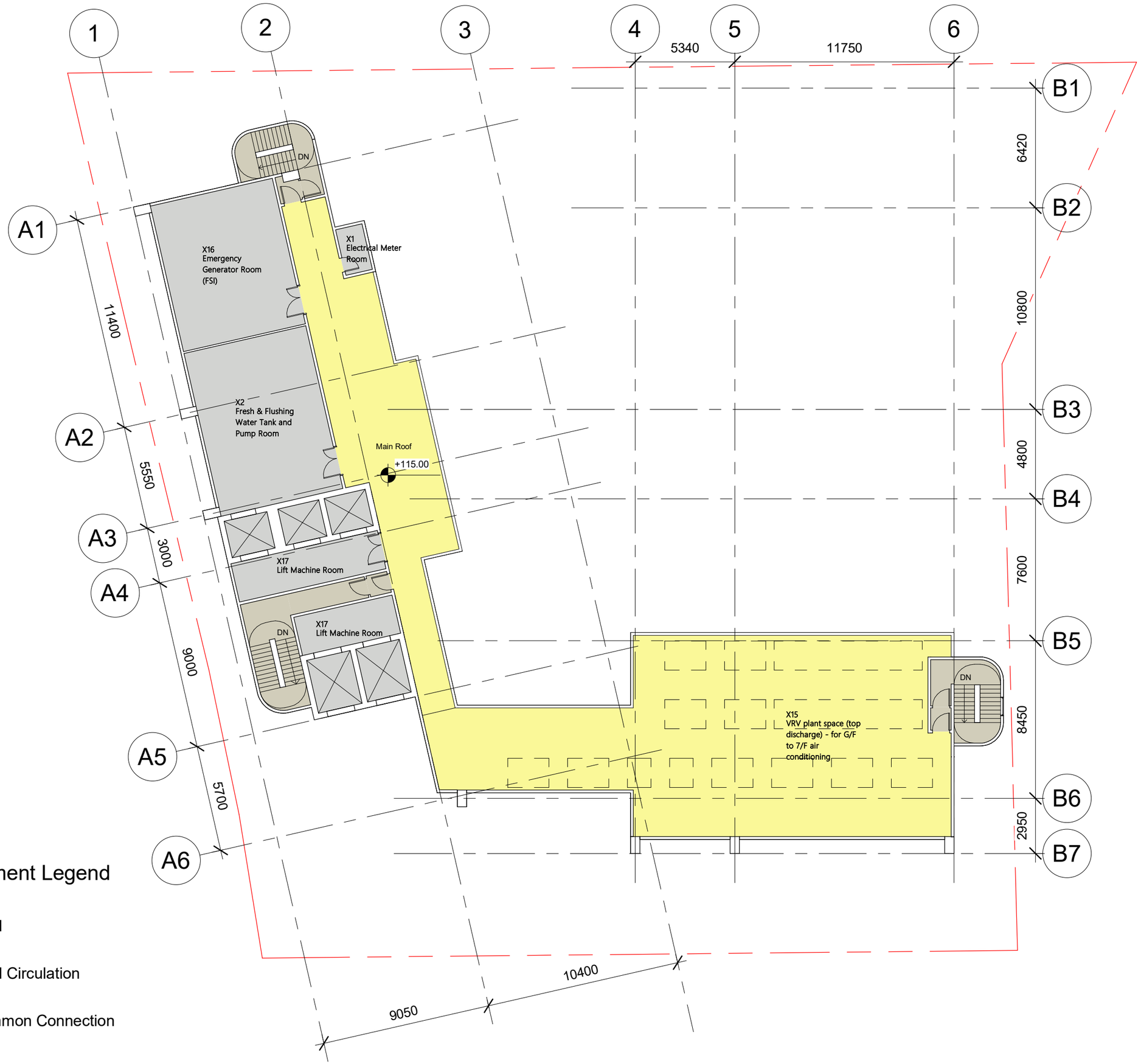
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

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

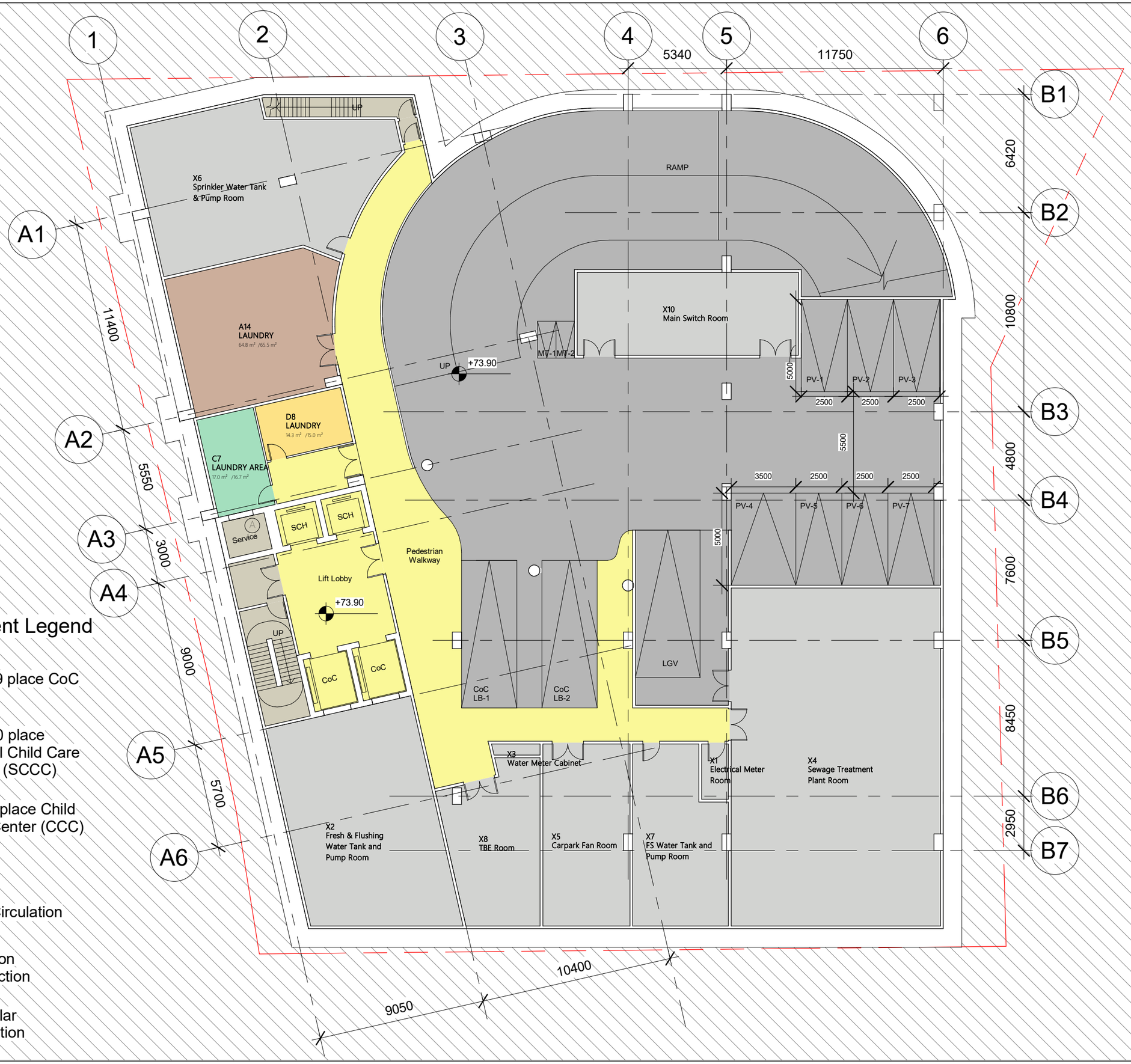
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

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

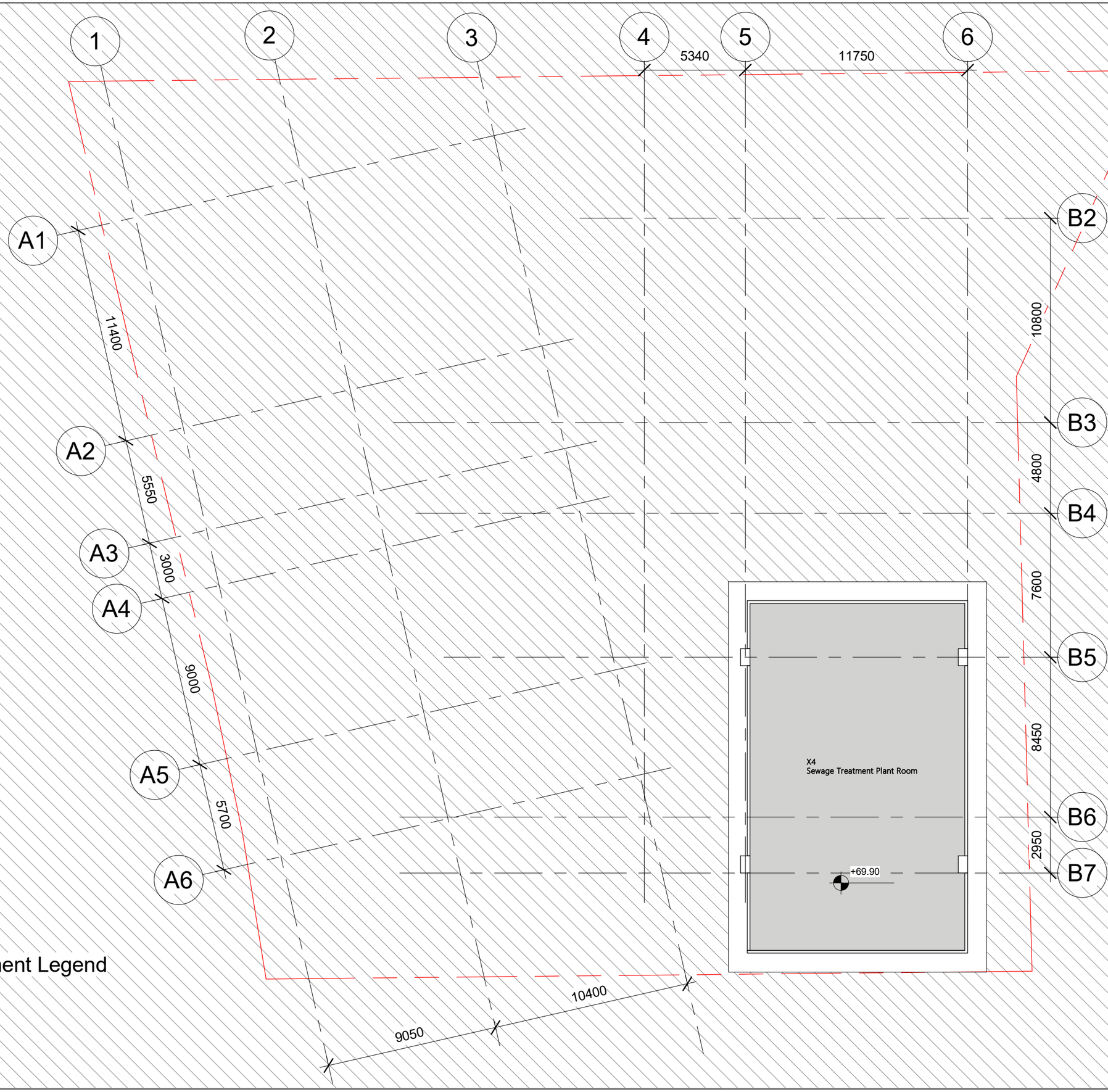
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

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

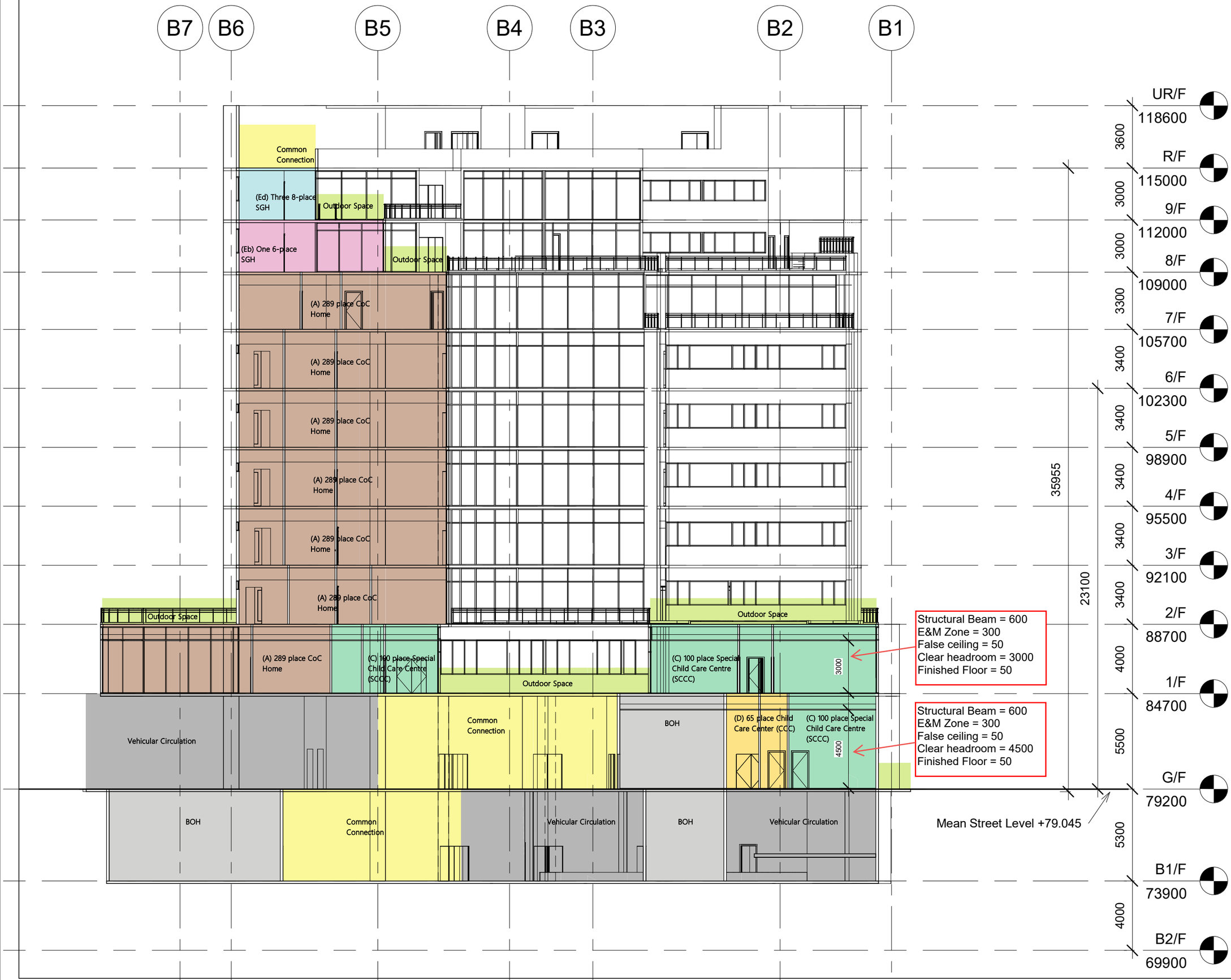
STRUCTURAL, CIVIL & GEOTECHNICAL ENGINEER
JMK Consulting Engineers Limited

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

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

---

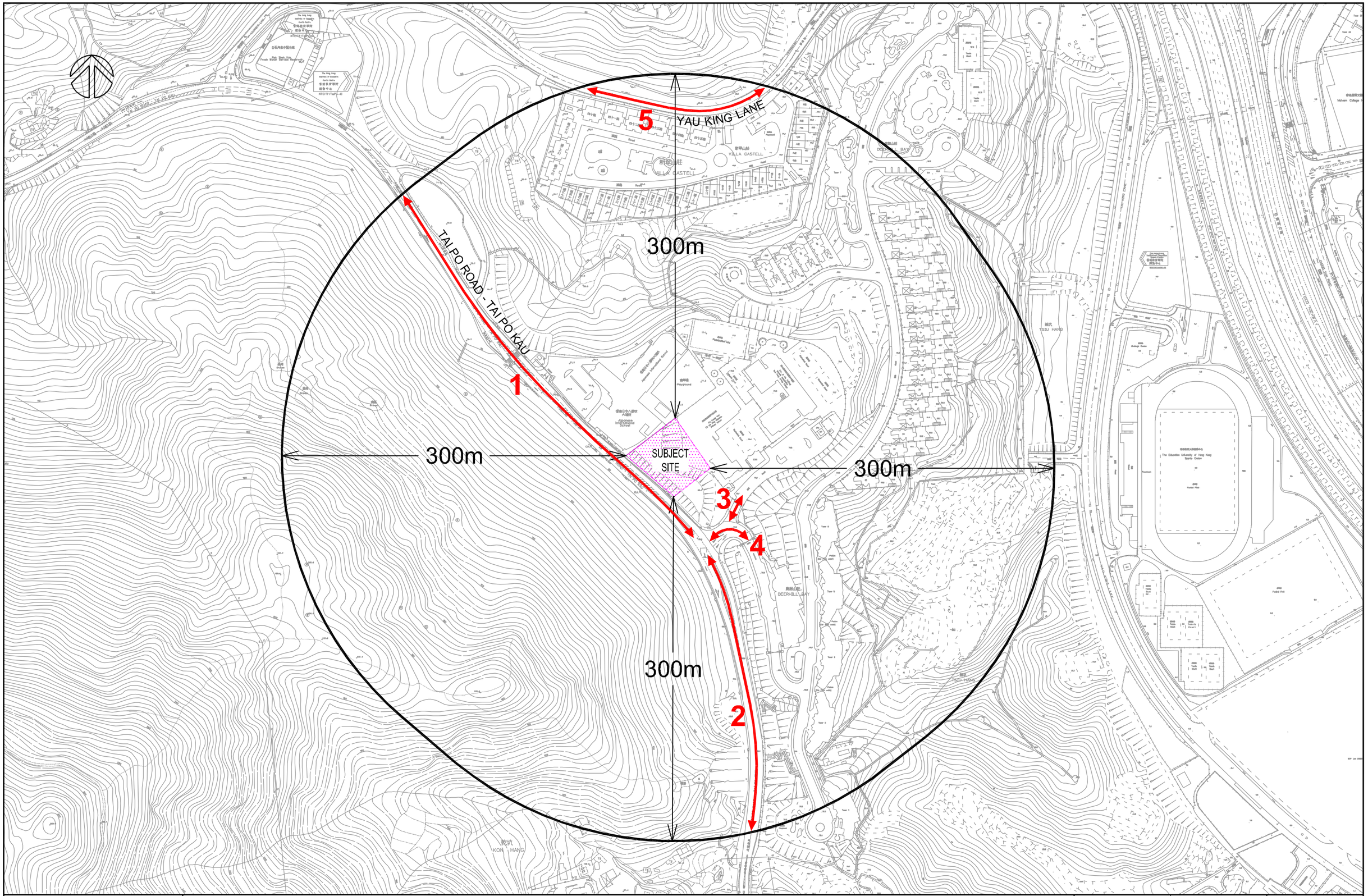
Dear Jacky,

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.

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

Appendix C

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 (Unmitigated)

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			64	65	43	43	39	36		36						
3	77			77				77		70			69	69	46	47			39		36					
4	76			77				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		45					
8			74			74	74		70		70	69											52	53	52	55
9			74			74	74		70		69	69										54	56		58	58

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

Appendix D

Road Traffic Noise Result (Mitigated 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

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		57			56	57	35	35	31	28		28						
3	69			69				69		62			61	61	38	39			31		28					
4	68			69				68		62			61	61	39	40			33		31					
5	68			68				68		62			61	61	40	41			36		34					
6	67			67				67		62			61	61	41	42			40		37					
8			66			66	66		62		62	61											44	45	44	47
9			66			66	66		62		61	61										46	48		50	50

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

Mitigation Measure:	
Acoustic Window Type A	-8dB(A)
Acoustic Window Type B	-8dB(A)
Acoustic Window Type C	-8dB(A)
Acoustic Window Type D	-8dB(A)

*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.

Appendix E

Reference of Acoustic Window Noise Reduction

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

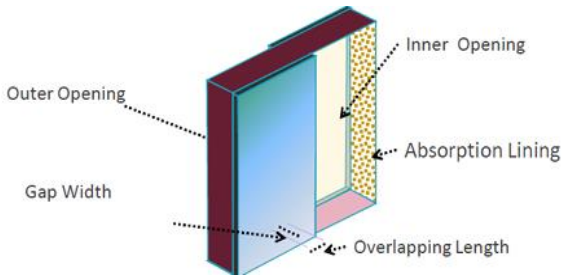
Reference of Acoustic Window Configuration Noise Reduction

Kwai Tsui Estate

Outer Opening (mm)	Inner Opening (mm)	Gap Width (mm)	Overlapping Length (mm)	Room Size (m^2)	Relative Noise Reduction (dBA)	
					Min	Max
970-1370	**970-1370**	**175**	**340**	**9.4 – 30.2**	**6**	**8**

Room Area:

Flat Type	Usable Floor Area
1P/2P	9.4
2P/3P	16.0
1B-1	23.8
1B-2	23.7
2B-1	30.2
2B-2	30.2



Room detail extracted from the building layout from the Kwai Tsui Estate

Size of rooms requiring noise mitigation measure in the Proposed Development

Dormitory Type	Exceeding road noise level by	Average Area (m2)
NSR 1	5-7dB (A)	40.5
NSR 2	8dB (A)	32.7
NSR 3	4dB (A)	11.1
NSR 4	5-7dB (A	40.5
NSR 5	8dB (A)	16.9
NSR 6	4dB (A)	6.6
NSR 7	4dB (A)	10.0
NSR 8	5-8dB (A)	40.4

Dormitory Type	Exceeding noise criteria by	Average Area (m2)
NSR 19	3dB (A)	40.8
NSR 21	3dB (A)	40.8

Appendix F

Noise Measurement Records and Photo Records

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		NSR1		NSR2		NSR3		
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

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	20 Oct 2022			
Monitoring Location		NSR1		
Description of the Location		Japanese International School		
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		30mins Laeq Monitoring		
Time of Monitoring	Start	16:04		
	Finish	16:34		
Measured 30mins Laeq(dB(A))		58.4		
Corrected Noise Level (dB(A))		58.4		
Significant Noise Source		Nil		
		Name	Signature	Date
Recorded by		Ailyn Chiu	Ailyn	10-21-2022
Checked by		Emily Tang	Emily	10-21-2022

Noise Measurement Photo Record

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

Far field measurement

20 October 2022			

Appendix G

Estimation of Fixed Noise Sources Noise Level

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 Pressure Level Lpf[1]	Measuring Distance (r) [2]	Barometric Pressure[3]	Reference Barometric Pressure	Air Temperature during measurement	Estimated Sound Power Level of Noise Source
	dB(A)	m	Pa	Pa	°C	dB(A)
ST-(1-9) (1-2/F)	48	1.68	1,01325 x 10^5	1,01325 x 10^5	25.5	63.2

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

Fixed Noise Source	Sound Pressure Level Lpf[1] (-3dB(A) for semi-anechoic chamber)	Measuring Distance (r) [2]	Barometric Pressure[3]	Reference Barometric Pressure	Air Temperature during measurement	Estimated Sound Power Level of Noise Source
	dB(A)	m	Pa	Pa	°C	dB(A)
TY3	56	3.4	1,01325 x 10^5	1,01325 x 10^5	25.5	77.4

Fixed Noise Source	Sound Pressure Level Lpf[1] (-3dB(A) for semi-anechoic chamber)	Measuring Distance (r) [2]	Barometric Pressure[3]	Reference Barometric Pressure	Air Temperature during measurement	Estimated Sound Power Level of Noise Source
	dB(A)	m	Pa	Pa	°C	dB(A)
TY4	52	1.94	1,01325 x 10^5	1,01325 x 10^5	25.5	68.5

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

Fixed Noise Source	Source Height	Measured Noise Level	Slant Distance from the Measurement Point	Distance Attenuation	Barrier Correction	Façade Correcion	Estimated Sound Power Level of Noise Source
	mPD	dB(A)	m	dB(A)	dB(A)	dB(A)	dB(A)
JS	95.5	58.4	33.18	38.42	0	0	97

$$L_w = \overline{L_{pf}} + 10 \times \log_{10}\frac{S_1}{S_0} + C_1 + C_2 \qquad \text{Eq. 2-8}$$

Where

$$C_1 = -10\lg\left[\frac{B}{B_0}\sqrt{\frac{313.15}{273.15+\theta}}\right] \qquad \text{Eq. 2-9}$$

$$C_2 = -15\lg\left[\frac{B}{B_0}\sqrt{\frac{296.15}{273.15+\theta}}\right] \qquad \text{Eq. 2-10}$$

$\overline{L_{pf}}$ is the surface sound pressure level over the test sphere, in decibels (ref. 20 μPa);

S_1 = 4 π r^2 is the area of the test sphere (of radius r);

S_0 = 1 m^2;

B is the barometric pressure during the measurements, in pascals;

B_0 is the reference barometric pressure, 1,01325 × 10^5 Pa;

θ is the air temperature during measurement, in degrees Celsius.

Eq. 2-8 is applicable in the temperature range 15 °C ≤ θ ≤ 30 °C

Notes:
(1) Sound Pressure Level Measured in anechoic chamber
(1) Sound Pressure Level Measured in semi-anechoic chamber, 3dB(A) will added
(3) Measuring radius will be twice the major machine dimension
(4) Barometric Pressure assume to be standard atmosphere (1atm)

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)	Barrier Correction							Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
ST-4 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	DAIKIN AC Outdoor Unit	838245	832349	87.395	2.805	4	63	838244	832348	88	0.6	12.2	12.7	0.0	5.5	12.7	27.1	-	-	5.5	3	33.7
ST-5 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	DAIKIN AC Outdoor Unit	838248	832345	87.395	2.805	4	63	838247	832344	88	0.6	13.3	13.8	0.1	6.6	13.8	27.8	-	-	6.6	3	31.9
ST-6 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	DAIKIN AC Outdoor Unit	838250	832341	87.395	2.805	4	63	838250	832341	88	0.6	15.7	16.1	0.1	8.2	16.1	29.1	-	-	8.2	3	28.9
ST-7 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	DAIKIN AC Outdoor Unit	838253	832337	87.395	2.805	4	63	838253	832337	88	0.6	18.9	19.3	0.2	9.4	19.3	30.7	-	-	9.4	3	26.2
ST-8 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	DAIKIN AC Outdoor Unit	838256	832334	87.395	2.805	4	63	838255	832333	88	0.6	22.6	22.9	0.2	10.1	22.9	32.2	-	-	10.1	3	24.0
ST-9 2/F	PLK Ting Ka Ping Millennium Primary School 2/F	DAIKIN AC Outdoor Unit	838259	832330	87.395	2.805	4	63	838258	832330	88	0.6	26.6	26.9	0.3	10.6	26.9	33.6	-	-	10.6	3	22.1
ST-7 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838245	832349	90.895	0.695	4	62	838244	832348	91	0.6	11.9	12.4	0.1	7.3	12.4	26.9	-	-	7.3	3	30.8
ST-8 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838245	832348	90.895	0.695	4	62	838244	832348	91	0.6	12.0	12.5	0.1	7.1	12.5	26.9	-	-	7.1	3	31.0
ST-9 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838248	832345	90.895	0.695	4	62	838247	832344	91	0.6	12.9	13.3	0.1	8.5	13.3	27.5	-	-	8.5	3	29.0
ST-10 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838248	832344	90.895	0.695	4	62	838247	832344	91	0.6	13.2	13.7	0.1	7.2	13.7	27.7	-	-	7.2	3	30.1
ST-11 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838250	832341	90.895	0.695	4	62	838250	832341	91	0.6	15.3	15.6	0.2	9.8	15.6	28.8	-	-	9.8	3	26.4
ST-12 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838251	832340	90.895	0.695	4	62	838250	832341	91	0.6	15.7	16.2	0.1	8.2	16.2	29.1	-	-	8.2	3	27.7
ST-13 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838253	832337	90.895	0.695	4	62	838253	832337	91	0.6	18.5	18.7	0.3	10.7	18.7	30.4	-	-	10.7	4	24.9
ST-14 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838254	832337	90.895	0.695	4	62	838253	832337	91	0.6	19.0	19.4	0.2	9.0	19.4	30.7	-	-	9.0	5	27.2
ST-15 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838256	832334	90.895	0.695	4	62	838255	832333	91	0.6	22.2	22.4	0.4	11.3	22.4	32.0	-	-	11.3	6	24.7
ST-16 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838257	832333	90.895	0.695	4	62	838255	832333	91	0.6	22.8	23.2	0.2	9.6	23.2	32.3	-	-	9.6	7	27.1
ST-17 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838259	832330	90.895	0.695	4	62	838258	832330	91	0.6	26.2	26.4	0.4	11.7	26.4	33.4	-	-	11.7	8	24.9
ST-18 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838259	832329	90.895	0.695	4	62	838258	832330	91	0.6	26.8	27.2	0.2	10.1	27.2	33.6	-	-	10.1	9	27.3
																	Total Predicted Noise Level at NSR 1 (2/F)						41
																	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)	Barrier Correction								Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
ST-7 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838245	832349	90.895	2.705	4	62	838244	832348	91.15	0.6	12.2	12.7	0.0	5.6	12.7	27.0	-	-	5.6	3	32.4
ST-8 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838245	832348	90.895	2.705	4	62	838244	832348	91.15	0.6	12.2	12.7	0.0	5.3	12.7	27.1	-	-	5.3	3	32.7
ST-9 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838248	832345	90.895	2.705	4	62	838247	832344	91.15	0.6	13.1	13.6	0.1	7.3	13.6	27.6	-	-	7.3	3	30.0
ST-10 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838248	832344	90.895	2.705	4	62	838247	832344	91.15	0.6	13.4	13.9	0.0	5.6	13.9	27.9	-	-	5.6	3	31.5
ST-11 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838250	832341	90.895	2.705	4	62	838250	832341	91.15	0.6	15.4	15.8	0.2	9.1	15.8	29.0	-	-	9.1	3	27.0
ST-12 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838251	832340	90.895	2.705	4	62	838250	832341	91.15	0.6	15.9	16.4	0.1	7.1	16.4	29.3	-	-	7.1	3	28.6
ST-13 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838253	832337	90.895	2.705	4	62	838253	832337	91.15	0.6	18.6	18.9	0.3	10.2	18.9	30.5	-	-	10.2	3	24.3
ST-14 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838254	832337	90.895	2.705	4	62	838253	832337	91.15	0.6	19.2	19.6	0.1	8.3	19.6	30.8	-	-	8.3	3	25.9
ST-15 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838256	832334	90.895	2.705	4	62	838255	832333	91.15	0.6	22.3	22.6	0.3	10.9	22.6	32.0	-	-	10.9	3	22.1
ST-16 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838257	832333	90.895	2.705	4	62	838255	832333	91.15	0.6	22.9	23.3	0.2	9.1	23.3	32.3	-	-	9.1	3	23.6
ST-17 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838259	832330	90.895	2.705	4	62	838258	832330	91.15	0.6	26.3	26.5	0.4	11.4	26.5	33.4	-	-	11.4	3	20.2
ST-18 3/F	PLK Ting Ka Ping Millennium Primary School 3/F	General AC Outdoor Unit	838259	832329	90.895	2.705	4	62	838258	832330	91.15	0.6	26.9	27.3	0.2	9.7	27.3	33.7	-	-	9.7	3	21.6
ST-7 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838245	832349	94.395	0.795	4	62	838244	832348	94.65	0.6	12.0	12.4	0.1	7.4	12.4	26.9	-	-	7.4	3	30.8
ST-8 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838245	832348	94.395	0.795	4	62	838244	832348	94.65	0.6	12.0	12.5	0.1	7.1	12.5	26.9	-	-	7.1	3	31.0
ST-9 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838248	832345	94.395	0.795	4	62	838247	832344	94.65	0.6	12.9	13.3	0.1	8.6	13.3	27.5	-	-	8.6	3	29.0
ST-10 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838248	832344	94.395	0.795	4	62	838247	832344	94.65	0.6	13.2	13.7	0.1	7.3	13.7	27.7	-	-	7.3	3	30.0
ST-11 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838250	832341	94.395	0.795	4	62	838250	832341	94.65	0.6	15.3	15.6	0.2	9.8	15.6	28.8	-	-	9.8	3	26.3
ST-12 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838251	832340	94.395	0.795	4	62	838250	832341	94.65	0.6	15.7	16.2	0.1	8.2	16.2	29.1	-	-	8.2	3	27.6
ST-13 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838253	832337	94.395	0.795	4	62	838253	832337	94.65	0.6	18.5	18.8	0.3	10.7	18.8	30.4	-	-	10.7	3	23.9
ST-14 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838254	832337	94.395	0.795	4	62	838253	832337	94.65	0.6	19.0	19.4	0.2	9.0	19.4	30.7	-	-	9.0	3	25.2
ST-15 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838256	832334	94.395	0.795	4	62	838255	832333	94.65	0.6	22.2	22.4	0.4	11.3	22.4	32.0	-	-	11.3	3	21.7
ST-16 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838257	832333	94.395	0.795	4	62	838255	832333	94.65	0.6	22.8	23.2	0.2	9.7	23.2	32.3	-	-	9.7	3	23.1
ST-17 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838259	832330	94.395	0.795	4	62	838258	832330	94.65	0.6	26.2	26.4	0.4	11.7	26.4	33.4	-	-	11.7	3	19.9
ST-18 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838259	832329	94.395	0.795	4	62	838258	832330	94.65	0.6	26.8	27.2	0.2	10.1	27.2	33.6	-	-	10.1	3	21.3
																	Total Predicted Noise Level at NSR 1 (3/F)						42
																	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)	Barrier Correction							Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
ST-7 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838245	832349	94.395	2.605	4	62	838244	832348	94.65	0.6	12.1	12.7	0.0	5.6	12.7	27.0	-	-	5.6	3	32.3
ST-8 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838245	832348	94.395	2.605	4	62	838244	832348	94.65	0.6	12.2	12.7	0.0	5.3	12.7	27.1	-	-	5.3	3	32.6
ST-9 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838248	832345	94.395	2.605	4	62	838247	832344	94.65	0.6	13.1	13.6	0.1	7.4	13.6	27.6	-	-	7.4	3	30.0
ST-10 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838248	832344	94.395	2.605	4	62	838247	832344	94.65	0.6	13.4	13.9	0.0	5.7	13.9	27.8	-	-	5.7	3	31.5
ST-11 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838250	832341	94.395	2.605	4	62	838250	832341	94.65	0.6	15.4	15.8	0.2	9.1	15.8	28.9	-	-	9.1	3	27.0
ST-12 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838251	832340	94.395	2.605	4	62	838250	832341	94.65	0.6	15.9	16.4	0.1	7.1	16.4	29.2	-	-	7.1	3	28.6
ST-13 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838253	832337	94.395	2.605	4	62	838253	832337	94.65	0.6	18.6	18.9	0.3	10.2	18.9	30.5	-	-	10.2	3	24.3
ST-14 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838254	832337	94.395	2.605	4	62	838253	832337	94.65	0.6	19.2	19.6	0.1	8.3	19.6	30.8	-	-	8.3	3	25.9
ST-15 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838256	832334	94.395	2.605	4	62	838255	832333	94.65	0.6	22.3	22.5	0.3	10.9	22.5	32.0	-	-	10.9	3	22.0
ST-16 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838257	832333	94.395	2.605	4	62	838255	832333	94.65	0.6	22.9	23.3	0.2	9.1	23.3	32.3	-	-	9.1	3	23.5
ST-17 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838259	832330	94.395	2.605	4	62	838258	832330	94.65	0.6	26.3	26.5	0.4	11.4	26.5	33.4	-	-	11.4	3	20.2
ST-18 4/F	PLK Ting Ka Ping Millennium Primary School 4/F	General AC Outdoor Unit	838259	832329	94.395	2.605	4	62	838258	832330	94.65	0.6	26.9	27.3	0.2	9.7	27.3	33.7	-	-	9.7	3	21.6
ST-7 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838245	832349	98.14	1.14	4	62	838244	832348	98.15	0.5	12.0	12.5	0.0	5.0	12.5	26.9	-	-	5.0	3	33.1
ST-8 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838245	832348	98.14	1.14	4	62	838244	832348	98.15	0.5	12.0	12.5	0.0	4.6	12.5	26.9	-	-	4.6	3	33.5
ST-9 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838248	832345	98.14	1.14	4	62	838247	832344	98.15	0.5	12.9	13.4	0.1	6.9	13.4	27.5	-	-	6.9	3	30.6
ST-10 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838248	832344	98.14	1.14	4	62	838247	832344	98.15	0.5	13.2	13.7	0.0	4.9	13.7	27.7	-	-	4.9	3	32.4
ST-11 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838250	832341	98.14	1.14	4	62	838250	832341	98.15	0.5	15.3	15.6	0.2	8.7	15.6	28.8	-	-	8.7	3	27.5
ST-12 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838251	832340	98.14	1.14	4	62	838250	832341	98.15	0.5	15.7	16.2	0.0	6.5	16.2	29.2	-	-	6.5	3	29.4
ST-13 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838253	832337	98.14	1.14	4	62	838253	832337	98.15	0.5	18.5	18.8	0.2	9.8	18.8	30.4	-	-	9.8	3	24.7
ST-14 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838254	832337	98.14	1.14	4	62	838253	832337	98.15	0.5	19.1	19.5	0.1	7.7	19.5	30.8	-	-	7.7	3	26.5
ST-15 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838256	832334	98.14	1.14	4	62	838255	832333	98.15	0.5	22.2	22.4	0.3	10.6	22.4	32.0	-	-	10.6	3	22.5
ST-16 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838257	832333	98.14	1.14	4	62	838255	832333	98.15	0.5	22.8	23.2	0.1	8.6	23.2	32.3	-	-	8.6	3	24.2
ST-17 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838259	832330	98.14	1.14	4	62	838258	832330	98.15	0.5	26.2	26.4	0.3	11.0	26.4	33.4	-	-	11.0	3	20.6
ST-18 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838259	832329	98.14	1.14	4	62	838258	832330	98.15	0.5	26.8	27.2	0.2	9.1	27.2	33.7	-	-	9.1	3	22.2
																	Total Predicted Noise Level at NSR 1 (4/F)						**43**
																	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)	Barrier Correction								Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
ST-7 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838245	832349	97.895	2.505	4	62	838244	832348	98.15	0.6	12.1	12.7	0.0	5.7	12.7	27.0	-	-	5.7	3	32.3
ST-8 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838245	832348	97.895	2.505	4	62	838244	832348	98.15	0.6	12.2	12.7	0.0	5.3	12.7	27.1	-	-	5.3	3	32.6
ST-9 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838248	832345	97.895	2.505	4	62	838247	832344	98.15	0.6	13.1	13.5	0.1	7.4	13.5	27.6	-	-	7.4	3	30.0
ST-10 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838248	832344	97.895	2.505	4	62	838247	832344	98.15	0.6	13.4	13.9	0.0	5.7	13.9	27.8	-	-	5.7	3	31.4
ST-11 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838250	832341	97.895	2.505	4	62	838250	832341	98.15	0.6	15.4	15.8	0.2	9.1	15.8	28.9	-	-	9.1	3	27.0
ST-12 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838251	832340	97.895	2.505	4	62	838250	832341	98.15	0.6	15.9	16.3	0.1	7.2	16.3	29.2	-	-	7.2	3	28.6
ST-13 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838253	832337	97.895	2.505	4	62	838253	832337	98.15	0.6	18.6	18.9	0.3	10.2	18.9	30.5	-	-	10.2	3	24.3
ST-14 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838254	832337	97.895	2.505	4	62	838253	832337	98.15	0.6	19.2	19.6	0.1	8.4	19.6	30.8	-	-	8.4	3	25.8
ST-15 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838256	832334	97.895	2.505	4	62	838255	832333	98.15	0.6	22.3	22.5	0.3	10.9	22.5	32.0	-	-	10.9	3	22.0
ST-16 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838257	832333	97.895	2.505	4	62	838255	832333	98.15	0.6	22.9	23.3	0.2	9.1	23.3	32.3	-	-	9.1	3	23.5
ST-17 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838259	832330	97.895	2.505	4	62	838258	832330	98.15	0.6	26.3	26.5	0.4	11.4	26.5	33.4	-	-	11.4	3	20.2
ST-18 5/F	PLK Ting Ka Ping Millennium Primary School 5/F	General AC Outdoor Unit	838259	832329	97.895	2.505	4	62	838258	832330	98.15	0.6	26.9	27.3	0.2	9.7	27.3	33.7	-	-	9.7	3	21.6
ST-7 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838245	832349	101.395	0.995	4	62	838244	832348	101.65	0.6	12.0	12.4	0.1	7.5	12.4	26.9	-	-	7.5	3	30.7
ST-8 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838245	832348	101.395	0.995	4	62	838244	832348	101.65	0.6	12.0	12.5	0.1	7.3	12.5	26.9	-	-	7.3	3	30.8
ST-9 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838248	832345	101.395	0.995	4	62	838247	832344	101.65	0.6	12.9	13.4	0.1	8.6	13.4	27.5	-	-	8.6	3	28.9
ST-10 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838248	832344	101.395	0.995	4	62	838247	832344	101.65	0.6	13.2	13.7	0.1	7.4	13.7	27.7	-	-	7.4	3	29.9
ST-11 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838250	832341	101.395	0.995	4	62	838250	832341	101.65	0.6	15.3	15.6	0.2	9.9	15.6	28.8	-	-	9.9	3	26.3
ST-12 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838251	832340	101.395	0.995	4	62	838250	832341	101.65	0.6	15.7	16.2	0.1	8.3	16.2	29.2	-	-	8.3	3	27.6
ST-13 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838253	832337	101.395	0.995	4	62	838253	832337	101.65	0.6	18.5	18.8	0.3	10.7	18.8	30.4	-	-	10.7	3	23.8
ST-14 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838254	832337	101.395	0.995	4	62	838253	832337	101.65	0.6	19.1	19.4	0.2	9.1	19.4	30.7	-	-	9.1	3	25.2
ST-15 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838256	832334	101.395	0.995	4	62	838255	832333	101.65	0.6	22.2	22.4	0.4	11.3	22.4	32.0	-	-	11.3	3	21.7
ST-16 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838257	832333	101.395	0.995	4	62	838255	832333	101.65	0.6	22.8	23.2	0.2	9.7	23.2	32.3	-	-	9.7	3	23.0
ST-17 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838259	832330	101.395	0.995	4	62	838258	832330	101.65	0.6	26.2	26.4	0.4	11.7	26.4	33.4	-	-	11.7	3	19.9
ST-18 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838259	832329	101.395	0.995	4	62	838258	832330	101.65	0.6	26.8	27.2	0.2	10.1	27.2	33.7	-	-	10.1	3	21.2
																	Total Predicted Noise Level at NSR 1 (5/F)						**42**
																	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)	Barrier Correction								Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
JS1 & JS2 & JS3 & JS4	Japan Internation School R/F		838192	832389	99.5	0.9	2	97	838206	832378	102	15.7	9.9	25.5	0.1	8.5	25.5	36.1	-	-	8.5	3	55.2
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	838237	832358	98.15	0.6	39.3	39.7	0.2	9.0	39.7	36.9	-	-	9.0	4	20.1
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	838237	832358	98.15	0.6	39.8	40.2	0.1	8.5	40.2	37.1	-	-	8.5	5	21.5
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	838240	832354	101.65	0.6	39.3	39.6	0.2	9.3	39.6	36.9	-	-	9.3	3	18.8
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	838240	832354	101.65	0.6	39.8	40.2	0.2	8.8	40.2	37.0	-	-	8.8	3	19.1
																	Total Predicted Noise Level at NSR 1 (5/F)						**55**
																	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)	Barrier Correction							Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
ST-7 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838245	832349	101.395	2.405	4	62	838244	832348	101.65	0.6	12.1	12.6	0.0	5.7	12.6	27.0	-	-	5.7	3	32.3
ST-8 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838245	832348	101.395	2.405	4	62	838244	832348	101.65	0.6	12.1	12.7	0.0	5.4	12.7	27.0	-	-	5.4	3	32.6
ST-9 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838248	832345	101.395	2.405	4	62	838247	832344	101.65	0.6	13.1	13.5	0.1	7.4	13.5	27.6	-	-	7.4	3	30.0
ST-10 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838248	832344	101.395	2.405	4	62	838247	832344	101.65	0.6	13.3	13.9	0.0	5.8	13.9	27.8	-	-	5.8	3	31.4
ST-11 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838250	832341	101.395	2.405	4	62	838250	832341	101.65	0.6	15.4	15.8	0.2	9.1	15.8	28.9	-	-	9.1	3	27.0
ST-12 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838251	832340	101.395	2.405	4	62	838250	832341	101.65	0.6	15.8	16.3	0.1	7.2	16.3	29.2	-	-	7.2	3	28.6
ST-13 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838253	832337	101.395	2.405	4	62	838253	832337	101.65	0.6	18.6	18.9	0.3	10.2	18.9	30.5	-	-	10.2	3	24.3
ST-14 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838254	832337	101.395	2.405	4	62	838253	832337	101.65	0.6	19.1	19.6	0.1	8.4	19.6	30.8	-	-	8.4	3	25.8
ST-15 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838256	832334	101.395	2.405	4	62	838255	832333	101.65	0.6	22.3	22.5	0.3	10.9	22.5	32.0	-	-	10.9	3	22.0
ST-16 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838257	832333	101.395	2.405	4	62	838255	832333	101.65	0.6	22.9	23.3	0.2	9.2	23.3	32.3	-	-	9.2	3	23.5
ST-17 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838259	832330	101.395	2.405	4	62	838258	832330	101.65	0.6	26.3	26.5	0.4	11.4	26.5	33.4	-	-	11.4	3	20.2
ST-18 6/F	PLK Ting Ka Ping Millennium Primary School 6/F	General AC Outdoor Unit	838259	832329	101.395	2.405	4	62	838258	832330	101.65	0.6	26.9	27.2	0.2	9.7	27.2	33.7	-	-	9.7	3	21.6
ST-7 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838245	832349	104.895	1.095	4	62	838244	832348	105.15	0.6	12.0	12.5	0.1	7.5	12.5	26.9	-	-	7.5	3	30.6
ST-8 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838245	832348	104.895	1.095	4	62	838244	832348	105.15	0.6	12.0	12.5	0.1	7.3	12.5	26.9	-	-	7.3	3	30.8
ST-9 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838248	832345	104.895	1.095	4	62	838247	832344	105.15	0.6	12.9	13.4	0.1	8.7	13.4	27.5	-	-	8.7	3	28.8
ST-10 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838248	832344	104.895	1.095	4	62	838247	832344	105.15	0.6	13.2	13.7	0.1	7.4	13.7	27.7	-	-	7.4	3	29.8
ST-11 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838250	832341	104.895	1.095	4	62	838250	832341	105.15	0.6	15.3	15.6	0.2	9.9	15.6	28.8	-	-	9.9	3	26.3
ST-12 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838251	832340	104.895	1.095	4	62	838250	832341	105.15	0.6	15.8	16.2	0.1	8.3	16.2	29.2	-	-	8.3	3	27.5
ST-13 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838253	832337	104.895	1.095	4	62	838253	832337	105.15	0.6	18.5	18.8	0.3	10.8	18.8	30.4	-	-	10.8	3	23.8
ST-14 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838254	832337	104.895	1.095	4	62	838253	832337	105.15	0.6	19.1	19.5	0.2	9.1	19.5	30.8	-	-	9.1	3	25.1
ST-15 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838256	832334	104.895	1.095	4	62	838255	832333	105.15	0.6	22.2	22.4	0.4	11.3	22.4	32.0	-	-	11.3	3	21.7
ST-16 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838257	832333	104.895	1.095	4	62	838255	832333	105.15	0.6	22.8	23.2	0.2	9.7	23.2	32.3	-	-	9.7	3	23.0
ST-17 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838259	832330	104.895	1.095	4	62	838258	832330	105.15	0.6	26.2	26.4	0.4	11.7	26.4	33.4	-	-	11.7	3	19.9
ST-18 7/F	PLK Ting Ka Ping Millennium Primary School 7/F	General AC Outdoor Unit	838259	832329	104.895	1.095	4	62	838258	832330	105.15	0.6	26.9	27.2	0.2	10.1	27.2	33.7	-	-	10.1	3	21.2
																	Total Predicted Noise Level at NSR 1 (6/F)						42
																	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)	Barrier Correction							Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
JS1 & JS2 & JS3 & JS4	Japan Internation School R/F		838192	832389	99.5	4.3	2	97	-	-	-	-	-	26.4	-	-	26.4	36.4	-	-	-	3	63.4
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	33691	33302	101.65	0.6	39.3	39.7	0.2	9.0	39.7	36.9	-	-	9.0	4	20.1
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	33691	33302	101.65	0.6	39.8	40.2	0.1	8.5	40.2	37.1	-	-	8.5	5	21.5
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	33691	33302	105.15	0.6	39.3	39.6	0.2	9.3	39.6	36.9	-	-	9.3	3	18.8
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	33691	33302	105.15	0.6	39.8	40.2	0.2	8.9	40.2	37.0	-	-	8.9	3	19.1
																	Total Predicted Noise Level at NSR 1 (6/F)						63
																	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)	Barrier Correction							Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
JS1 & JS2 & JS3 & JS4	Japan Internation School R/F		838201	832380	99.5	4.3	2	97	-	-	-	-	-	30.3	-	-	30.3	37.6	-	-	-	3	62.2
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	33691	33302	101.65	0.6	35.8	36.0	0.4	11.2	36.0	36.1	-	-	11.2	4	18.7
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	33691	33302	101.65	0.6	36.0	36.4	0.2	9.3	36.4	36.2	-	-	9.3	5	21.5
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	33691	33302	105.15	0.6	38.2	38.6	0.2	9.4	38.6	36.7	-	-	9.4	3	18.9
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	33691	33302	105.15	0.6	38.7	39.1	0.2	8.9	39.1	36.8	-	-	8.9	3	19.3
																	Total Predicted Noise Level at NSR 1 (6/F)						62
																	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)	Barrier Correction								Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
JS1 & JS2 & JS3 & JS4	Japan Internation School R/F		838201	832380	99.5	4.3	2	97	-	-	-	-	-	39.3	-	-	39.3	39.9	-	-	-	3	60
																						Total Predicted Noise Level at NSR 1 (6/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 difference (m)	Directivity Factor (Q)	Estimated SWL dB(A)	Barrier Correction								Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	2.5	2	77.4	-	-	-	-	-	31.8	-	-	31.8	38.0	-	-	-	3	42.3
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	2.5	2	77.4	-	-	-	-	-	31.8	-	-	31.8	38.0	-	-	-	3	42.3
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	3.4	2	68.5	-	-	-	-	-	31.8	-	-	31.8	38.0	-	-	-	3	33.5
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	3.4	2	68.5	-	-	-	-	-	31.9	-	-	31.9	38.1	-	-	-	3	33.4
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832373	108	2.4	2	82.0	-	-	-	-	-	36.3	-	-	36.3	39.2	-	-	-	3	45.8
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838244	832375	108	2.4	2	82.0	-	-	-	-	-	36.8	-	-	36.8	39.3	-	-	-	3	45.7
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832375	108	2.4	2	82.0	-	-	-	-	-	38.4	-	-	38.4	39.7	-	-	-	3	45.3
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838247	832374	108	2.4	2	82.0	-	-	-	-	-	38.0	-	-	38.0	39.6	-	-	-	3	45.4
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838267	832390	108	2.8	2	88.0	-	-	-	-	-	65.0	-	-	65.0	44.2	-	-	-	3	46.8
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832393	108	2.8	2	88.0	-	-	-	-	-	64.0	-	-	64.0	44.1	-	-	-	3	46.9
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838265	832394	108	2.8	2	88.0	-	-	-	-	-	66.1	-	-	66.1	44.4	-	-	-	3	46.6
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832396	108	2.8	2	88.0	-	-	-	-	-	66.4	-	-	66.4	44.4	-	-	-	3	46.6
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838262	832395	108	2.8	2	88.0	-	-	-	-	-	64.5	-	-	64.5	44.2	-	-	-	3	46.8
JS-1 & JS-2 & JS-3 & JS-4	Japanese Internation School R/F		838192	832389	100	11.0	2	97	-	-	-	-	-	36.9	-	-	37	39	-	-	-	3	60.5
																	Total Predicted Noise Level at NSR 3 (8/F)						62
																	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)	Barrier Correction								Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
TY3-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832357	108	2.5	2	77.4	-	-	-	-	-	57.2	-	-	57.2	43.1	-	-	-	3	37.2
TY3-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832358	108	2.5	2	77.4	-	-	-	-	-	56.5	-	-	56.5	43.0	-	-	-	3	37.3
TY3-3	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838249	832359	108	2.5	2	77.4	-	-	-	-	-	55.9	-	-	55.9	42.9	-	-	-	3	37.4
TY3-4	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838248	832360	108	2.5	2	77.4	-	-	-	-	-	55.3	-	-	55.3	42.8	-	-	-	3	37.5
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	2.5	2	77.4	-	-	-	-	-	54.2	-	-	54.2	42.7	-	-	-	3	37.7
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	2.5	2	77.4	-	-	-	-	-	53.6	-	-	53.6	42.6	-	-	-	3	37.8
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	3.4	2	68.5	-	-	-	-	-	53.0	-	-	53.0	42.5	-	-	-	3	29.0
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	3.4	2	68.5	-	-	-	-	-	52.5	-	-	52.5	42.4	-	-	-	3	29.1
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832373	108	2.4	2	82.0	-	-	-	-	-	55.6	-	-	55.6	42.9	-	-	-	3	42.1
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838244	832375	108	2.4	2	82.0	-	-	-	-	-	55.1	-	-	55.1	42.8	-	-	-	3	42.2
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832375	108	2.4	2	82.0	-	-	-	-	-	56.8	-	-	56.8	43.1	-	-	-	3	41.9
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838247	832374	108	2.4	2	82.0	-	-	-	-	-	57.3	-	-	57.3	43.1	-	-	-	3	41.9
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838267	832390	108	2.8	2	88.0	-	-	-	-	-	77.8	-	-	77.8	45.8	-	-	-	3	45.2
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832393	108	2.8	2	88.0	-	-	-	-	-	75.5	-	-	75.5	45.5	-	-	-	3	45.5
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838265	832394	108	2.8	2	88.0	-	-	-	-	-	83.5	-	-	83.5	46.4	-	-	-	3	44.6
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832396	108	2.8	2	88.0	-	-	-	-	-	83.0	-	-	83.0	46.4	-	-	-	3	44.6
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838262	832395	108	2.8	2	88.0	-	-	-	-	-	81.1	-	-	81.1	46.2	-	-	-	3	44.8
JS-1 & JS-2 & JS-3 & JS-4	Japanese Internation School R/F		838192	832389	100	11.0	2	97	-	-	-	-	-	27.8	-	-	28	37	-	-	-	3	63.0
																	Total Predicted Noise Level at NSR 3 (8/F)						**63**
																	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)	Barrier Correction							Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
TY3-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832357	108	2.5	2	77.4	-	-	-	-	-	54.7	-	-	54.7	42.7	-	-	-	3	37.6
TY3-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832358	108	2.5	2	77.4	-	-	-	-	-	54.0	-	-	54.0	42.6	-	-	-	3	37.7
TY3-3	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838249	832359	108	2.5	2	77.4	-	-	-	-	-	53.5	-	-	53.5	42.5	-	-	-	3	37.8
TY3-4	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838248	832360	108	2.5	2	77.4	-	-	-	-	-	52.9	-	-	52.9	42.5	-	-	-	3	37.9
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	2.5	2	77.4	-	-	-	-	-	52.0	-	-	52.0	42.3	-	-	-	3	38.1
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	2.5	2	77.4	-	-	-	-	-	51.5	-	-	51.5	42.2	-	-	-	3	38.1
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	3.4	2	68.5	-	-	-	-	-	51.0	-	-	51.0	42.1	-	-	-	3	29.4
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	3.4	2	68.5	-	-	-	-	-	50.6	-	-	50.6	42.1	-	-	-	3	29.4
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832373	108	2.4	2	82.0	-	-	-	-	-	54.0	-	-	54.0	42.6	-	-	-	3	42.4
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838244	832375	108	2.4	2	82.0	-	-	-	-	-	53.6	-	-	53.6	42.6	-	-	-	3	42.4
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832375	108	2.4	2	82.0	-	-	-	-	-	55.2	-	-	55.2	42.8	-	-	-	3	42.2
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838247	832374	108	2.4	2	82.0	-	-	-	-	-	55.6	-	-	55.6	42.9	-	-	-	3	42.1
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838267	832390	108	2.8	2	88.0	-	-	-	-	-	82.2	-	-	82.2	46.3	-	-	-	3	44.7
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832393	108	2.8	2	88.0	-	-	-	-	-	80.3	-	-	80.3	46.1	-	-	-	3	44.9
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838265	832394	108	2.8	2	88.0	-	-	-	-	-	82.4	-	-	82.4	46.3	-	-	-	3	44.7
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832396	108	2.8	2	88.0	-	-	-	-	-	82.0	-	-	82.0	46.3	-	-	-	3	44.7
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838262	832395	108	2.8	2	88.0	-	-	-	-	-	80.0	-	-	80.0	46.0	-	-	-	3	45.0
JS-1 & JS-2 & JS-3 & JS-4	Japanese Internation School R/F		838192	832389	100	11.0	2	97	-	-	-	-	-	29.5	-	-	30	37	-	-	-	3	62.4
																	Total Predicted Noise Level at NSR 3 (8/F)						**63**
																	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)	Barrier Correction							Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
TY3-4	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838248	832360	108	5.5	2	77.4	-	-	-	-	-	24.4	-	-	24.4	35.7	-	-	-	3	44.6
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	5.5	2	77.4	-	-	-	-	-	24.0	-	-	24.0	35.6	-	-	-	3	44.8
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	5.5	2	77.4	-	-	-	-	-	23.9	-	-	23.9	35.6	-	-	-	3	44.8
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	6.4	2	68.5	-	-	-	-	-	24.1	-	-	24.1	35.6	-	-	-	3	35.9
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	6.4	2	68.5	-	-	-	-	-	24.1	-	-	24.1	35.6	-	-	-	3	35.9
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832373	108	5.4	2	82.0	-	-	-	-	-	28.5	-	-	28.5	37.1	-	-	-	3	47.9
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838244	832375	108	5.4	2	82.0	-	-	-	-	-	29.0	-	-	29.0	37.2	-	-	-	3	47.8
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832375	108	5.4	2	82.0	-	-	-	-	-	30.6	-	-	30.6	37.7	-	-	-	3	47.3
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838247	832374	108	5.4	2	82.0	-	-	-	-	-	30.1	-	-	30.1	37.6	-	-	-	3	47.4
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838267	832390	108	5.8	2	88.0	-	-	-	-	-	56.9	-	-	56.9	43.1	-	-	-	3	47.9
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832393	108	5.8	2	88.0	-	-	-	-	-	56.0	-	-	56.0	42.9	-	-	-	3	48.1
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838265	832394	108	5.8	2	88.0	-	-	-	-	-	58.0	-	-	58.0	43.3	-	-	-	3	47.7
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832396	108	5.8	2	88.0	-	-	-	-	-	58.4	-	-	58.4	43.3	-	-	-	3	47.7
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838262	832395	108	5.8	2	88.0	-	-	-	-	-	56.5	-	-	56.5	43.0	-	-	-	3	48.0
JS-1 & JS-2 & JS-3 & JS-4	Japanese Internation School R/F		838192	832389	100	14.0	2	97	-	-	-	-	-	38.3	-	-	38.3	39.6	-	-	-	3	60.2
																						Total Predicted Noise Level at NSR 4 (9/F)	62
																						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)	Barrier Correction								Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	5.5	2	77.4	-	-	-	-	-	28.5	-	-	28.5	37.1	-	-	-	3	43.3
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	5.5	2	77.4	-	-	-	-	-	28.5	-	-	28.5	37.1	-	-	-	3	43.3
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	6.4	2	68.5	-	-	-	-	-	28.6	-	-	28.6	37.1	-	-	-	3	34.4
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	6.4	2	68.5	-	-	-	-	-	28.7	-	-	28.7	37.1	-	-	-	3	34.4
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832373	108	5.4	2	82.0	-	-	-	-	-	33.0	-	-	33.0	38.3	-	-	-	3	46.7
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838244	832375	108	5.4	2	82.0	-	-	-	-	-	33.5	-	-	33.5	38.5	-	-	-	3	46.5
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832375	108	5.4	2	82.0	-	-	-	-	-	35.1	-	-	35.1	38.9	-	-	-	3	46.1
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838247	832374	108	5.4	2	82.0	-	-	-	-	-	34.6	-	-	34.6	38.8	-	-	-	3	46.2
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838267	832390	108	5.8	2	88.0	-	-	-	-	-	61.5	-	-	61.5	43.8	-	-	-	3	47.2
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832393	108	5.8	2	88.0	-	-	-	-	-	60.5	-	-	60.5	43.6	-	-	-	3	47.4
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838265	832394	108	5.8	2	88.0	-	-	-	-	-	62.6	-	-	62.6	43.9	-	-	-	3	47.1
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832396	108	5.8	2	88.0	-	-	-	-	-	62.9	-	-	62.9	44.0	-	-	-	3	47.0
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838262	832395	108	5.8	2	88.0	-	-	-	-	-	61.0	-	-	61.0	43.7	-	-	-	3	47.3
JS-1 & JS-2 & JS-3 & JS-4	Japanese Internation School R/F	-	838192	832389	100	14.0	2	97	-	-	-	-	-	37.8	-	-	37.8	39.5	-	-	-	3	60.3
																						Total Predicted Noise Level at NSR 4 (9/F)	62
																						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)	Barrier Correction								Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
TY3-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832357	108	5.5	2	77.4	-	-	-	-	-	54.9	-	-	54.9	42.8	-	-	-	3	37.6
TY3-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832358	108	5.5	2	77.4	-	-	-	-	-	54.2	-	-	54.2	42.7	-	-	-	3	37.7
TY3-3	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838249	832359	108	5.5	2	77.4	-	-	-	-	-	53.7	-	-	53.7	42.6	-	-	-	3	37.8
TY3-4	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838248	832360	108	5.5	2	77.4	-	-	-	-	-	53.1	-	-	53.1	42.5	-	-	-	3	37.9
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	5.5	2	77.4	-	-	-	-	-	52.3	-	-	52.3	42.3	-	-	-	3	38.0
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	5.5	2	77.4	-	-	-	-	-	51.7	-	-	51.7	42.3	-	-	-	3	38.1
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	6.4	2	68.5	-	-	-	-	-	51.2	-	-	51.2	42.2	-	-	-	3	29.3
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	6.4	2	68.5	-	-	-	-	-	50.9	-	-	50.9	42.1	-	-	-	3	29.4
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832373	108	5.4	2	82.0	-	-	-	-	-	54.2	-	-	54.2	42.7	-	-	-	3	42.3
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838244	832375	108	5.4	2	82.0	-	-	-	-	-	53.8	-	-	53.8	42.6	-	-	-	3	42.4
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832375	108	5.4	2	82.0	-	-	-	-	-	55.4	-	-	55.4	42.9	-	-	-	3	42.1
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838247	832374	108	5.4	2	82.0	-	-	-	-	-	55.8	-	-	55.8	42.9	-	-	-	3	42.1
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838267	832390	108	5.8	2	88.0	-	-	-	-	-	82.4	-	-	82.4	46.3	-	-	-	3	44.7
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832393	108	5.8	2	88.0	-	-	-	-	-	80.4	-	-	80.4	46.1	-	-	-	3	44.9
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838265	832394	108	5.8	2	88.0	-	-	-	-	-	82.5	-	-	82.5	46.3	-	-	-	3	44.7
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832396	108	5.8	2	88.0	-	-	-	-	-	82.1	-	-	82.1	46.3	-	-	-	3	44.7
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838262	832395	108	5.8	2	88.0	-	-	-	-	-	80.2	-	-	80.2	46.1	-	-	-	3	44.9
JS-1 & JS-2 & JS-3 & JS-4	Japanese Internation School R/F		838192	832389	100	14.0	2	97	-	-	-	-	-	30.8	-	-	31	38	-	-	-	3	62.1
																	Total Predicted Noise Level at NSR 3 (8/F)						**63**
																	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)	Barrier Correction								Shortest slang Distance from Source to NSRs, m	Correction					Corrected Daytime Noise Level, dB(A)
			X	Y	Z			Daytime & Evening time	Barrier (x)	Barrier (y)	Barrier (z)	slant distance from noise source to barrier (a)	slant distance from NSR to barrier (b)	slant distance from noise source to NSR (c)	Path difference (a+b-c)	Sound attenuation by Building edge		Distance	Screening Effect [3]	Tonality Effect	Barrier Effect [4]	Façade	
TY3-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832357	108	5.5	2	77.4	-	-	-	-	-	57.4	-	-	57.4	43.2	-	-	-	3	37.2
TY3-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838250	832358	108	5.5	2	77.4	-	-	-	-	-	56.7	-	-	56.7	43.1	-	-	-	3	37.3
TY3-3	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838249	832359	108	5.5	2	77.4	-	-	-	-	-	56.1	-	-	56.1	43.0	-	-	-	3	37.4
TY3-4	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838248	832360	108	5.5	2	77.4	-	-	-	-	-	55.5	-	-	55.5	42.9	-	-	-	3	37.5
TY3-5	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838247	832362	108	5.5	2	77.4	-	-	-	-	-	54.5	-	-	54.5	42.7	-	-	-	3	37.7
TY3-6	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838246	832364	108	5.5	2	77.4	-	-	-	-	-	53.9	-	-	53.9	42.6	-	-	-	3	37.8
TY4-1	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838245	832365	107	6.4	2	68.5	-	-	-	-	-	53.3	-	-	53.3	42.5	-	-	-	3	29.0
TY4-2	PLK Ting Ka Ping Millennium Primary School R/F	York VRF Outdoor Unit	838244	832366	107	6.4	2	68.5	-	-	-	-	-	52.8	-	-	52.8	42.4	-	-	-	3	29.1
TY5-1	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832373	108	5.4	2	82.0	-	-	-	-	-	55.8	-	-	55.8	42.9	-	-	-	3	42.1
TY5-2	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838244	832375	108	5.4	2	82.0	-	-	-	-	-	55.3	-	-	55.3	42.8	-	-	-	3	42.2
TY5-3	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838246	832375	108	5.4	2	82.0	-	-	-	-	-	57.0	-	-	57.0	43.1	-	-	-	3	41.9
TY5-4	PLK Ting Ka Ping Millennium Primary School R/F	Toshiba AC Outdoor Unit	838247	832374	108	5.4	2	82.0	-	-	-	-	-	57.5	-	-	57.5	43.2	-	-	-	3	41.8
TY6-1	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838267	832390	108	5.8	2	88.0	-	-	-	-	-	78.0	-	-	78.0	45.8	-	-	-	3	45.2
TY6-2	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832393	108	5.8	2	88.0	-	-	-	-	-	75.6	-	-	75.6	45.6	-	-	-	3	45.4
TY6-3	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838265	832394	108	5.8	2	88.0	-	-	-	-	-	83.7	-	-	83.7	46.4	-	-	-	3	44.6
TY6-4	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838263	832396	108	5.8	2	88.0	-	-	-	-	-	83.2	-	-	83.2	46.4	-	-	-	3	44.6
TY6-5	PLK Ting Ka Ping Millennium Primary School R/F	Media Outdoor Unit	838262	832395	108	5.8	2	88.0	-	-	-	-	-	81.2	-	-	81.2	46.2	-	-	-	3	44.8
JS-1 & JS-2 & JS-3 & JS-4	Japanese Internation School R/F		838192	832389	100	14.0	2	97	-	-	-	-	-	29.1	-	-	29	37	-	-	-	3	62.5
																	Total Predicted Noise Level at NSR 3 (8/F)						**63**
																	Criteria, ANL						**60**

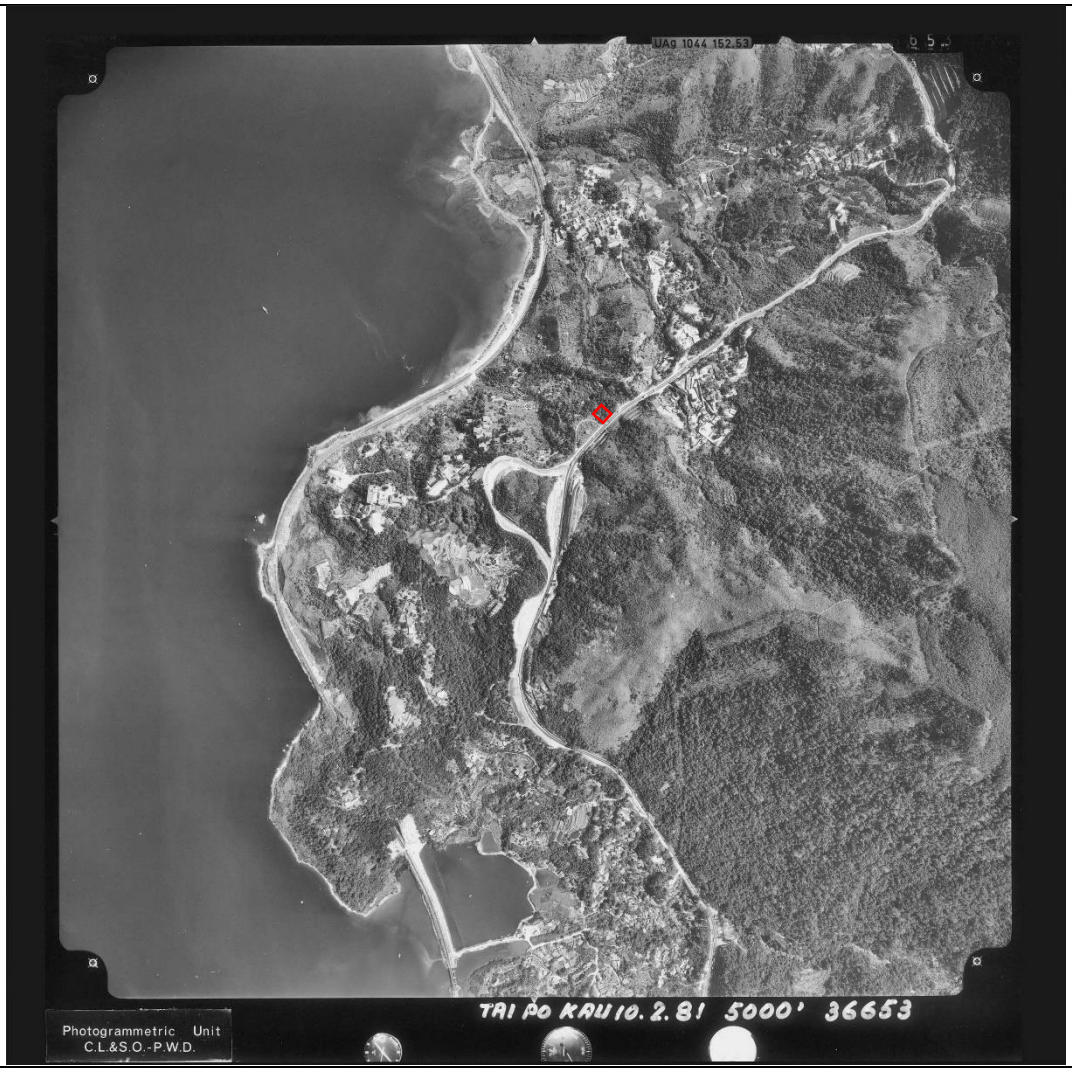
Appendix H

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.

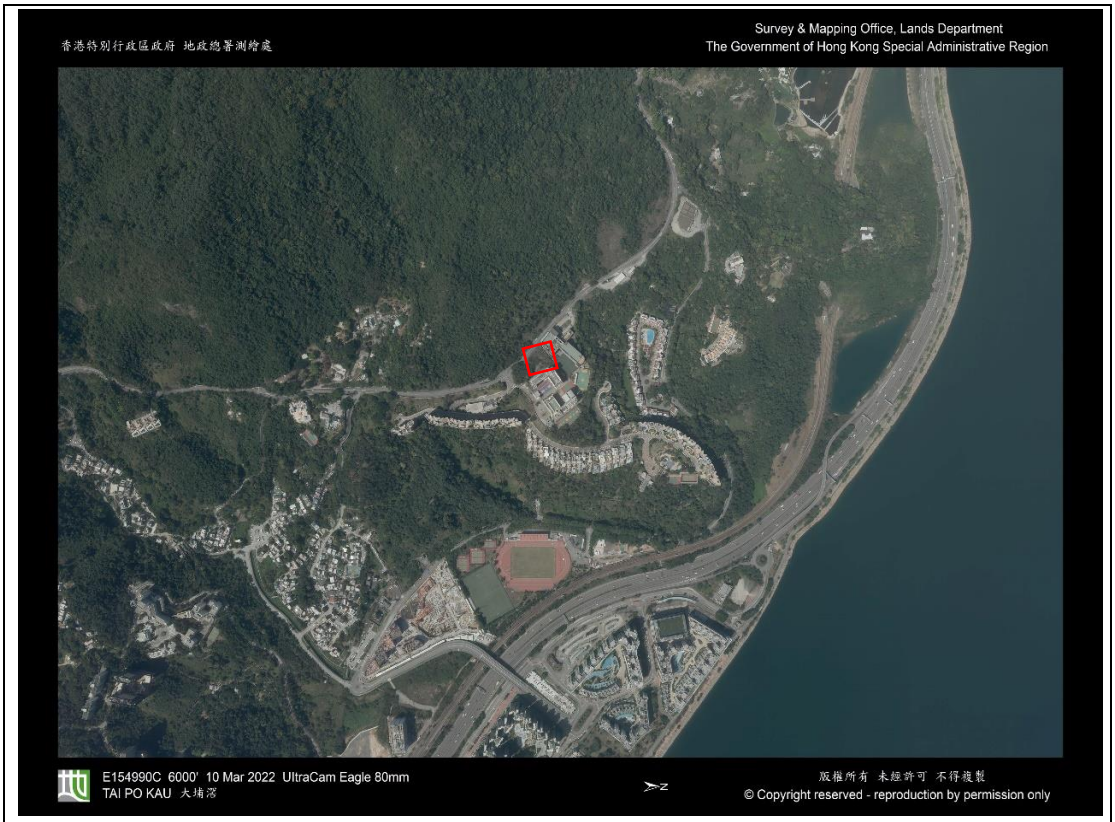
Year 1981


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

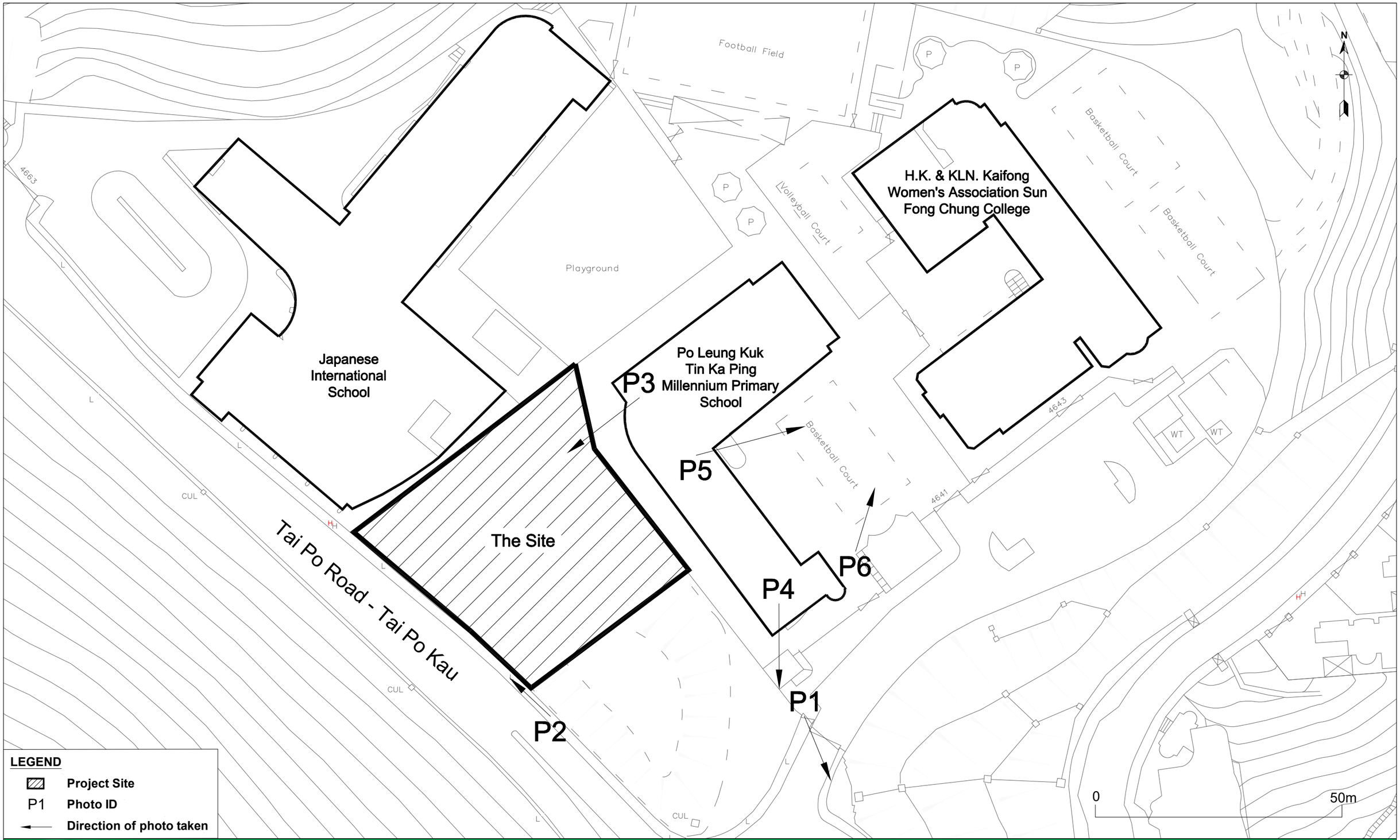
P4

P5

P6

Appendix J

Photo Index Plan



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

Appendix J

Rev. 0

Appendix K

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?

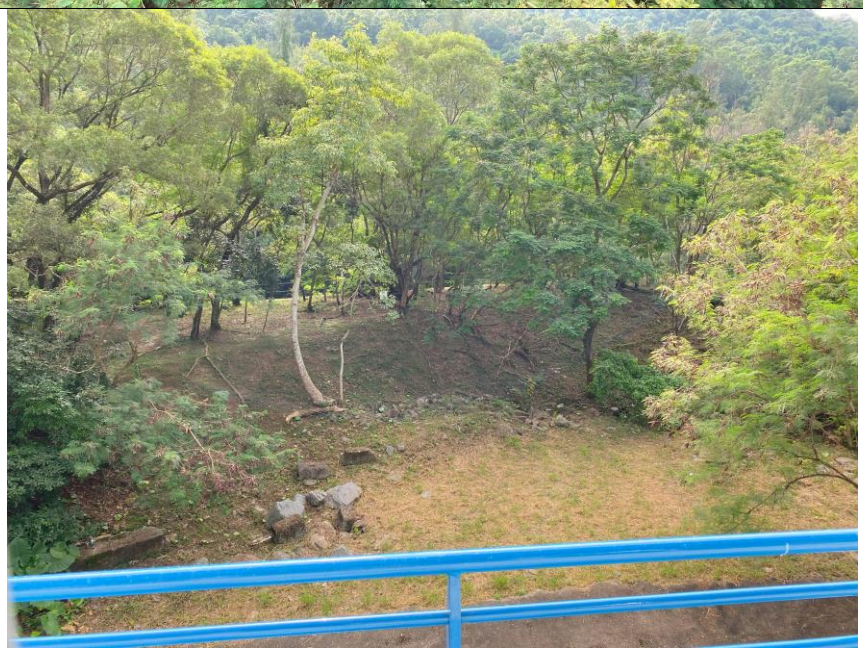
Tai Po Kau Natural Reserves

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