Appendix V

Noise Impact Assessment

Section 16 Renewal for Data Centre for a Period of 3 Years at 1 Wang Wo Tsai Street, Tsuen Wan

Noise Impact Assessment

Prepared for: Knight Frank

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Contents

1 Introduction 1
1.1 Background 1
1.2 Purpose 1
2 Site Location & Building Layout 2
2.1 Site Location 2
3 Noise Impact 3
3.1 Environmental Legislation and Standards 3
3.2 Noise Criteria for Fixed Noise Sources 3
3.3 Identification of NSRs 4
4 Fixed Noise Source Impact Assessment 6
4.1 Introduction 6
4.2 Identified Fixed Noise Sources 6
4.3 Noise Assessment Points for Fixed Noise Sources Assessment 10
4.4 Sound Power Levels Adopted in the Fixed Noise Sources Calculation 10
4.5 Assessment Methodology 13
4.6 Assessment Result 14
5 Conclusion 16

Tables

Table 3.1 Area Sensitivity Ratings (ASRs) 3
Table 3.2 Acceptable Noise Levels (ANLs) 4
Table 3.3 Identified Noise Sensitive Receivers (NSRs) 4
Table 3.4 Acceptable Noise Level 5
Table 4.1: Potential Fixed Noise Source List 6
Table 4.2 Operating Scenario of Chillers 8
Table 4.3: Maximum Design Noise Level at 1m from Chiller 9
Table 4.4 Treatment Performance Requirements 10
Table 4.5: Sound Power Level of Identified Fixed Noise Sources 11
Table 4.6 Highest Predicted Noise Level at Each NSR 14

Appendix

Appendix A Reference Report and Typical Drawing of Treatments

Appendix B Lime Spark Layout

Appendix C Sample Calculation for Fixed Noise Impact Assessment of Acosutic Fins

Appendix D Predicted Fixed Noise Source Impac

Figures

Figure 2.1 Site Boundary of the Project

Figure 3.1 Location of Fixed Noise Sources and Noise Sensitive Receivers

Figure 3.2 Roof Top Layout of Data Center

Figure 4.1 Location of the Acousitic Fins

List of Abbreviations

Abbreviation	Definition
ANL	Acceptable Noise Level
ASR	Area Sensitivity Rating
HKPSG	Hong Kong Planning Standards & Guidelines
IFs	Influencing Factors
IND-TM	Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites
ITTI	Information Technology and Telecommunication Industries
NAP	Noise Assessment Point
NCO	Noise Control Ordinance
NIA	Noise Impact Assessment
NSR	Noise Sensitive Receiver
PNL	Predicted Noise Level
SWL	Sound Power Level
SPL	Sound Pressure Level
TM	Technical Memorandum

1 Introduction

1.1 Background

1.1.1 SJ Consultants Hong Kong Limited ("SJ") was commissioned to conduct a Noise Impact Assessment ("NIA") for the existing data centre located at 1 Wang Wo Tsai Street, Tsuen Wan. The Project involves the renewal of planning approval for the continued operation of the existing data centre and incorporate enhancement works delivering noise control improvements of the existing data centre located at 1 Wang Wo Tsai Street, Tsuen Wan. The proposed enhancement works mainly comprise the replacement and upgrading of ageing building services and mechanical equipment to support the operation of the data centre, including rooftop chillers and associated cooling and ventilation equipment. New equipment with improved acoustic design and enhanced noise control measures will be installed as part of the enhancement works.

1.1.2 Since the approval of the previous planning applications, Equinix (the "Applicant") has implemented, and committed to, further noise improvement measures, including the replacement of key rooftop plant and the provision of additional noise mitigation measures. These enhanced noise control measures are incorporated into the current Section 16 Planning Application renewal.

1.2 Purpose

1.2.1 The Section 16 application is to seek the Town Planning Board's approval to continue to use the application premises for temporary information technology and telecommunication industries ("ITTI") (data centre) for a period of 3 years.

1.2.2 The Premises is the subject of five approved planning applications (Nos. A/TW/454, A/TW/465, A/TW/493, A/TW/520 and A/TW/540) submitted by the same applicant for the same temporary ITTI (data centre) use. The latest application (No. A/TW/540) was the renewal of application No. A/TW/520 and was approved with conditions by the Metro Planning Committee ("the Committee") on 12/1/2024 for a period of 3 years.

1.2.3 As the operation of the existing data centre may generate fixed noise emissions, a noise impact assessment has been undertaken to evaluate the potential impacts on nearby noise sensitive receivers ("NSRs") and support the Planning Application for the development.

1.2.4 This report has been prepared based on the findings and information presented in the Acoustics Report for the Chiller Upgrade and Improvement Works provided by the Client.

1.2.5 The assessment has been conducted in accordance with the relevant requirements of Noise Control Ordinance ("NCO") and Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites ("IND – TM"). The introduction of criteria, identification of potential fixed noise source and NSR, the calculation results and a conclusion to the noise impact assessment would be presented in this report.

2 Site Location & Building Layout

2.1 Site Location

2.1.1 The Site is situated at the northwestern fringe of the Tsuen Wan East Industrial Area. It comprises a seven-storey godown building at 1 Wang Wo Tsai Street. The Site location and its surrounding environment are shown in ***Figure 2.1***. The immediate surroundings of the Site are described as follows:

- To the north: Fortune Commercial Building;
- To the southeast: Comprehensive residential development with a child care centre namely Lime Spark; an industrial building namely Bonsun Industrial Building, and a commercial building namely Tetra;
- To the south: An industrial building namely Wing Kwai Factory Building;
- To the southwest across Kwu Hang Road: Transitional Housing namely Tsuen Fook Kui;
- To the west across Luen Yan Street: Residential development namely Bo Shek Mansion.

3 Noise Impact

3.1 Environmental Legislation and Standards

Noise Control Ordinance (Cap.400)

3.1.1 The main piece of legislation controlling environmental noise nuisance is the Noise Control Ordinance ("NCO"). The NCO enables regulations and Technical Memoranda ("TMs") to be made, which introduce detailed control criteria, measurement procedures and other technical matters.

3.2 Noise Criteria for Fixed Noise Sources

Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites

3.2.1 Fixed noise during the site operation is governed under "Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites" ("IND – TM"). The criterion is determined based on the statutory Acceptable Noise Levels ("ANL") stipulated in Table 2 of IND – TM. It stipulated the day, evening and nighttime ANL for Noise Sensitive Receiver ("NSR") according to its corresponding Area Sensitivity Rating ("ASR"), which is determined by Influencing Factors ("IFs") in accordance with the IND-TM.

Appropriate ASR shall be properly determined in accordance with Table 1 of IND-TM. Any NSR shall, irrespective of Table 1, be assigned an ASR of "C" if it is within 100m of a zone designated as "Industrial" or "Industrial Estate" on a statutory Outline Zoning Plan, or an ASR of "B" if it is between 100m and 250m from such a zone, except in case where Table indicates an ASR of "C". The ASR are summarised in ***Table 3.1.*** The ANL are summarised in ***Table 3.2.***

Table 3.1 Area Sensitivity Ratings (ASRs)

Type of Area Containing NSR	Degree to which NSR is affected by IF		
	Not Affected	Indirectly Affected	Directly Affected
(i) Rural area, including country parks or village type developments	A	B	B
(ii) Low density residential area consisting of low-rise or isolated high-rise developments	A	B	C
(iii) Urban Area	B	C	C
(iv) Area other than those above	B	B	C

Notes:

1. "country park" means an area that is designed as a country park pursuant to Section 14 of the *Country Parks Ordinance;*
2. "directly affected" means that the NSR is at such a location that noise generated by the IF is readily noticeable at the NSR and is a dominant feature of the noise climate of the NSR;
3. "indirectly affected" means that the NSR is at such a location that noise generated by the IF, whilst noticeable at the NSR, is not a dominant feature of the noise climate of the NSR;
4. "not affected" means that the NSR is at such a location that noise generated by the IF is not noticeable at the NSR;
5. "urban area" means an area of high density, diverse development including a mixture of such elements as industrial activities, major trade or commercial activities and residential premises.

Table 3.2 Acceptable Noise Levels (ANLs)

TIME PERIOD	ASR		
	A	B	C
Day & Evening (07:00 to 23:00)	60	65	70
Night (23:00 to 07:00)	50	55	60

Hong Kong Planning Standards & Guidelines ("HKPSG")

3.2.2 The HKPSG Chapter 9 also states that in order to plan for a better environment, all planned fixed noise sources should be so located and designed that when assessed in accordance with the TM, the level of the intruding noise at the façade of the nearest sensitive use should be at least 5dB(A) below the appropriate ANL shown in Table 2 of the IND – TM or, in the case of the background being 5dB(A) lower than the ANL, should not be higher than the background.

3.2.3 During the site visit conducted on 13 August 2026, construction of the residential development located southeast of the Site was ongoing. As a result, representative background noise levels at the nearby NSRs could not be measured. Therefore, the criterion of ANL minus 5 dB(A) has been adopted for the assessment of noise from fixed noise sources.

3.3 Identification of NSRs

3.3.1 Representative NSRs within 300m from boundary of the Site were identified based on site visit and desktop review. The ASR of NSR is determined based on the perceived usage of the study area and presence of any influencing factors such as major roads, industrial area and airports. The Project Site area is considered as urban area. NSR 1 to 13 is considered as ASR of "C" since it is directly or indirectly affected by the industrial establishments along Sha Tsui Road and Wang Wo Tsai Street. The locations and sensitive uses of these NSRs are shown on ***Figure 3.1*** and summarised in ***Table 3.3.***

Table 3.3 Identified Noise Sensitive Receivers (NSRs)

NSR	Description	No. of Storeys	Land Use	ASR	Approx. Shortest Distance to Site Boundary (m)
NSR 1	Indi Home	50	Residential	C	122.2
NSR 2	H Cube	40	Residential	C	135.3
NSR 3	Tsuen Fook Kui	4	Residential	C	23.8
NSR 4	18 Luen Yan Street	5	Residential	C	58.9
NSR 5	Bo Shek Mansion Block 3	4	Residential	C	38.1
NSR 6	Bo Shek Mansion Block 2	26	Residential	C	42.8
NSR 7	Tak Yan Building Stage 2	6	Residential	C	68.0
NSR 8	Kwong Fat Building	6	Residential	C	57.8
NSR 9	New Haven	36	Residential	C	70.6
NSR 10	Child Care Centre - Lime Spark	1	Institutional	C	13.6
NSR 11	Planning Residential building - Lime Spark	34	Residential	C	22.7

NSR	Description	No. of Storeys	Land Use	ASR	Approx. Shortest Distance to Site Boundary (m)
NSR 12	Planning Residential building - Lime Spark	34	Residential	C	33.7
NSR 13	Planning Residential building - Lime Spark	34	Residential	C	48.0

3.3.2 According to the Table 2 of the IND-TM and HKPSG Chapter 9, the acceptable noise level equals to the ANLs listed in the ***Table 3.2*** subtracted by 5dB(A). The acceptable noise level related to a "C" ASR for both day and nighttime are shown in ***Table 3.4***.

Table 3.4 Acceptable Noise Level

Time Period	ANL-5 for "C" ASR, dB(A)
Day & Evening (07:00 to 23:00)	65
Night (23:00 to 07:00)	55

Note:

In any event, the ASR and the ANL adopted in this report are indicative and they are only used for this Noise Impact Assessment ("NIA") only. Noise from fixed noise sources is controlled under the NCO. Therefore, the Noise Control Authority shall determine the noise impact on the basis of prevailing legislation and practices being in force, and taking into account of contemporary conditions / situation of adjoining land uses.

4 Fixed Noise Source Impact Assessment

4.1 Introduction

4.1.1 This fixed noise source impact assessment has been prepared to assess noise impact of the Site to the nearby NSRs and recommended mitigation measures to the noise impact when necessary.

4.2 Identified Fixed Noise Sources

4.2.1 The study area for the fixed noise impact assessment extends 300 m from the Site boundary. Potential fixed noise sources were identified through site surveys and a desktop review. The Environmental Assessment Report prepared under Town Planning Application No. A/TW/527, which was approved with conditions in December 2021, has been reviewed and adopted as reference material for this NIA.

4.2.2 Fixed noise sources in the vicinity of the Site are primarily associated with rooftop chillers and outdoor mechanical plant, including air-conditioning units and exhaust fans. A site survey was conducted on 13 August 2026 to verify the existing conditions surrounding the Project Site. Upgrading and enhancement works for the existing rooftop chillers at the Project Site are currently underway and are scheduled for completion by end of April 2027. The upgraded rooftop chiller system, together with the proposed noise mitigation measures, is expected to achieve improved noise performance and lower operational noise levels than the existing installation. The identified fixed noise sources are summarised in ***Table 4.1***. The locations of identified noise sources are shown in ***Figure 3.1***.

Table 4.1: Potential Fixed Noise Source List

Fixed-Noise Sources ID	Description	Elevation (mPD)	Identified Noise Source	Time Period that Noise Impact is Expected	
				Day Time (7am-11pm)	Night Time (11pm-7am)
C1	Ever Gain Building	70.4	Air-cooled chiller on the roof	yes	no
C2	ADP Pentagon Centre	41.7	Water cooling tower on the roof	yes	no
C3	ADP Pentagon Centre	41.7	Water cooling tower on the roof	yes	no
C4	Symphone Industrial Building	97.9	Water cooling tower on the roof	yes	no
C5	Young Ya Industrial Building	11.3	Condensing units on 1/F podium	yes	no
C6	Bonjour Tower	56.2	Cooling tower on the roof	yes	no
C7	Po Yip Building	66.9	Water cooling tower on the roof (3 small)	yes[4]	yes[4]
	Po Yip Building	66.9	Water cooling tower on the roof (1 medium)	yes[4]	yes[4]
C8	Po Yip Building	Same as nearest façade to NSR[1]	Exhaust fans (3 medium)	yes[4]	yes[4]
	Po Yip Building	Same as nearest façade to NSR[1]	Exhaust fans (30 small)	yes[4]	yes[4]
	Po Yip Building	Same as nearest façade to NSR[1]	Air conditioners (142 nos.)	yes[4]	yes[4]
C9a	Young Ya Industrial Building	Same as nearest façade to NSR[1]	Exhaust fans at building façade (3 medium)	yes	no
C9b	Young Ya Industrial Building	Same as nearest façade to NSR[1]	Exhaust fans at building façade (20 small)	yes	no
C9c	Young Ya Industrial Building	Same as nearest façade to NSR[1]	Air conditioners (77 nos.)	yes	no

Fixed-Noise Sources ID	Description	Elevation (mPD)	Identified Noise Source	Time Period that Noise Impact is Expected	
				Day Time (7am-11pm)	Night Time (11pm-7am)
C10a	Hing Yip Centre	Same as nearest façade to NSR[1]	Exhaust fans at building façade (4 small)	yes	no
C10b	Hing Yip Centre	Same as nearest façade to NSR[1]	Air conditioners (22 nos.)	Yes	no
C11a	Saving Logistic Centre	Same as nearest façade to NSR[1]	Exhaust fans at building façade (9 small)	yes	no
C11b	Saving Logistic Centre	Same as nearest façade to NSR[1]	Air conditioners (22 nos.)	yes	no
C12a	Sunwise Industrial Building	10.8	Exhaust fans at building façade (8 medium)	no	no
C12b	Sunwise Industrial Building	13.8	Exhaust fans at building façade (8 small)	no	no
C12c	Sunwise Industrial Building	Same as nearest façade to NSR[1]	Air conditioners (120 nos.)	no	no
C14	Yik Yuen Car Services Center	6.6	Car repair Workshop[2]	yes	no
C15	Sun Kow Kee	6.6	Car and Electrical Appliances Repair Workshop[2]	yes	no
C16	Newage Motor Service	6.6	Car Repair Workshop[2]	yes	no
C17a	1 Wang Wo Tsai Street	6.6	Emergency Generator	no	no
C17b	1 Wang Wo Tsai Street	6.6	Emergency Generator	no	no
C18a	1 Wang Wo Tsai Street	10.8	10 split-type AC outdoor units	yes	yes
C18b	1 Wang Wo Tsai Street	10.8	10 split-type AC outdoor units	yes	yes
C18c	1 Wang Wo Tsai Street	10.8	10 split-type AC outdoor units	yes	yes
C18d	1 Wang Wo Tsai Street	10.8	10 split-type AC outdoor units	yes	yes
C18e	1 Wang Wo Tsai Street	10.8	10 split-type AC outdoor units	yes	yes
C18f	1 Wang Wo Tsai Street	10.8	10 split-type AC outdoor units	yes	yes
C18g	1 Wang Wo Tsai Street	10.8	10 split-type AC outdoor units	yes	yes
C18h	1 Wang Wo Tsai Street	10.8	10 split-type AC outdoor units	yes	yes
C18i	1 Wang Wo Tsai Street	10.8	10 split-type AC outdoor units	yes	yes
C18j	1 Wang Wo Tsai Street	10.8	10 split-type AC outdoor units	yes	yes
C19a	1 Wang Wo Tsai Street	9.5	4 split-type AC outdoor units	yes	yes
C19b	1 Wang Wo Tsai Street	9.5	4 split-type AC outdoor units	yes	yes
C19c	1 Wang Wo Tsai Street	9.5	4 split-type AC outdoor units	yes	yes
C19d	1 Wang Wo Tsai Street	9.5	4 split-type AC outdoor units	yes	yes
C20	1 Wang Wo Tsai Street	9.5	2 exhaust fans	yes	yes
C21	Bonsun Industrial Building	Same as nearest façade to NSR[1]	Air conditioners (17 nos.)	yes	no
Chiller Located on the Roof of the Project Site					
CH-01	1 Wang Wo Tsai Street	52.8	Chiller on the roof	yes/yes/yes[3]	yes
CH-02	1 Wang Wo Tsai Street	52.8	Chiller on the roof	no/no/no[3]	no
CH-03	1 Wang Wo Tsai Street	52.8	Chiller on the roof	yes/yes/yes[3]	yes
CH-04	1 Wang Wo Tsai Street	52.8	Chiller on the roof	no/no/no[3]	no
CH-05	1 Wang Wo Tsai Street	52.8	Chiller on the roof	yes/no/yes[3]	yes

Fixed-Noise Sources ID	Description	Elevation (mPD)	Identified Noise Source	Time Period that Noise Impact is Expected	
				Day Time (7am-11pm)	Night Time (11pm-7am)
CH-06	1 Wang Wo Tsai Street	52.8	Chiller on the roof	yes/yes/yes[3]	yes
CH-07	1 Wang Wo Tsai Street	52.8	Chiller on the roof	yes/yes/yes[3]	yes
CH-08	1 Wang Wo Tsai Street	52.8	Chiller on the roof	no/yes/no[3]	no
CH-09	1 Wang Wo Tsai Street	52.8	Chiller on the roof	no/yes/yes[3]	yes
CH-010	1 Wang Wo Tsai Street	52.8	Chiller on the roof	yes/yes/yes[3]	yes
CH-011	1 Wang Wo Tsai Street	52.8	Chiller on the roof	no/no/no[3]	no
CH-012	1 Wang Wo Tsai Street	52.8	Chiller on the roof	yes/no/no[3]	no

Notes:

1. The fixed noise sources consist of air-conditioning units and ventilation fans mounted on the external building façades. For assessment purposes, these sources are treated as a single source group. The source elevation adopted in the noise impact assessment corresponds to the elevation of the building façade nearest to the concerned NSR.

2. The fixed noise sources include several ground-floor industrial and commercial units. Noise emissions from these sources would generally be subject to screening effects arising from intervening buildings and structures, which have been considered in the assessment.

3. The time period that noise impact is expected of the chiller located on the roof of the Project Site are designed to operate under three alternative daytime operating modes as introduced in the section 4.2.3. Table 4.2 represents the proposed operation. Separate fixed noise assessments have been conducted for each operating mode to evaluate the corresponding noise levels at the identified NSRs.

4. The operating hours of Po Yip Building are not available. Therefore, for the purpose of this assessment, a conservative worst-case assumption has been adopted whereby the identified noise sources are assumed to operate 24 hours per day.

4.2.3 Noise Sources CH-01 to CH-012 represent the chillers installed on the rooftop of the data centre. These chillers may operate under three alternative daytime operating modes. CH-02, CH-04 and CH-011 are not expected to operate, while CH-08 will operate during daytime only. The corresponding operating conditions for each mode are summarised in ***Table 4.2***. The operating modes are based on an acoustic assessment report that evaluated the noise emissions associated with the rooftop chillers of the data centre.

Table 4.2 Operating Scenario of Chillers

SCENARIO	CHILLER IN OPERATION	TIME PERIOD
Daytime 1	CH-01, CH-03, CH-05, CH-06, CH-07, CH-010, CH-012 (Access Panels Closed)	Daytime
Daytime 2	CH-01, CH-03, CH-06, CH-07, CH-08, CH-09, CH-010 (Access Panels Closed)	Daytime
Daytime 3	CH-01, CH-03, CH-05, CH-06, CH-07, CH-09, CH-010 (Access Panels Opened)	Daytime
Nighttime 1	CH-01, CH-03, CH-05, CH-06, CH-07, CH-09, CH-010 (Access Panels Closed)	Nighttime

Note:

1. For Daytime 3 scenario, only the access panels located between the chillers will be opened during operation, while the access panels on the side facing the nearby residential development will remain closed. It is therefore assumed that the required noise performance level at a distance of 1 m from the chillers will continue to comply with the specified acoustic performance requirement. Accordingly, the same source term has been adopted for the noise impact calculations.

4.2.4 An acoustic assessment has been undertaken to establish the design noise performance of the upgraded chillers incorporating the proposed noise mitigation measures. The maximum design noise levels, specified at a distance of 1 m from the chillers are presented in ***Table 4.3*** and have been adopted in this NIA. To minimise noise emissions from the upgraded chillers, the following acoustic mitigation measures are proposed:

- 1200 mm long silencer with transition duct at chiller discharge side;
- 900 mm long silencer with transition duct at chiller discharge;
- 600 mm long silencer at both chiller intake sides;
- 200 mm thick acoustic louvre at upper area of chiller intake side and beneath the chiller; and
- 50 mm thick acoustic panel installed on both chiller casing sides and the bottom of the chiller, or alternatively at the lower intake areas.

4.2.5 The minimum noise attenuation performance of the proposed acoustic treatments shall comply with the requirements specified in ***Table 4.4.***

Table 4.3 Maximum Design Noise Level at 1m from Chiller

Chiller	Side	Maximum noise level at 1m, dB(A)
CH-01 and CH-03	Discharge	69
	Intake	71
CH-05 & 07	Discharge	67
	Intake	69
CH-06	Discharge	69
	Intake	74
CH-08	Discharge	82
	Intake	81
CH-09	Discharge	80
CH-010	Discharge	67
	Intake	81
CH-012	Discharge	69

Table 4.4 Treatment Performance Requirements

Treatment	Parameter	1/1 octave band centre frequencies, Hz								Loss coefficient, K
		63	125	250	500	1k	2k	4k	8k	
1200mm discharge silencer	Insertion loss, dB	4	9	18	21	28	19	14	10	1.4
900mm discharge silencer	Insertion loss, dB	3	4	8	10	13	17	14	12	8.4
600mm intake silencer	Insertion loss, dB	3	6	13	17	18	16	12	9	3
200mm intake acoustic louvre	Transmission loss, dB	3	4	8	10	13	17	14	12	8.4
50mm acoustic panel	Transmission loss, dB	15	18	21	29	38	46	51	58	-

4.2.6 The typical drawing of treatments is presented in ***Appendix A***.

4.3 Noise Assessment Points for Fixed Noise Sources Assessment

4.3.1 The assessment points for the noise impact assessment have been identified based on the first-tier NSRs located within the 300 m measured from the Project Site boundary. The assessment area is shown in ***Figure 3.1***.

4.3.2 A residential development under construction known as Lime Spark, located at 21 Wang Wo Tsai Street, has been identified as a NSR. Based on the proposed development layout, four representative assessment points which include three residential building points and a child care centre point have been selected to assess the potential noise impacts on the planned development. The building layout plan of Lime Spark is provided in ***Appendix B***.

4.3.3 For each building identified as a NSR, representative Noise Assessment Points ("NAP") have been assigned on each relevant floors to evaluate the potential noise impacts at different receiver elevations.

4.4 Sound Power Levels Adopted in the Fixed Noise Sources Calculation

4.4.1 On-site noise measurements were conducted as part of the Environmental Assessment Report under Town Planning Application No. A/TW/527 to identify and investigate existing fixed noise sources. The measured Sound Pressure Levels ("SPL") were subsequently converted into estimated Sound Power Levels ("SWL") based on established acoustic principles. The estimated SWL of the identified existing noise sources have been adopted for this assessment.

4.4.2 Site surveys were conducted on 13 August 2026. Based on the survey findings, several fixed noise sources were not in operation at the time of the site visit. To adopt a conservative assessment approach, these identified fixed noise sources have nevertheless been included in this NIA. The estimated Sound Power Levels ("SWL") adopted in the previously approved Environmental Assessment Report have been applied in this assessment.

4.4.3 In addition, certain fixed noise sources identified in the previous assessment were found to have been removed and were no longer present during the recent site survey. These noise sources have therefore not been considered in this assessment.

4.4.4 The SWL of the fixed noise sources adopted in the assessment are summarised in ***Table 4.5.***

Table 4.5: Sound Power Level of Identified Fixed Noise Sources

Fixed-Noise Sources ID	SWL, dB(A)
C1	100.8[1]
C2	89.9[1]
C3	92.7[1]
C4	92.9[1]
C5	96.9[1]
C6	111.7[1, 2]
C7	86.9[1, 2]
C7	95.7[1, 2]
C8	90.8[1]
C8	96.8[1]
C8	87.5[1]
C9a	90.8[1]
C9b	95.0[1]
C9c	84.9[1]
C10a	88.0[1]
C10b	77.8[1]
C11a	91.5[1]
C11b	79.4[1]
C12a	95.0[1]
C12b	91.0[1]
C12c	86.8[1]
C14	94.7[1]
C15	94.7[1]
C16	94.7[1]
C17a	100.0[1]
C17b	100.0[1]
C18a	76.4[1]
C18b	76.4[1]
C18c	76.4[1]
C18d	76.4[1]
C18e	76.4[11]

Fixed-Noise Sources ID	SWL, dB(A)
C18f	76.4[1]
C18g	76.4[1]
C18h	76.4[1]
C18i	76.4[1]
C18j	76.4[1]
C19a	76.4[1]
C19b	76.4[1]
C19c	76.4[1]
C19d	76.4[1]
C20	68.3[1]
C21	78.3[1]
CH-01	79[3]
CH-03	79[3]
CH-05	77[3]
CH-06	82[3]
CH-07	77[3]
CH-08	90[3]
CH-09	88[3]
CH-10	89[3]
CH-12	77[3]

Notes:

1. The SWL of C1 to C21 refers to the Appendix 4.6 of Environmental Assessment Report under Town Planning Application No. A/TW/527. As marked in the reference report, corrections for tonality, impulsiveness and intermittency have been included in the estimated sound power levels of the noise sources, where applicable, in accordance with the IND-TM, hence those corrections will not be double counted in the following calculation.
2. The sound power level assigned to source C7 corresponds to the sound power level of one cooling tower unit.
3. The SWL of CH-01 to CH-12 were derived from the required noise performance criteria specified in the Acoustics Report for the Chiller Upgrade and Improvement Works of the Project Site. The report stipulates that the SPL generated by each chiller shall not exceed the specified design criterion at a distance of 1 m from the equipment. The corresponding SPL values were converted to SWL based on hemispherical sound propagation using the following formula: $SWL = SPL + 10\log(2\pi r^2)$. As indicated in the reference report, and in accordance with the IND-TM, a 3 dB(A) tonality correction has been applied to the noise calculations for CH1-1 to CH01-12 as a conservative assumption.

4.5 Assessment Methodology

4.5.1 The noise impact from identified fixed noise source was determined based on standard acoustic principle and practice, which follows the formular as follows:

$$PNL = SWL + C_{dist} + C_{fac} + C_{barr} + C_{char} + C_{freq}$$

Where

- PNL is the predicted noise level at NSRs, dB(A)
- SWL is the sound power level of the noise source, dB(A)
- C_{dist} is the distance attenuation correction, equation: $-20log10(D) - 8$ in dB(A) where D is the slant distance between noise source and receiver.
- C_{fac} is the façade correction, +3dB(A) applied for identified NAP
- C_{barr} is the barrier correction, applied based on the assumption of −10 dB(A) where the direct line of sight between the noise source and the NAP is completely obstructed. This represents a conservative assumption and is consistent with the methodology set out in the Technical Memorandum on Noise from Construction Work other than Percussive Piling. In this NIA, the barrier correction has been applied where the representative NSR is screened from the noise source by existing building structures, except for NSRs 10 to 13, for which the barrier correction has been determined as discussed in ***Appendix C.***
- C_{char} is the correction for noise source characteristic including tonality, impulsiveness and intermittency according to the requirements listed in the IND-TM
- C_{freq} is the correction for operation duration of the noise sources, i.e. the maximum operating duration within any 30-minute period. For this assessment, the correction has been conservatively assumed to be 0 dB(A).

4.5.2 According to the Environmental Assessment Report prepared under Town Planning Application No. A/TW/527, acoustic fins are proposed to be installed on the façade of the planned residential development, Lime Spark facing the Project Site. The locations of the proposed acoustic fins are shown in ***Figure 4.1***. The acoustic fins, with lengths ranging from 1.5 m to 3 m, are designed to face the Project Site to mitigate noise impacts arising from the operation of the Project. The noise attenuation effect provided by the acoustic fins has been evaluated in accordance with ISO 9613-2: Acoustics – Attenuation of Sound During Propagation Outdoors and has been incorporated into this NIA.

$$C_{barr} = -10log_{10}[1 + (2 + (\frac{20}{\lambda})z]$$

Where

λ is the wavelength of sound in metres

z is the path difference of diffracted and direct sound in metres

4.5.3 It takes account of the geometry of the noise source, receiver and screening structure. The C_{barr} of acoustics fins can be affected by the location of both noise source and receivers and the length of fins. An example for detailed calculation process is introduced in ***Appendix C***.

4.5.4 As indicated in ***Table 4.1***, a worst-case assessment approach has been adopted whereby the elevations of the identified noise sources are adjusted to match the elevations of the corresponding NSR. Consequently, the minimum separation between the noise source and receiver is assumed in the assessment.

4.5.5 For NSRs located below the rooftop elevation of the building containing the point source, the elevation of the point source is assumed to be the same as that of the NSR. For NSRs located above the rooftop elevation of the buildings containing the point source, the elevation of the point source is fixed at the rooftop level of the building.

4.6 Assessment Result

4.6.1 The noise levels at the identified NSRs arising from the fixed noise sources within the assessment area have been calculated. As discussed in ***Section 4.2.1***, the rooftop chillers at the Project Site are designed to operate under different operating scenarios, Daytime 1 to 3 Scenarios and Nighttime 1 Scenario. Separate noise calculations have been undertaken for each operating scenario. The detailed calculation results are presented in ***Appendix D***. A summary table illustrating the chiller arrangements under each operating scenario has also been included for reference.

4.6.2 Based on the assessment results, no noise criterion exceedance is predicted at any of the identified NSRs. The highest predicted noise level and the corresponding assessment floor for each NSR are summarised in ***Table 4.6***.

Table 4.6 Highest Predicted Noise Level at Each NSR

NSR	ANL, dB(A)	Floor of Highest Noise Level	Elevation of Highest Noise Level, mPD	SPL at Receiver, dB(A)
Scenario Daytime 1				
NSR 1	65	12	70.8	63.9
NSR 2	65	12	72.6	61.0
NSR 3	65	4	15.1	54.4
NSR 4	65	4	15.1	52.0
NSR 5	65	4	25.3	51.3
NSR 6	65	25	77.1	60.1
NSR 7	65	6	21.7	50.1
NSR 8	65	6	21.7	51.3
NSR 9	65	29	104.8	61.5
NSR 10	65	1	6.1	56.0
NSR 11	65	3	23.2	56.3
NSR 12	65	6	28.2	56.8
NSR 13	65	11	44.2	57.5
Scenario Daytime 2				
NSR 1	65	12	70.8	63.9
NSR 2	65	12	72.6	61.2
NSR 3	65	4	15.1	54.7
NSR 4	65	5	18.1	52.2
NSR 5	65	4	25.3	51.8
NSR 6	65	25	77.1	60.8
NSR 7	65	6	21.7	50.4
NSR 8	65	6	21.7	51.7
NSR 9	65	29	104.8	61.7

NSR	ANL, dB(A)	Floor of Highest Noise Level	Elevation of Highest Noise Level, mPD	SPL at Receiver, dB(A)
NSR 10	65	1	6.1	56.3
NSR 11	65	3	23.2	56.4
NSR 12	65	6	28.2	56.9
NSR 13	65	11	44.2	57.5
Scenario Daytime 3				
NSR 1	65	12	70.8	63.9
NSR 2	65	12	72.6	61.1
NSR 3	65	4	15.1	54.5
NSR 4	65	5	18.1	52.1
NSR 5	65	4	25.3	51.5
NSR 6	65	25	77.1	60.4
NSR 7	65	6	21.7	50.3
NSR 8	65	6	21.7	51.5
NSR 9	65	29	104.8	61.6
NSR 10	65	1	6.1	56.1
NSR 11	65	3	23.2	56.4
NSR 12	65	7	32.2	56.9
NSR 13	65	11	44.2	57.5
Scenario Nighttime 1				
NSR 1	55	29	121.8	47.1
NSR 2	55	33	135.6	48.2
NSR 3	55	4	15.1	50.4
NSR 4	55	4	15.1	46.6
NSR 5	55	4	25.3	44.5
NSR 6	55	25	77.1	54.8
NSR 7	55	6	21.7	42.7
NSR 8	55	6	21.7	44.3
NSR 9	55	12	53.8	51.8
NSR 10	55	1	6.1	47.9
NSR 11	55	3	23.2	42.7
NSR 12	55	11	43.2	43.0
NSR 13	55	12	47.2	41.7

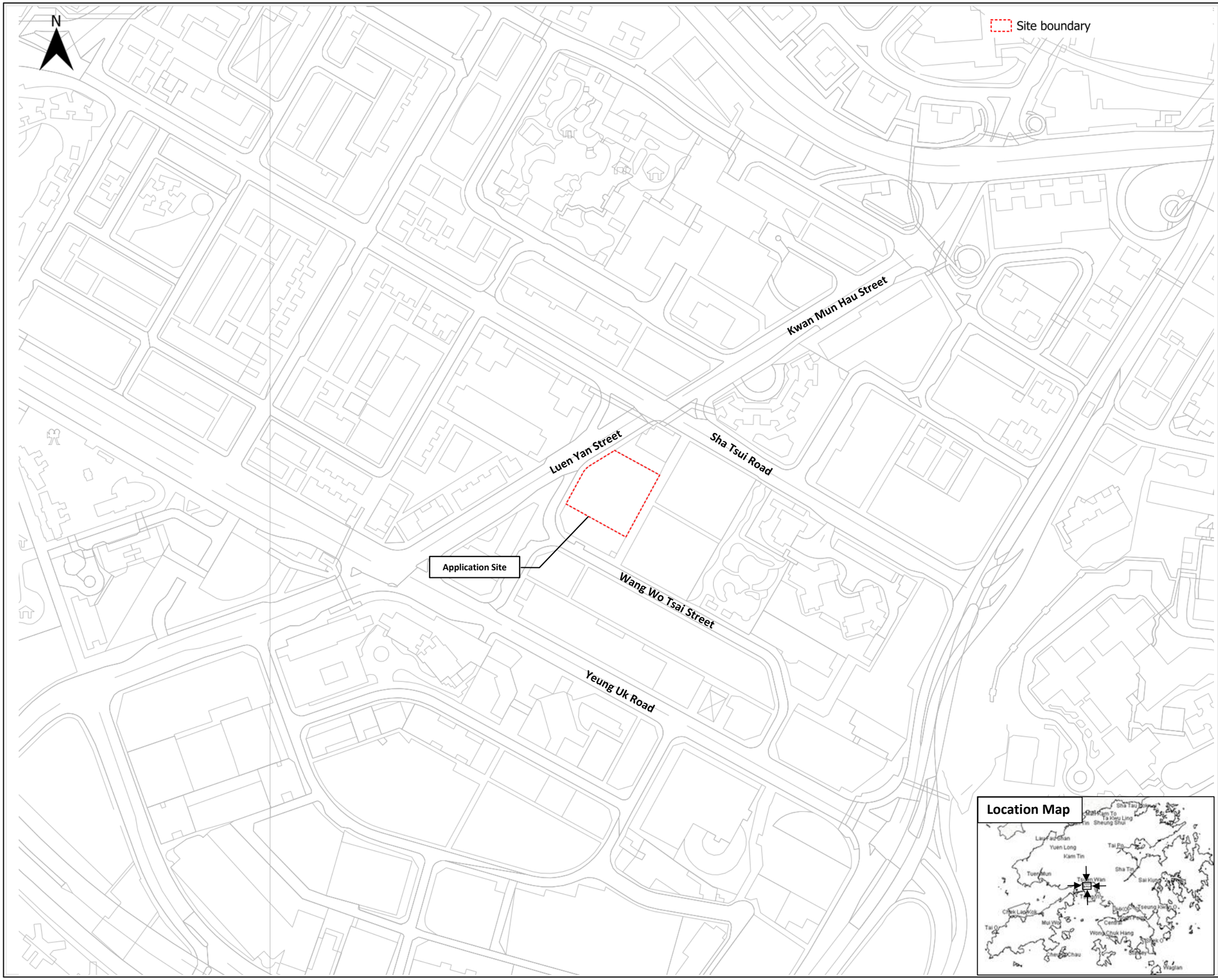
5 Conclusion

5.1.1 The potential fixed noise impacts arising from the identified noise sources on the existing and planned NSRs have been assessed in accordance with the criteria stipulated in the IND-TM and the HKPSG.

5.1.2 The assessment results indicate that no exceedance of the applicable noise criteria are predicted at any of the identified NSRs. The maximum predicted noise levels are 63.9 dB(A) during the daytime and evening period at the 12/F of NSR 1, and 52.8 dB(A) during the night-time period at the 25/F of NSR 6.

5.1.3 The results demonstrate that a sufficient margin is maintained between the predicted noise levels and the relevant assessment criterion. The proposed rooftop chiller system, incorporating enhanced noise mitigation measures and improved acoustic design, is expected to achieve a reduction in noise emissions compared with the existing system in different proposed operation scenario. Therefore, no adverse fixed noise impacts are anticipated at the identified NSRs within the 300 m assessment area of the Project Site. Subject to maintaining the overall noise emissions within the assessed range, limited adjustments to equipment operation or operating modes may be accommodated without resulting in adverse fixed noise impacts at the assessed NSRs.

Figures



Location Map

REV	DATE	DESCRIPTION	BY
-	-	FIRST ISSUE	-

CONSULTANT

CLIENT

STATUS

Fig. No.: 1.1

REVISION

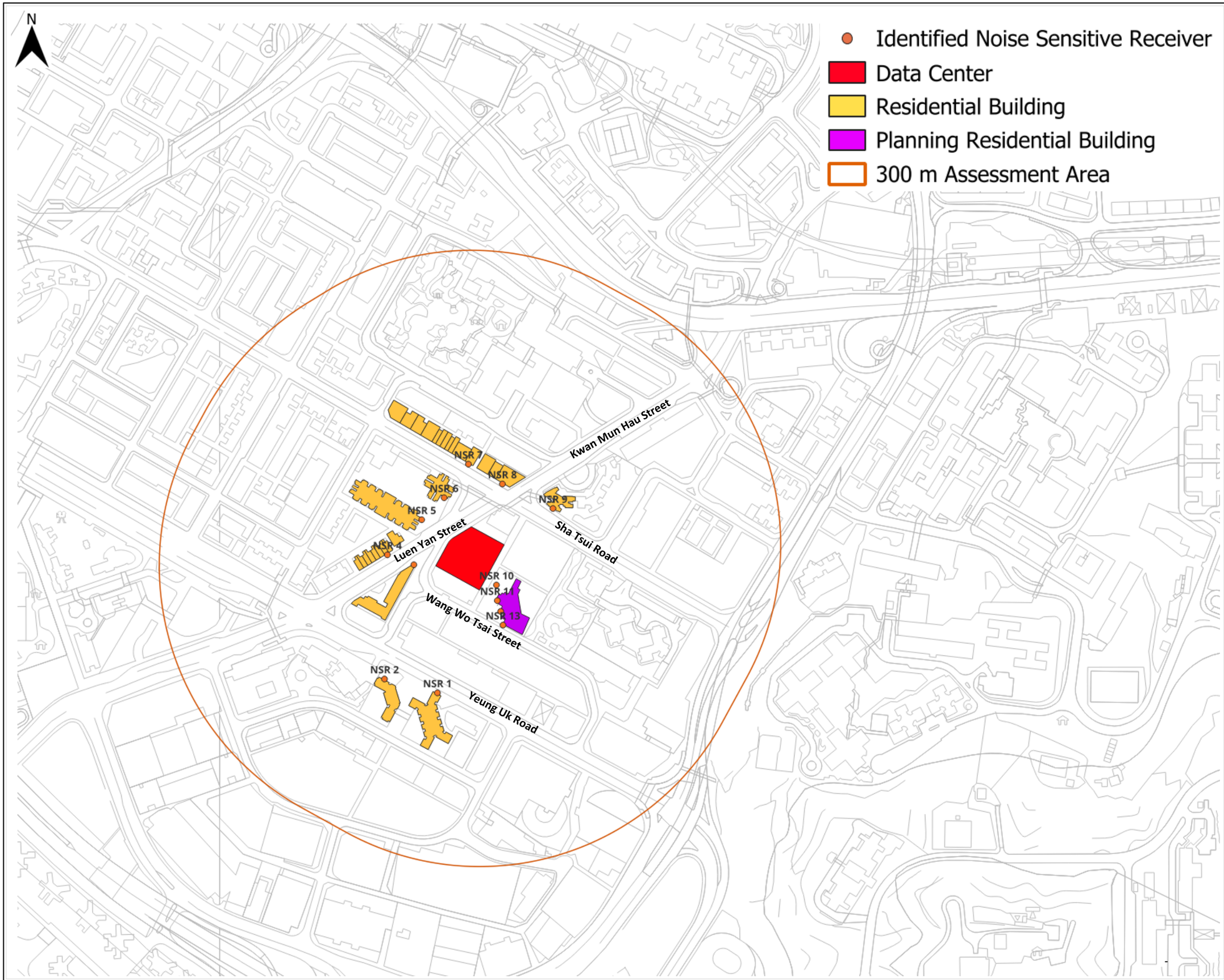
SCALE	DATE	CHECKED BY	DRAWN BY
Not in Scale	31/08/2026		

PROJECT

Section 16 Renewal for Data Centre for a Period of 3 Years on 2/F of 1 Wang Wo Tsai Street, Tsuen Wan

TITLE

SITE BOUNDARY OF THE PROJECT



REV	DATE	DESCRIPTION	BY
-	-	FIRST ISSUE	-

CONSULTANT

CLIENT

STATUS

Fig. No.: 3.1

DIVISION

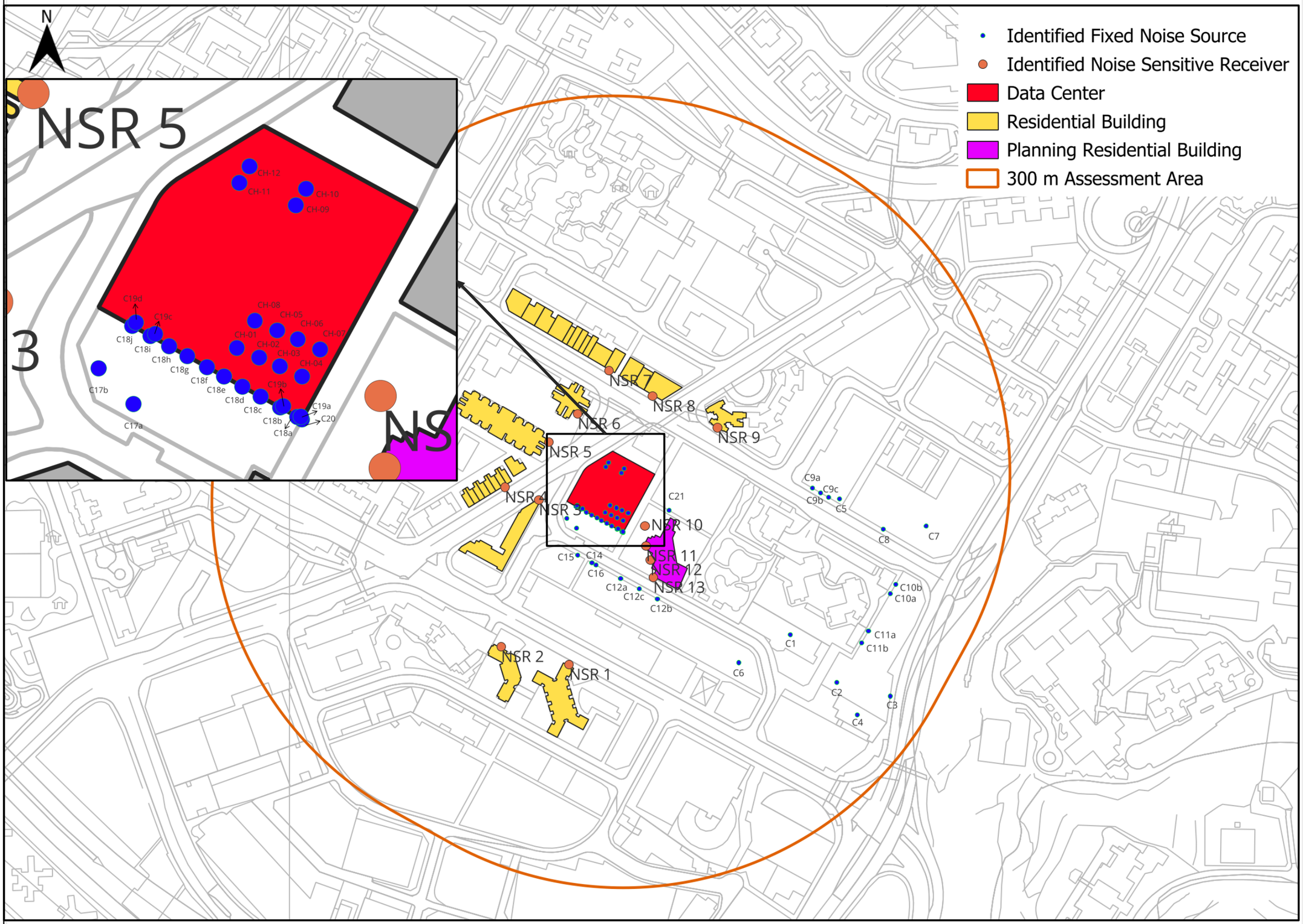
SCALE	DATE	CHECKED BY	DRAWN BY
Not in Scale	31/08/2026		

PROJECT

Section 16 Renewal for Data Centre for a Period of 3 Years on 2/F of 1 Wang Wo Tsai Street, Tsuen Wan

TITLE

IDENTIFIED NSRS



REV	DATE	DESCRIPTION	BY
-	-	FIRST ISSUE	-

CONSULTANT

CLIENT

STATUS

Fig. No.: 4.1

REVISION

SCALE	DATE	CHECKED BY	DRAWN BY
Not in Scale	31/08/2026		

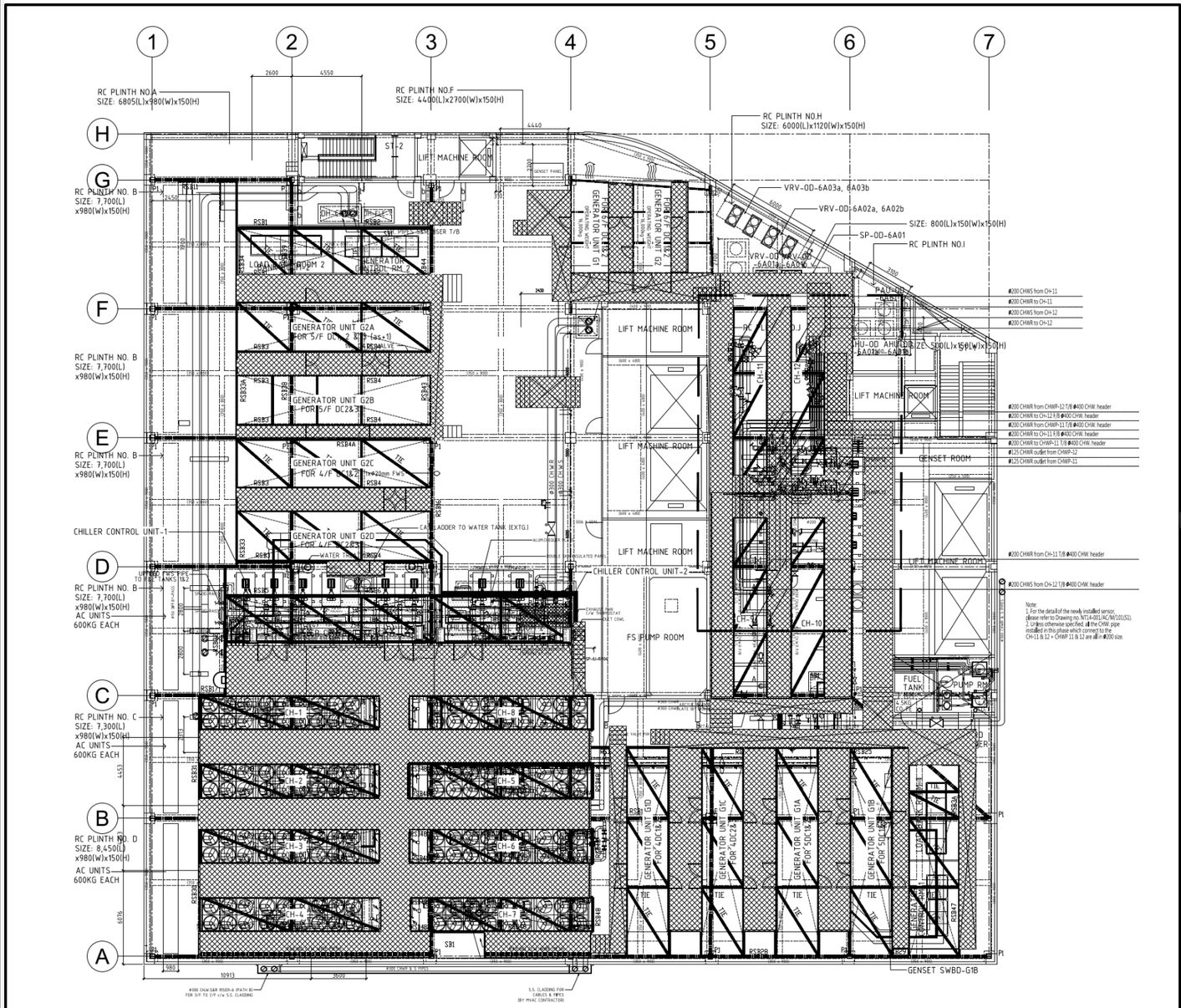
PROJECT

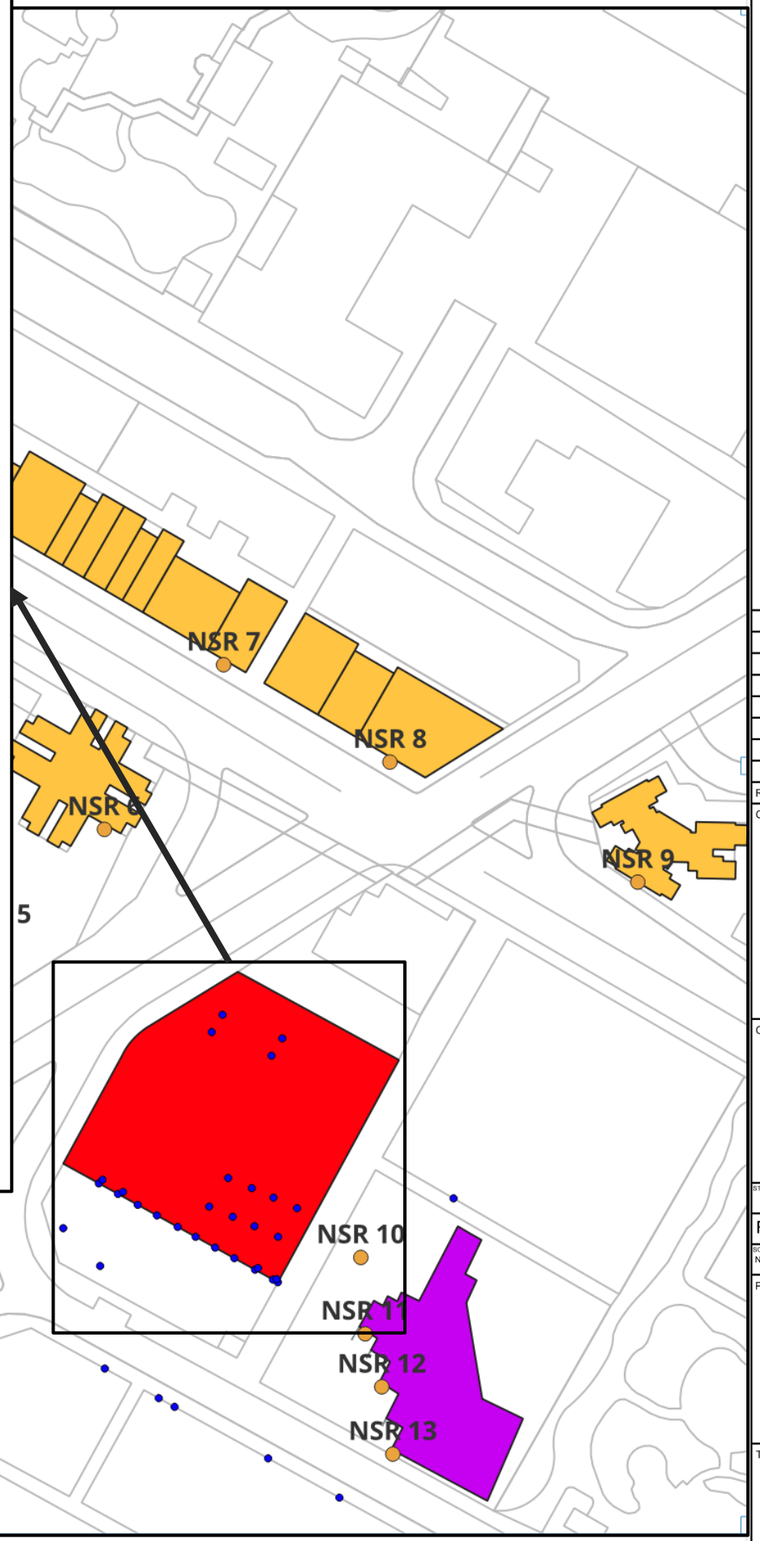
Section 16 Renewal for Data Centre for a Period of 3 Years on 2/F of 1 Wang Wo Tsai Street, Tsuen Wan

TITLE

LOCATION OF FIXED NOISE SOURCES AND NOISE SENSITIVE RECEIVERS

-





-	-	FIRST ISSUE	-
REV	DATE	DESCRIPTION	BY

CONSULTANT

CLIENT

STATUS

Fig. No.: 3.2

REVISION

SCALE	DATE	CHECKED BY	DRAWN BY
Not in Scale	31/08/2026		

PROJECT

Section 16 Renewal for Data Centre for a Period of 3 Years on 2/F of 1 Wang Wo Tsai Street, Tsuen Wan

TITLE

ROOFLAYOUT OF DATA CENTER

-



REV	DATE	DESCRIPTION	BY
-	-	FIRST ISSUE	-

CONSULTANT

CLIENT

STATUS

Fig. No.: 5.1

DIVISION

SCALE: Not in Scale | DATE: 31/08/2026 | CHECKED BY | DRAWN BY

PROJECT

Section 16 Renewal for Data Centre for a Period of 3 Years on 2/F of 1 Wang Wo Tsai Street, Tsuen Wan

TITLE

LOCATION OF THE ACOUSTIC FINS

Appendix A

Reference Report and Typical drawing of treatments

Memorandum

From:	Date
Simon Wong	08/10/2026
To	**cc**
Raymond Pak	Equinix HK3 Team

Subject
Site HK 3 Chiller Noise Treatment – Update to Acoustic Specifications

Introduction

Cundall previously issued acoustic specifications for the new and existing chillers (references HK3-CDL-XX-XX-SP-AS-45301 and HK3-CDL-XX-XX-SP-AS-45302, respectively), setting out the performance requirements for CH-01 to CH-12 at Site HK3. This memo summarises the updated chiller operating scenarios and associated acoustic treatment and performance requirements.

Operating Scenarios of Chillers

CH-02, CH-04 and CH-11 are not expected to operate, while CH-08 will operate during the daytime only. The operating scenarios for the Site HK3 chiller plant are summarised in Table 1 below.

Table 1 Operating Scenarios of Chillers

Scenario	Chiller in Operation	Time Period
Daytime 1	CH-1 CH-3 CH-5 CH-6 CH-7 CH-10 CH-12 (Access Panels Closed)	Daytime
Daytime 2	CH-1 CH-3 CH-6 CH-7 CH-8 CH-09 CH-10 (Access Panels Closed)	Daytime
Daytime 3	CH-1 CH-3 CH-5 CH-6 CH-07 CH-09 CH-10 (Access Panels Opened)	Daytime
Nighttime 1	CH-1 CH-3 CH-5 CH-6 CH-07 CH-09 CH-10 (Access Panels Closed)	Nighttime

Updated Acoustic Treatment and Performance Requirement

As CH-08 will operate during the daytime only, the existing chiller and acoustic treatment will be retained without further upgrades. The revised requirements are summarised in Table 2 and Table 3.

Table 2 Maximum sound pressure level (SPL) at 1m from Existing Chiller and corresponding acoustic treatments.

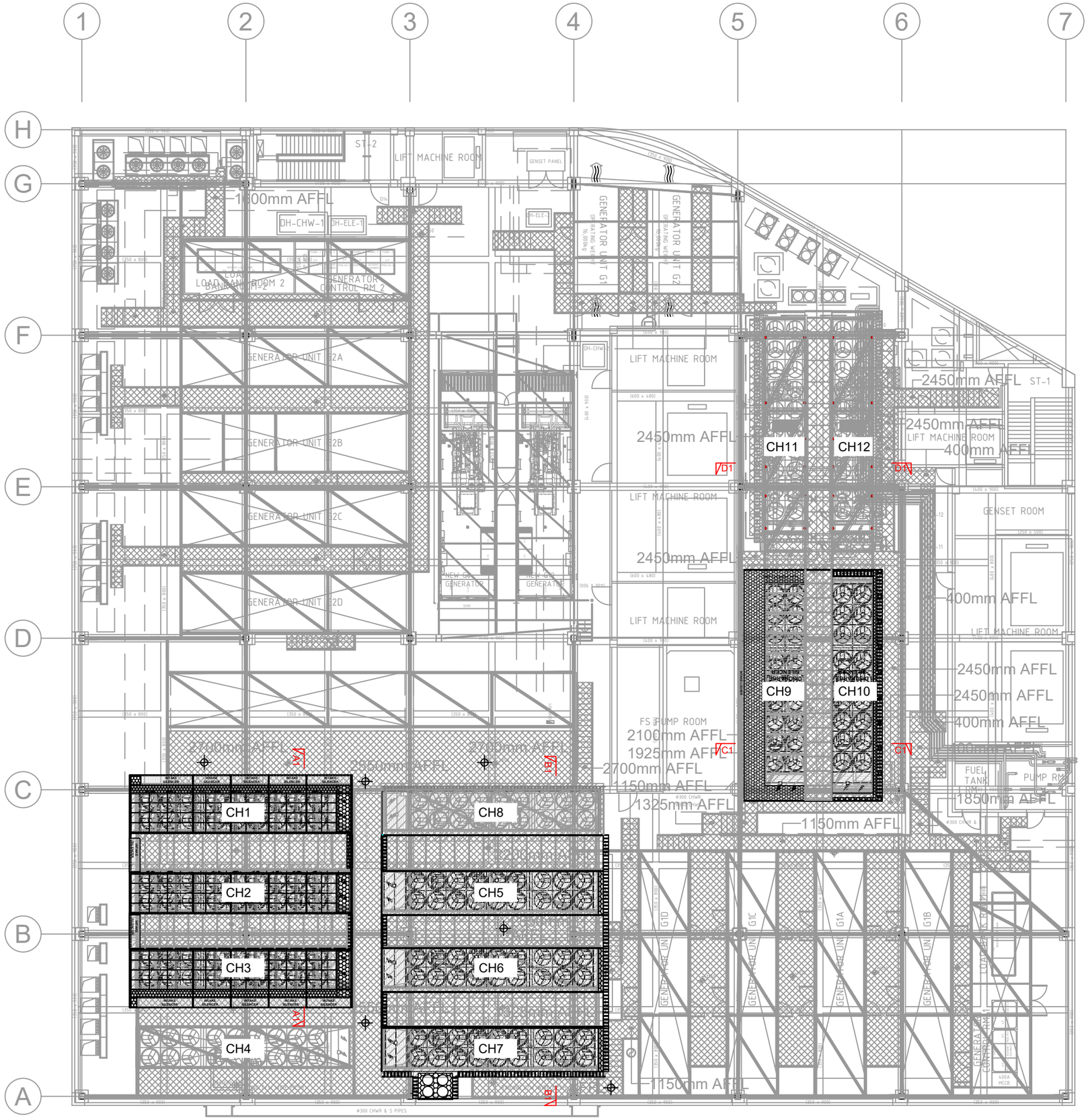
Chiller	Side	Maximum SPL at 1m, dBA	Acoustic Treatment [1]
CH-01 and CH-03	Discharge	69	The existing chillers will be retained. Acoustic silencers and enclosures will be installed in accordance with Acoustic Specification HK3-CDL-XX-XX-SP-AS-45302.
	Intake	71	
CH-06	Discharge	69	
	Intake	74	
CH-09	Discharge	80	
CH-12	Discharge	69	
CH-08	Discharge	82	The existing chiller will be retained. No acoustic treatment upgrades are required. The noise levels are based on site measurement data.
	Intake	81	

Remarks [1]: The acoustic treatment is subject to the contractor's proposal and shall achieve the maximum SPL stipulated in the acoustic specifications.

Table 3 Maximum sound pressure level (SPL) at 1m from New Chiller and corresponding acoustic treatments.

Chiller	Side	Maximum SPL at 1m, dBA	Acoustic Treatment (1)
CH-05 and CH-07	Discharge	67	The existing chillers will be replaced. Acoustic silencers and enclosures will be installed in accordance with Acoustic Specification HK3-CDL-XX-XX-SP-AS-45301.
	Intake	69	
CH-10	Discharge	67	
	Intake	81	

Remarks (1): The acoustic treatment is subject to the contractor's proposal and shall achieve the maximum SPL stipulated in the acoustic specifications.



LAYOUT PLAN

REV	DESCRIPTION	DATE

CONTRACTOR:

LEGEND ACOUSTICS ENGINEERING LTD.

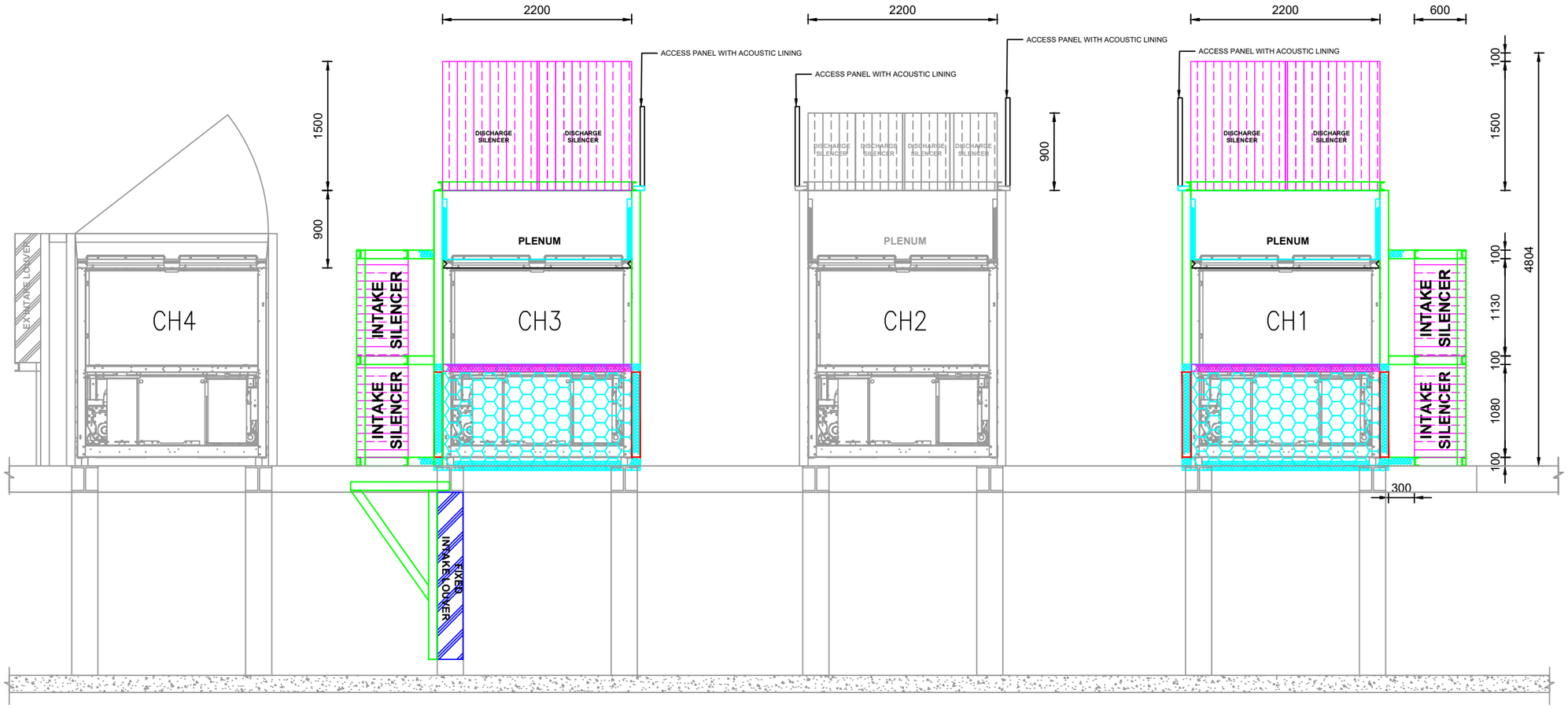
PROJECT:

EQUINIX HK3

TITLE:

ACOUSTIC ENCLOSURE FOR CHILLER

DRAWN: VICTOR	DATE: 07/10/2026
CHECKED: J.T.	SCALE: N.T.S.
DWG. NO.: 2	



SECTION A1-A1

REV	DESCRIPTION	DATE

Notes:
1. ACCESS PANEL FOR MAINTENANCE
2. DAYTIME MODE: ACCESS PANEL OPENED FOR VENTILATION
3.NIGHTTIME MODE: ACCESS PANEL CLOSED FOR ACOUSTIC

CONTRACTOR:

LEGEND ACOUSTICS ENGINEERING LTD.

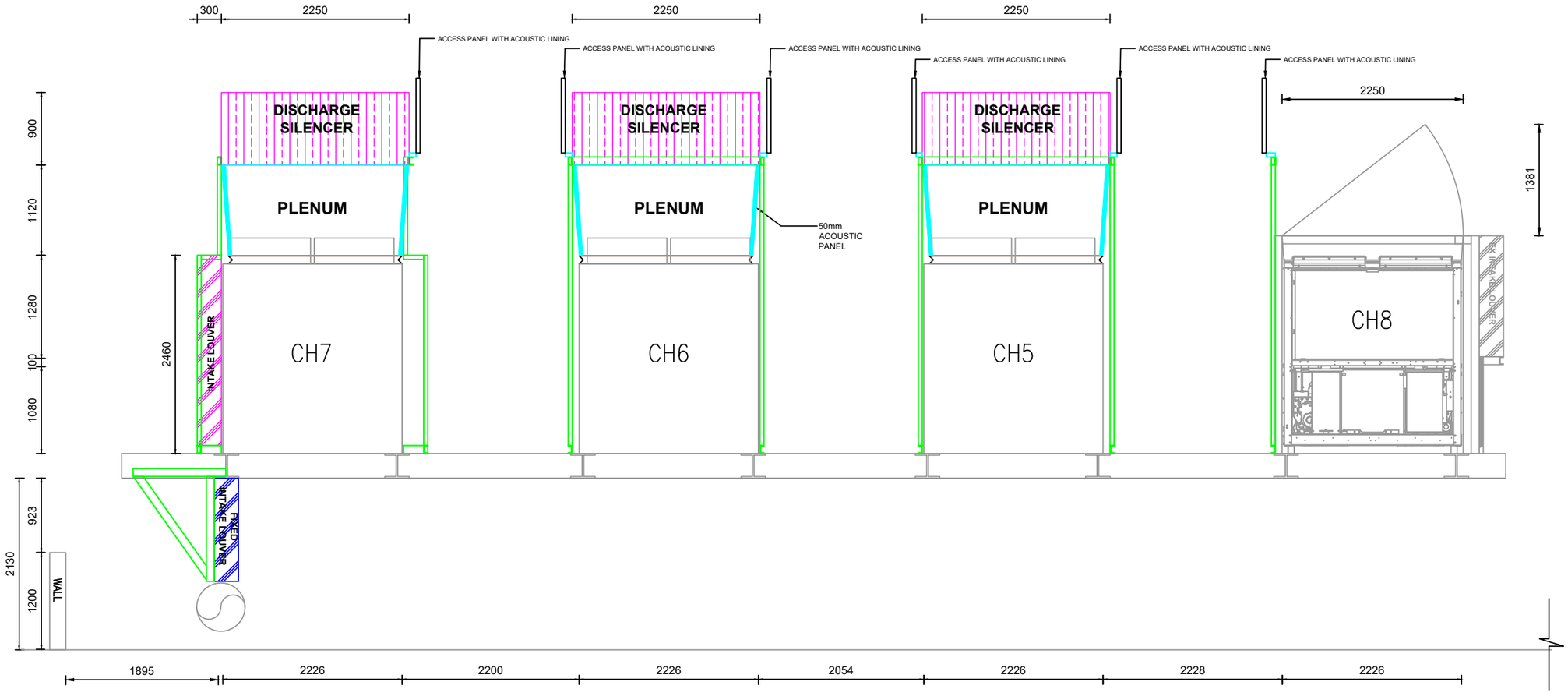
PROJECT:

EQUINIX HK3(CH1–CH3)

TITLE:

ACOUSTIC ENCLOSURE FOR CHILLER

DRAWN: VICTOR	DATE:07/10/2026
CHECKED: J.T.	SCALE: N.T.S.
DWG. NO.: 3	



SECTION B1-B1

REV	DESCRIPTION	DATE

Notes:
1. ACCESS PANEL FOR MAINTENANCE
2. DAYTIME MODE: ACCESS PANEL OPENED FOR VENTILATION
3.NIGHTTIME MODE: ACCESS PANEL CLOSED FOR ACOUSTIC

CONTRACTOR:

LEGEND ACOUSTICS ENGINEERING LTD.

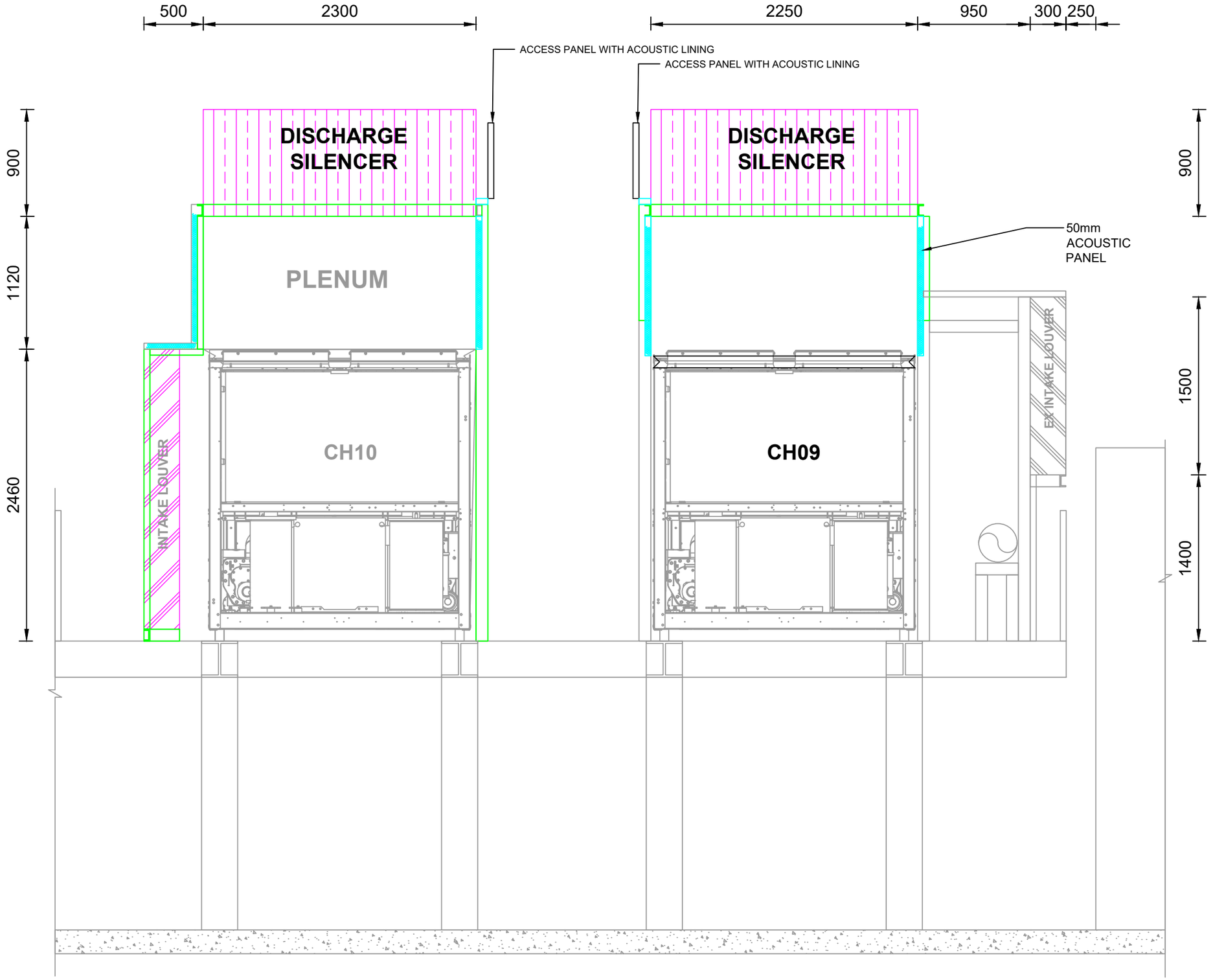
PROJECT:

EQUINIX HK3(CH5–CH8)

TITLE:

ACOUSTIC ENCLOSURE FOR CHILLER

DRAWN: VICTOR	DATE:07/10/2026
CHECKED: J.T.	SCALE: N.T.S.
DWG. NO.: 3	



SECTION C1-C1

REV	DESCRIPTION	DATE

Notes:
1. ACCESS PANEL FOR MAINTENANCE
2. DAYTIME MODE: ACCESS PANEL OPENED FOR VENTILATION
3. NIGHTTIME MODE: ACCESS PANEL CLOSED FOR ACOUSTIC

CONTRACTOR:

LEGEND ACOUSTICS ENGINEERING LTD.

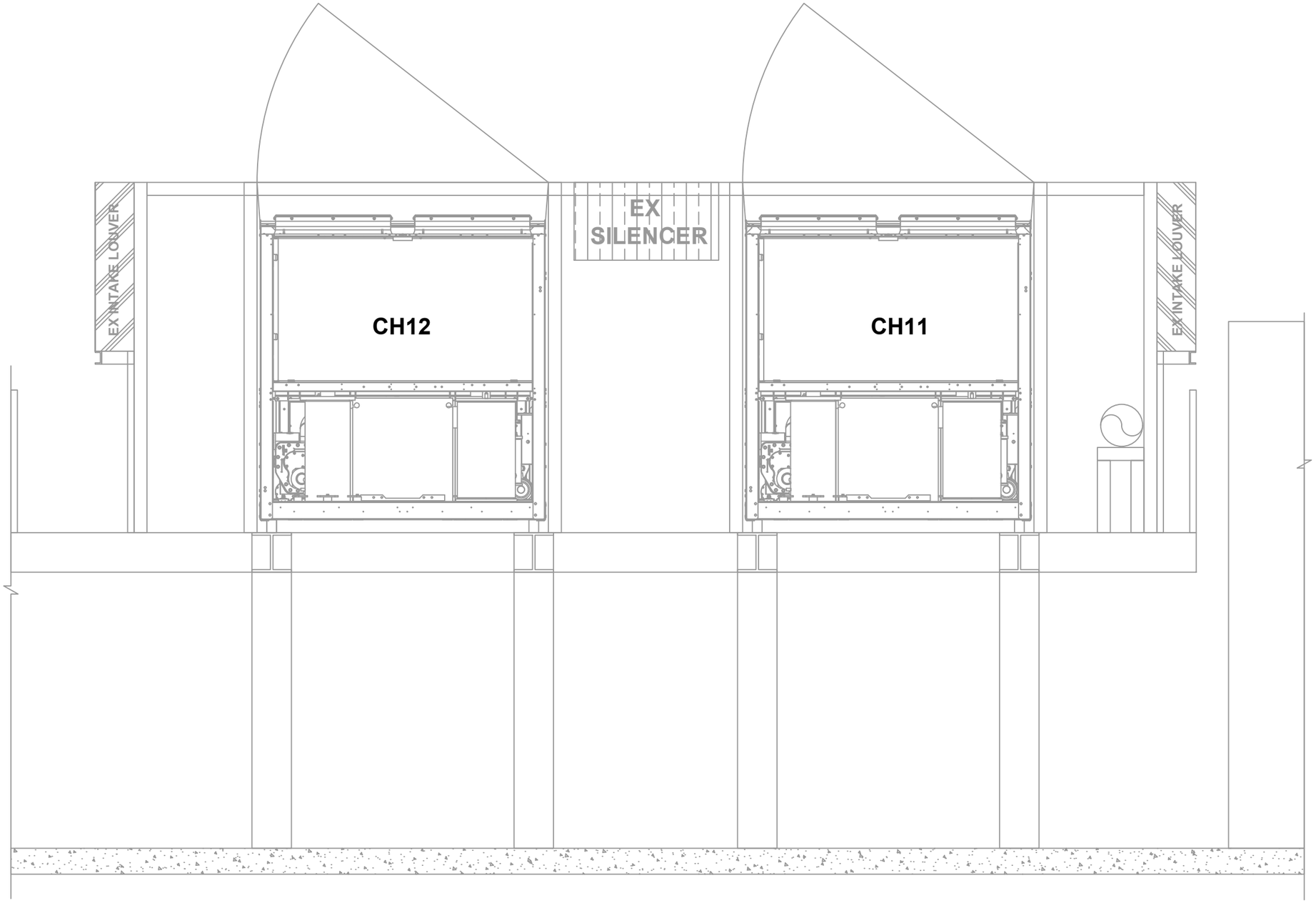
PROJECT:

EQUINIX HK3(CH9–CH10)

TITLE:

ACOUSTIC ENCLOSURE FOR CHILLER

DRAWN: VICTOR	DATE: 07/10/2026
CHECKED: J.T.	SCALE: N.T.S.
DWG. NO.: 5	



SECTION D1-D1

REV	DESCRIPTION	DATE

CONTRACTOR:

LEGEND ACOUSTICS ENGINEERING LTD.

PROJECT:

EQUINIX HK3(CH11–CH12)

TITLE:

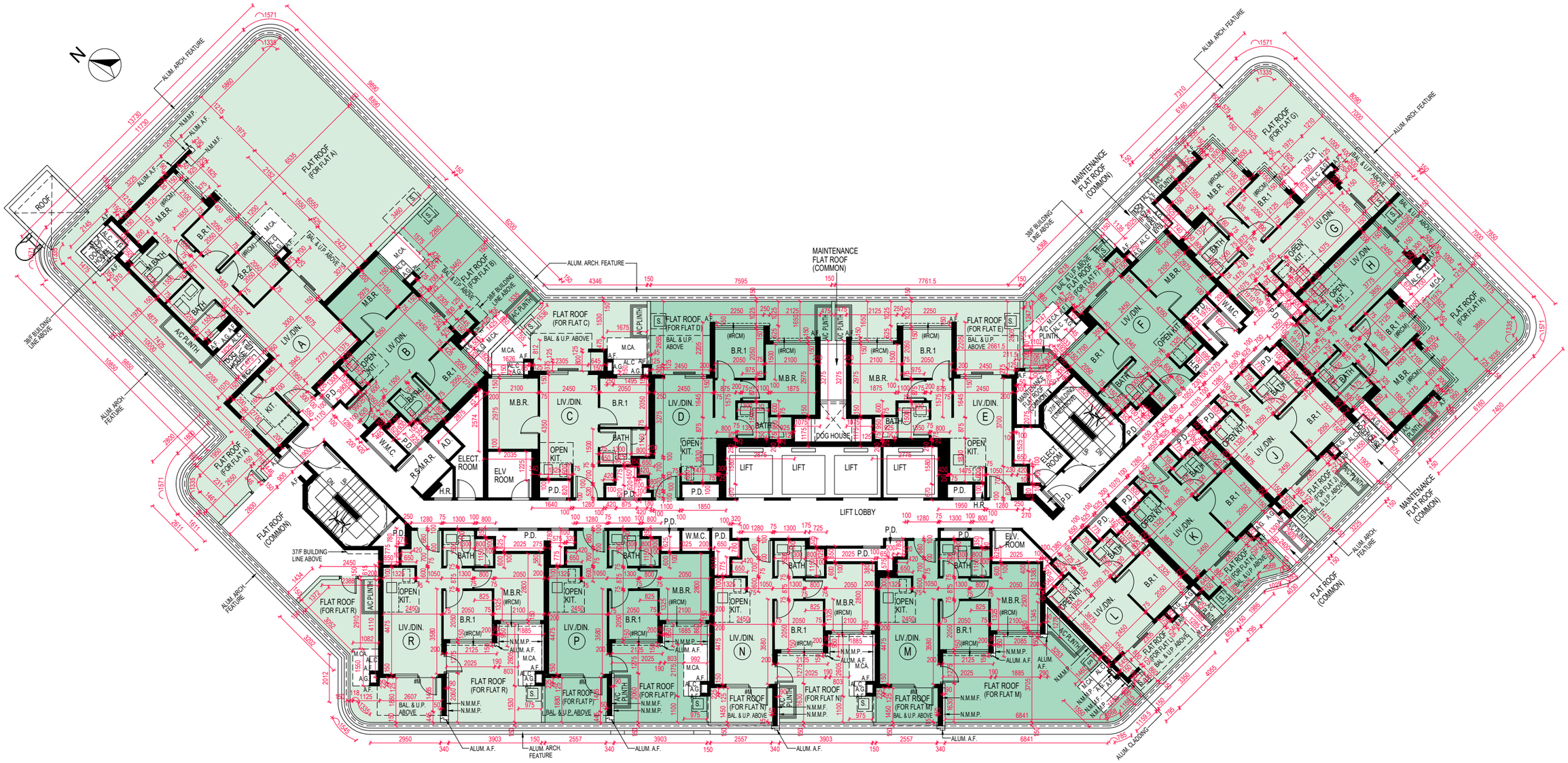
ACOUSTIC ENCLOSURE FOR CHILLER

DRAWN: VICTOR	DATE: 07/10/2026
CHECKED: J.T.	SCALE: N.T.S.
DWG. NO.: 6	

Appendix B

Lime Spark Building Layout

3/F FLOOR PLAN
3樓平面圖



5/F - 12/F, 15/F - 23/F, 25/F - 33/F & 35/F - 36/F FLOOR PLAN
5樓至12樓、15樓至23樓、25樓至33樓及35樓至36樓平面圖



Scale 比例
0M (米) 2M (米) 4M (米)

37/F FLOOR PLAN
37樓平面圖



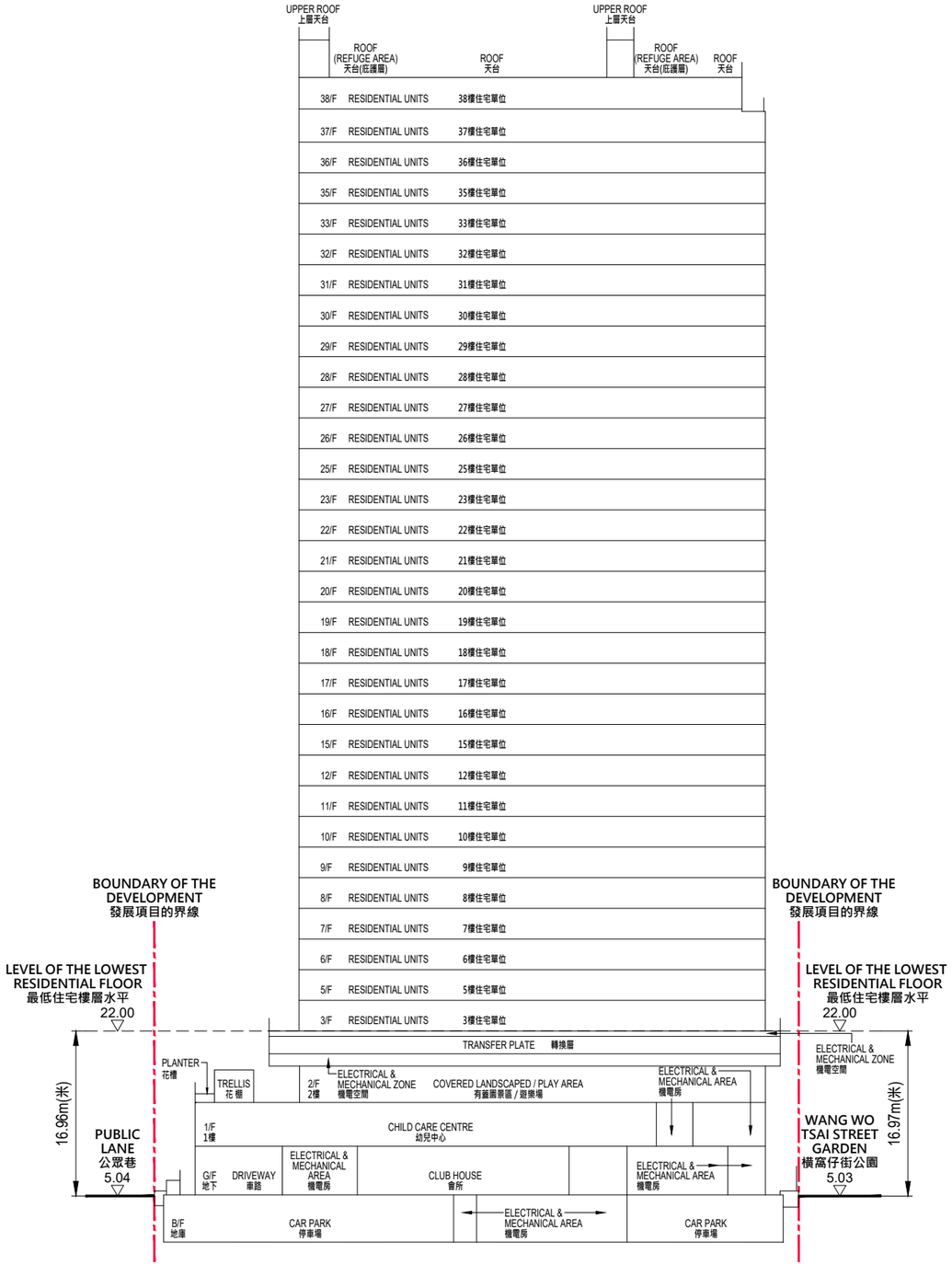
Scale 比例
0M (米) 2M (米) 4M (米)

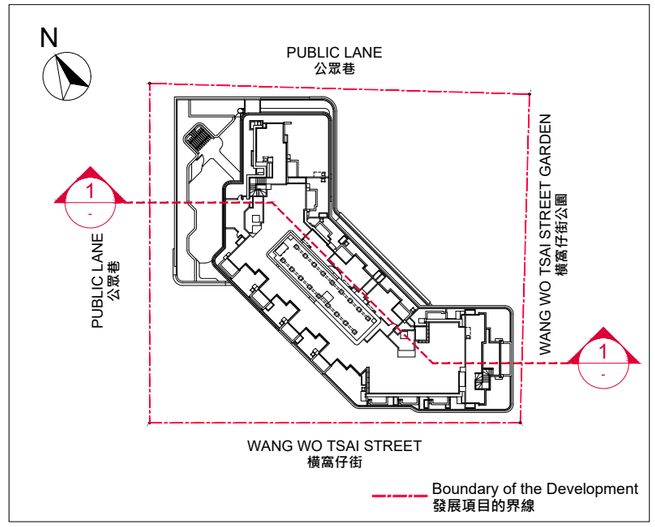
38/F FLOOR PLAN
38樓平面圖



CROSS-SECTION PLAN OF BUILDING IN THE DEVELOPMENT
發展項目中的建築物的橫截面圖

CROSS-SECTION PLAN 1-1 橫截面圖 1-1





KEY PLAN
索引圖

Notes:
1. ▽ Denotes height (in metres) above the Hong Kong Principal Datum.
2.(-----) Dotted line denotes the level of the lowest residential floor of the building in the Development.
3.The part of Public Lane adjacent to the building is 5.04 metres above the Hong Kong Principal Datum.
4.The part of Wang Wo Tsai Street Garden adjacent to the building is 5.03 metres above the Hong Kong Principal Datum.

備註：
1. ▽ 代表香港主水平基準以上的高度(米)。
2. (-----) 虛線代表發展項目中建築物之最低住宅樓層水平。
3. 毗連建築物的一段公眾巷為香港主水平基準以上5.04米。
4. 毗連建築物的一段橫窩仔街公園為香港主水平基準以上5.03米。

Appendix C

Sample Calculation for Fixed Noise Impact Assessment of Acoustic Fins

Appendix C Calculation example for Barrier Correction by Acoustic Fins

Screening by Acoustic Fins

This situation applies specifically to NSR11, NSR12 and NSR13, which are located within the planned residential development LIME SPARK. Acoustic fins are proposed to screen noise emitted from the data centre. The barrier attenuation is calculated using the methodology described in Section 4.5.1, based on the following equation:

$$C_{barr} = -10log_{10}[1 + (2 + (\frac{20}{\lambda})z]$$

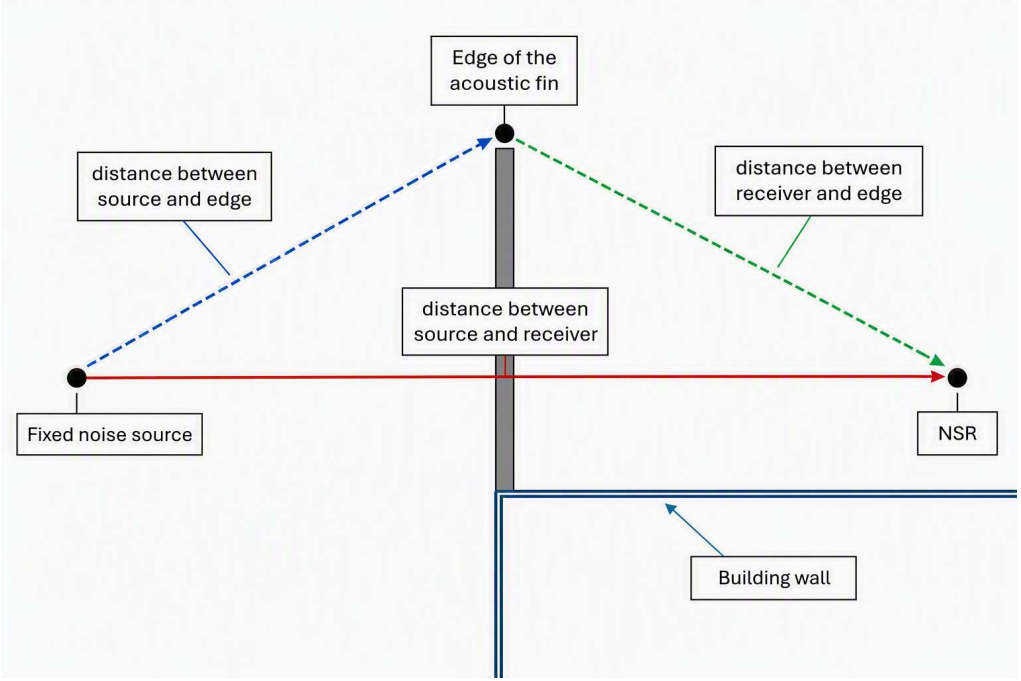
where:

- C_{barr}= barrier correction (dB);
- z= path length difference (m);
- λ= wavelength of sound (m), calculated based on an assumed frequency of 315 Hz and a sound speed of 343 m/s under standard atmospheric conditions.

The coordinates of the acoustic fins are included in the calculation tables. Using the coordinates of the acoustic fin, noise source and NSR, the following distances are determined:

- Source-to-receiver distance;
- Source-to-barrier edge distance;
- Receiver-to-barrier edge distance.

The relationship among these parameters is illustrated in the following plan-view figure.



The length of the three parts of propagation distance are calculated by the coordinates of the noise source, edges of the acoustic fins and the fixed noise source. The formular will follows the geometry logical distance formular in 3D dimensions which take into account the elevation of each relevant element.

$$D = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$



	W	X	Y	Z	XA	XB
C20	830282	825376.8	9.5	45.65685	1.25401	
CH-1	830266.8	825393.6	52.8	87.98698	1.25401	
CH-2	830272	825391.3	52.8	83.18146	1.25401	
CH-3	830276.8	825389.2	52.8	58.8944	1.25401	
CH-4	830282	825386.9	52.8	54.34158	1.25401	
CH-5	830276.2	825397.6	52.8	86.57184	1.25401	
CH-6	830281	825395.6	52.8	82.63097	1.25401	
CH-7	830286.2	825393.2	52.8	58.49256	1.25401	
CH-8	830271	825399.9	52.8	71.04085	1.25401	
CH-9	830280.8	825416.9	52.8	92.33664	1.25401	
CH-10	830283	825430.8	52.8	95.4191	1.25401	
CH-11	830267.3	825412.2	52.8	101.6775	1.25401	
CH-12	830269.7	825436	52.8	104.3747	1.25401	

Source screened	X	Y	e source he	Distance between source and edge
C13	830281.5	825396.1	52.8	
C17a	830242.6	825380.4	6.6	
C17b	830234.4	825388.8	6.6	
C18a	830280.9	825377.4	10.8	
C18b	830276.9	825379.6	10.8	
C18c	830272.3	825382.2	10.8	
C18d	830268.1	825384.5	10.8	
C18e	830263.8	825386.9	10.8	
C18f	830259.8	825389.1	10.8	
C18g	830255.2	825391.8	10.8	
C18h	830251	825393.9	10.8	
C18i	830246.6	825396.4	10.8	
C18j	830242.3	825398.7	10.8	
C19a	830281.7	825377.5	9.5	
C19b	830277.8	825380	9.5	
C19c	830247.7	825396.8	9.5	
C19d	830243.1	825399.5	9.5	
C20	830282	825376.8	9.5	
CH-1	830266.8	825393.6	52.8	
CH-2	830272	825391.3	52.8	
CH-3	830276.8	825389.2	52.8	
CH-4	830282	825386.9	52.8	
CH-5	830276.2	825397.6	52.8	
CH-6	830281	825395.6	52.8	
CH-7	830286.2	825393.2	52.8	
CH-8	830271	825399.9	52.8	
CH-9	830280.8	825416.9	52.8	
CH-10	830283	825430.8	52.8	
CH-11	830267.3	825412.2	52.8	
CH-12	830269.7	825436	52.8	

	AD	AE	AF	AG	AH	AI	AJ
CH-10	67.94724	68.61797	69.32026	69.79449	70.29132	70.72173	
CH-11	67.26278	67.85617	68.40067	68.89261	69.32859	69.70547	
CH-12	98.57266	99.39913	100.1567	100.8405	101.4459	101.9689	

NSR 13						
NSR Level	1	2	3	4	5	6
Height (mPE	22.2	25.2	28.2	31.2	34.2	37.2
C13	0	0	0	0	0	0
C17a	21.94806	24.89962	27.85117	30.80272	33.75427	36.70582
C17b	21.98044	24.93822	27.896	30.85378	33.81156	36.76933
C18a	21.90181	24.82333	27.74486	30.66639	33.58792	36.50945
C18b	21.92502	24.85265	27.78029	30.70792	33.63556	36.56319
C18c	21.94821	24.88195	27.81569	30.74942	33.68316	36.6169
C18d	21.96657	24.90514	27.84371	30.78228	33.72086	36.65943
C18e	21.98293	24.9258	27.86868	30.81155	33.75443	36.6973
C18f	21.99618	24.94254	27.88891	30.83527	33.78163	36.726
C18g	22.00978	24.95969	27.90961	30.85954	33.8095	36.75941
C18h	22.02079	24.97363	27.92647	30.87931	33.83214	36.78498
C18i	22.03101	24.98654	27.94207	30.8976	33.85312	36.80865
C18j	22.03985	24.99771	27.95556	30.91342	33.87127	36.82913
C19a	21.86517	24.78608	27.70699	30.62789	33.5488	36.46971
C19b	21.89309	24.82059	27.74809	30.67559	33.6031	36.5306
C19c	22.01065	24.96593	27.9212	30.87647	33.83174	36.78702
C19d	22.02155	24.9764	27.93724	30.89509	33.85293	36.81078
C20	21.86013	24.77685	27.69356	30.61928	33.53899	36.45871
CH-1	22.75416	25.69986	28.64553	31.59119	34.53686	37.48255
CH-2	22.79052	25.73734	28.67875	31.62037	34.56198	37.5036
CH-3	22.83797	25.77542	28.71288	31.65033	34.58778	37.52524
CH-4	22.89021	25.82255	28.75488	31.68721	34.61954	37.55187
CH-5	22.76575	25.71038	28.65481	31.59935	34.54388	37.48842
CH-6	22.80065	25.74177	28.68288	31.62399	34.5651	37.50622
CH-7	22.84226	25.77926	28.71632	31.65336	34.59039	37.52743
CH-8	22.73078	25.67874	28.62671	31.57467	34.52263	37.47059
CH-9	22.61001	25.56981	28.52961	31.48942	34.44922	37.40902
CH-10	22.59691	25.55802	28.5191	31.48019	34.44127	37.40236
CH-11	22.5728	25.53625	28.4997	31.46315	34.4286	37.39005
CH-12	22.56328	25.52766	28.49205	31.45643	34.42082	37.3852

NSR 13						
NSR Level	1	2	3	4	5	6
Height (mPE	22.2	25.2	28.2	31.2	34.2	37.2
C13	0	0	0	0	0	0
C17a	78.59645	79.24645	80.00573	80.86728	81.8298	82.88978
C17b	89.82043	90.38976	91.05443	91.81238	92.66126	93.59866
C18a	48.21846	49.01449	49.9782	51.1001	52.37933	53.77751
C18b	52.20047	52.94454	53.83794	54.881	56.06536	57.38126
C18c	56.95891	57.61458	58.43463	59.39898	60.49495	61.71742
C18d	61.3586	61.98631	62.75122	63.64828	64.67227	65.81778
C18e	65.93081	66.51529	67.2283	68.06867	69.02515	70.09901
C18f	70.17887	70.72817	71.3994	72.18515	73.0936	74.10853
C18g	75.14739	75.66062	76.28847	77.02811	77.87838	78.82975
C18h	79.74454	80.22817	80.82054	81.51908	82.32108	83.22203
C18i	84.54191	84.97995	85.5372	86.21727	86.97686	87.80972
C18j	89.18798	89.63066	90.15153	90.77838	91.49916	92.31195
C19a	48.16004	49.03661	50.07783	51.27387	52.61359	54.08887
C19b	52.39687	53.20368	54.1648	55.27234	56.51753	57.89155
C19c	84.23186	84.79633	85.54291	86.05905	86.85312	87.77541
C19d	89.3288	89.80442	90.37718	91.04523	91.8065	92.6587
C20	47.48061	48.37245	49.42766	50.63885	51.99513	53.48545
CH-1	AE$26^2)	73.57487	72.50284	71.54063	70.69273	69.96329
CH-2	70.34381	69.09162	67.94489	66.92124	66.01403	65.23129
CH-3	66.49419	65.12923	63.9157	62.8221	61.8548	61.01081
CH-4	62.38337	60.9679	59.6698	58.49688	57.45681	56.55691
CH-5	73.29279	72.09184	70.99741	70.01452	69.14791	68.40199
CH-6	69.67092	68.40641	67.25204	66.21337	65.29653	64.5061
CH-7	65.90609	64.56789	63.34361	62.23996	61.26347	60.4203
CH-8	77.43565	76.29789	75.26465	74.3382	73.52256	72.82148
CH-9	97.07545	96.17195	95.35431	94.62475	93.98534	93.43791
CH-10	99.96387	99.0867	98.29331	97.58573	96.96584	96.43534
CH-11	106.1127	105.2868	104.5404	103.8754	103.2933	102.7954
CH-12	108.6557	107.8492	107.1208	106.4719	105.904	105.4185

NSR 13						
NSR Level	1	2	3	4	5	6
Height (mPE	22.2	25.2	28.2	31.2	34.2	37.2
C13	0	0	0	0	0	0
C17a	77.92155	78.55623	79.29576	80.13724	81.07749	82.11313
C17b	89.1831	89.7405	90.39129	91.13349	91.96486	92.88302
C18a	47.98887	48.78768	49.66699	50.73811	51.95162	53.29782
C18b	51.96864	52.64366	53.4996	54.49957	55.63178	56.90309
C18c	56.62969	57.27973	58.07064	58.997	60.05252	61.23054
C18d	61.0186	61.62412	62.36237	63.2287	64.21793	65.32447

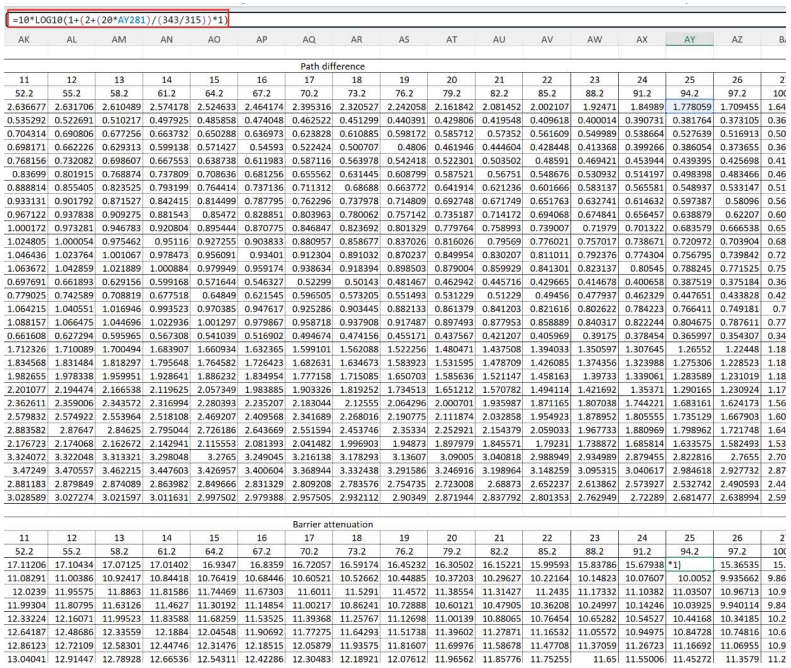
Acoustice Fins location

Fin Location	End X	End Y	Length (m)
Fins next to NSR 11	830298.6	825364.2	3
Fins next to NSR 12	830303.7	825353.2	1.8
Fins next to NSR 13	830306.3	825338.3	1.5

Source screened by Fins	X	Y	Noise source height	Horizontal distance between edge and source
C13	830281.5	825396.1	52.8	62.90406096
C17a	830242.6	825380.4	6.6	76.39506152
C17b	830234.4	825388.8	6.6	87.84683485
C18a	830280.9	825377.4	10.8	46.68706459
C18b	830276.9	825379.6	10.8	50.73339697
C18c	830272.3	825382.2	10.8	55.52176208
C18d	830268.1	825384.5	10.8	59.98813951
C18e	830263.8	825386.9	10.8	64.60240691
C18f	830259.8	825389.1	10.8	68.88516085
C18g	830255.2	825391.6	10.8	73.88974739
C18h	830251	825393.9	10.8	78.51606116
C18i	830246.6	825396.4	10.8	83.34060265
C18j	830242.3	825398.7	10.8	88.01116225
C19a	830281.7	825377.5	9.5	46.31060062
C19b	830277.6	825380	9.5	50.63709886
C19c	830247.7	825396.8	9.5	82.85596255
C19d	830243.1	825399.5	9.5	87.99150669
C20	830282	825376.8	9.5	45.6048288
CH-1	830266.8	825393.6	52.8	67.98697547
CH-2	830272	825391.3	52.8	63.1814583
CH-3	830276.8	825389.2	52.8	58.89439978
CH-4	830282	825386.9	52.8	54.34137637
CH-5	830276.2	825397.6	52.8	66.5728361
CH-6	830281	825395.6	52.8	62.63097448
CH-7	830286.2	825393.2	52.8	58.49256064
CH-8	830271	825399.9	52.8	71.04085254
CH-9	830280.6	825426.9	52.8	92.33663939
CH-10	830283	825430.8	52.8	95.41909979
CH-11	830267.3	825432.2	52.8	101.6774743
CH-12	830269.7	825436	52.8	104.374734

NSR	Description	X	Y
NSR 1	Indi Home	830236.3	825265.3
NSR 2	H Cube	830178.8	825280.3
NSR 3	Tsuen Fook Kui	830210.7	825404.3
NSR 4	18 Luen Yan Street	830186.9	825423.8
NSR 5	Bo Shek Mansion Block 3	830219.2	825453.2
NSR 6	Bo Shek Mansion Block 2	830243.6	825477
NSR 7	Tak Yan Building Stage 2	830270	825513.4
NSR 8	Kwong Fat Building	830306.8	825491.9
NSR 9	New Haven Tower	830361.7	825465.3
NSR 10	Child Care Centre	830297.8	825379.2
NSR 11	Planning	830301.3	825365.4
NSR 12	Planning	830305	825353.7
NSR 13	Planning	830307.4	825338.8

Based on the calculated path length difference, the barrier attenuation provided by the acoustic fins is determined and applied to the relevant data centre noise sources. Noise sources C17 to C20 and CH1 to CH12 therefore adopt the calculated acoustic fin attenuation values instead of the default 10 dB building screening correction.



=10*LOG10(1+(2+(20*AY281)/(343/315))*1)

AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	B
Path difference																
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	2
52.2	55.2	58.2	61.2	64.2	67.2	70.2	73.2	76.2	79.2	82.2	85.2	88.2	91.2	94.2	97.2	10
2.636677	2.631706	2.610489	2.574178	2.524633	2.464174	2.395316	2.320527	2.242058	2.161842	2.081452	2.002107	1.92471	1.84989	1.778059	1.709455	1.64
0.535292	0.522691	0.510217	0.497925	0.485858	0.474048	0.462522	0.451299	0.440391	0.429806	0.419548	0.409618	0.400014	0.390731	0.381764	0.373105	0.36
0.704314	0.690806	0.677256	0.663732	0.650288	0.636973	0.623828	0.610885	0.598172	0.585712	0.57352	0.561609	0.549989	0.538664	0.527639	0.516913	0.50
0.698171	0.662226	0.629313	0.599138	0.571427	0.54593	0.522424	0.500707	0.4806	0.461946	0.444604	0.428448	0.413368	0.399266	0.386054	0.373655	0.36
0.768156	0.732082	0.698607	0.667553	0.638738	0.611983	0.587116	0.563978	0.542418	0.522301	0.503502	0.48591	0.469421	0.453944	0.439395	0.425698	0.41
0.83699	0.801915	0.768874	0.737809	0.708636	0.681256	0.655562	0.631445	0.608799	0.587521	0.56751	0.548676	0.530932	0.514197	0.498398	0.483466	0.46
0.888814	0.855405	0.823525	0.793199	0.764414	0.737136	0.711312	0.68688	0.663772	0.641914	0.621236	0.601666	0.583137	0.565581	0.548937	0.533147	0.51
0.933131	0.901792	0.871527	0.842415	0.814499	0.787795	0.762296	0.737978	0.714809	0.692748	0.671749	0.651763	0.632741	0.614632	0.597387	0.58096	0.56
0.967122	0.937838	0.909275	0.881543	0.85472	0.828851	0.803963	0.780062	0.757142	0.735187	0.714172	0.694068	0.674841	0.656457	0.638879	0.62207	0.60
1.000172	0.973281	0.946783	0.920804	0.895444	0.870775	0.846847	0.823692	0.801329	0.779764	0.758993	0.739007	0.71979	0.701322	0.683579	0.666538	0.65
1.024805	1.000054	0.975462	0.95116	0.927255	0.903833	0.880957	0.858677	0.837026	0.816026	0.79569	0.776021	0.757017	0.738671	0.720972	0.703904	0.68
1.046436	1.023764	1.001067	0.978473	0.956091	0.93401	0.912304	0.891032	0.870237	0.849954	0.830207	0.811011	0.792376	0.774304	0.756795	0.739842	0.72
1.063672	1.042859	1.021889	1.000884	0.979949	0.959174	0.938634	0.918394	0.898503	0.879004	0.859929	0.841301	0.823137	0.80545	0.788245	0.771525	0.75
0.697691	0.661893	0.629156	0.599168	0.571644	0.546327	0.52299	0.50143	0.481467	0.462942	0.445716	0.429665	0.414678	0.400658	0.387519	0.375184	0.36
0.779025	0.742589	0.708819	0.677518	0.64849	0.621545	0.596505	0.573205	0.551493	0.531229	0.51229	0.49456	0.477937	0.462329	0.447651	0.433828	0.42
1.064215	1.040551	1.016946	0.993523	0.970385	0.947617	0.925286	0.903445	0.882133	0.861379	0.841203	0.821616	0.802622	0.784223	0.766411	0.749181	0.7
1.088157	1.066475	1.044696	1.022936	1.001297	0.979867	0.958718	0.937908	0.917487	0.897493	0.877953	0.858889	0.840317	0.822244	0.804675	0.787611	0.77
0.661608	0.627294	0.595965	0.567308	0.541039	0.516902	0.494674	0.474156	0.455171	0.437567	0.421207	0.405969	0.39175	0.378454	0.365997	0.354307	0.34
1.712326	1.710089	1.700494	1.683907	1.660934	1.632365	1.599101	1.562088	1.522256	1.480471	1.437508	1.394033	1.350597	1.307645	1.26552	1.22448	1.18
1.834568	1.831484	1.818297	1.795648	1.764582	1.726423	1.682631	1.634673	1.583923	1.531595	1.478709	1.426085	1.374356	1.323988	1.275306	1.228523	1.18
1.982655	1.978338	1.959951	1.928641	1.886232	1.834954	1.777158	1.715085	1.650703	1.585636	1.521147	1.458163	1.39733	1.339061	1.283589	1.231019	1.18
2.201077	2.194474	2.166538	2.119625	2.057349	1.983885	1.903326	1.819252	1.734513	1.651212	1.570782	1.494114	1.421692	1.35371	1.290165	1.230924	1.17
2.362611	2.359006	2.343572	2.316994	2.280393	2.235207	2.183044	2.12555	2.064296	2.000701	1.935987	1.871165	1.807038	1.744221	1.683161	1.624173	1.56
2.579832	2.574922	2.553964	2.518108	2.469207	2.409568	2.341689	2.268016	2.190775	2.111874	2.032858	1.954923	1.878952	1.805555	1.735129	1.667903	1.60
2.883582	2.87647	2.84625	2.795044	2.726186	2.643669	2.551594	2.453746	2.35334	2.252921	2.154379	2.059033	1.967733	1.880969	1.798962	1.721748	1.64
2.176723	2.174068	2.162672	2.142941	2.115553	2.081393	2.041482	1.996903	1.94873	1.897979	1.845571	1.79231	1.738872	1.685814	1.633575	1.582493	1.53
3.324072	3.322048	3.313321	3.298048	3.2765	3.249045	3.216138	3.178293	3.13607	3.09005	3.040818	2.988949	2.934989	2.879455	2.822816	2.7655	2.70
3.47249	3.470557	3.462215	3.447603	3.426957	3.400604	3.368944	3.332438	3.291586	3.246916	3.198964	3.148259	3.095315	3.040617	2.984618	2.927732	2.87
2.881183	2.879849	2.874089	2.863982	2.849666	2.831329	2.809208	2.783576	2.754735	2.723008	2.68873	2.652237	2.613862	2.573927	2.532742	2.490593	2.44
3.028589	3.027274	3.021597	3.011631	2.997502	2.979388	2.957505	2.932112	2.90349	2.871944	2.837792	2.801353	2.762949	2.72289	2.681477	2.638994	2.59
Barrier attenuation																
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	2
52.2	55.2	58.2	61.2	64.2	67.2	70.2	73.2	76.2	79.2	82.2	85.2	88.2	91.2	94.2	97.2	10
17.11206	17.10434	17.07125	17.01402	16.9347	16.8359	16.72057	16.59174	16.45232	16.30502	16.15221	15.99593	15.83786	15.67938	*1)	15.36535	15.
11.08291	11.00386	10.92417	10.84418	10.76419	10.68446	10.60521	10.52662	10.44885	10.37203	10.29627	10.22164	10.14823	10.07607	10.0052	9.935662	9.86
12.0239	11.95575	11.8863	11.81586	11.74469	11.67303	11.6011	11.5291	11.4572	11.38554	11.31427	11.2435	11.17332	11.10382	11.03507	10.96713	10.9
11.99304	11.80795	11.63126	11.4627	11.30192	11.14854	11.00217	10.86241	10.72888	10.60121	10.47905	10.36208	10.24997	10.14246	10.03925	9.940114	9.84
12.33224	12.16071	11.99523	11.83588	11.68259	11.53525	11.39368	11.25767	11.12698	11.00139	10.88065	10.76454	10.65282	10.54527	10.44168	10.34185	10.2
12.64187	12.48686	12.33559	12.1884	12.04548	11.90692	11.77275	11.64293	11.51738	11.39602	11.27871	11.16532	11.05572	10.94975	10.84728	10.74816	10.6
12.86123	12.72109	12.58301	12.44746	12.31476	12.18515	12.05879	11.93575	11.81607	11.69976	11.58678	11.47708	11.37059	11.26723	11.16692	11.06955	10.9
13.04041	12.91447	12.78928	12.66536	12.54311	12.42286	12.30483	12.18921	12.07612	11.96562	11.85776	11.75255	11.65	11.55006	11.45272	11.3579	11.2

Appendix D

Predicted Fixed Noise Source Impact

Scenario Daytime 1 Nighttime 1

NSR ID	NSR 1																																													
Floor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Elevation, mPD	37.8	40.8	43.8	46.8	49.8	52.8	55.8	58.8	61.8	64.8	67.8	70.8	73.8	76.8	79.8	82.8	85.8	88.8	91.8	94.8	97.8	100.8	103.8	106.8	109.8	112.8	115.8	118.8	121.8	124.8	127.8	130.8	133.8	136.8	139.8	142.8	145.8	148.8	151.8	154.8	157.8	160.8	163.8	166.8	169.8	172.8	175.8	178.8	181.8	184.8
SPL during daytime, dB(A)	54.51	54.52	54.52	54.53	54.52	54.52	54.93	63.73	63.72	63.71	63.70	63.85	63.83	63.81	63.78	63.75	63.73	63.69	63.65	63.61	63.59	63.54	63.49	63.44	63.38	63.32	63.26	63.19	63.14	63.07	63.00	62.93	62.86	62.78	62.71	62.63	62.55	62.47	62.39	62.31	62.23	62.14	62.06	61.97	61.89	61.80	61.71	61.63	61.54	61.45
SPL during nighttime dB(A)	39.88	39.88	39.88	39.88	39.87	39.87	47.05	47.04	47.03	47.02	47.01	47.00	46.98	46.96	46.93	46.90	46.87	46.84	46.80	46.76	46.72	46.68	46.63	46.58	46.53	46.48	46.43	46.37	46.90	46.83	46.77	46.70	46.64	46.57	46.50	46.43	46.36	46.28	46.21	46.14	46.06	45.99	45.91	45.84	45.76	45.69	45.61	45.53	45.46	45.38

NSR ID	NSR 2																																																	
Floor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40										
Elevation, mPD	39.6	42.6	45.6	48.6	51.6	54.6	57.6	60.6	63.6	66.6	69.6	72.6	75.6	78.6	81.6	84.6	87.6	90.6	93.6	96.6	99.6	102.6	105.6	108.6	111.6	114.6	117.6	120.6	123.6	126.6	129.6	132.6	135.6	138.6	141.6	144.6	147.6	150.6	153.6	156.6										
SPL during daytime, dB(A)	51.97	51.97	51.96	51.95	51.94	52.57	60.86	60.86	60.85	60.85	60.84	61.03	61.01	61.00	60.98	60.96	60.95	60.92	60.90	60.88	60.85	60.82	60.79	60.76	60.73	60.69	60.66	60.62	60.68	60.64	60.60	60.56	60.54	60.49	60.45	60.40	60.41	60.36	60.31	60.26										
SPL during nighttime dB(A)	38.96	38.96	38.96	38.96	38.95	46.34	46.34	46.33	46.32	46.31	46.30	46.28	46.26	46.24	46.22	46.19	46.16	46.13	46.10	46.07	46.03	45.99	45.95	45.91	45.86	45.82	45.77	45.72	48.00	47.97	47.93	47.89	48.20	48.16	48.12	48.07	48.03	47.98	47.93	47.89										

NSR ID	NSR 3			
Floor	1	2	3	4
Elevation, mPD	6.1	9.1	12.1	15.1
SPL during daytime, dB(A)	54.39	54.40	54.41	54.42
SPL during nighttime dB(A)	50.29	50.32	50.34	50.36

NSR ID	NSR 4				
Floor	1	2	3	4	5
Elevation, mPD	6.1	9.1	12.1	15.1	18.1
SPL during daytime, dB(A)	51.92	51.94	51.95	51.96	51.96
SPL during nighttime dB(A)	46.53	46.56	46.59	46.60	46.60

NSR ID	NSR 5			
Floor	1	2	3	4
Elevation, mPD	16.3	19.3	22.3	25.3
SPL during daytime, dB(A)	51.24	51.25	51.27	51.28
SPL during nighttime dB(A)	44.15	44.26	44.36	44.45

NSR ID	NSR 6																									
Floor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Elevation, mPD	5.1	8.1	11.1	14.1	17.1	20.1	23.1	26.1	29.1	32.1	35.1	38.1	41.1	44.1	47.1	50.1	53.1	56.1	59.1	62.1	65.1	68.1	71.1	74.1	77.1	80.1
SPL during daytime, dB(A)	51.08	51.09	51.10	51.11	51.12	51.13	51.13	51.14	51.14	51.14	51.14	51.13	51.13	59.84	59.84	59.84	59.84	59.84	59.84	59.84	59.83	59.83	59.82	59.81	60.08	60.07
SPL during nighttime dB(A)	45.30	45.30	45.30	45.30	45.30	45.29	45.29	45.28	45.28	45.27	45.27	45.26	45.25	54.43	54.43	54.43	54.43	54.43	54.43	54.43	54.43	54.43	54.43	54.43	54.79	54.79

NSR ID	NSR 7					
Floor	1	2	3	4	5	6
Elevation, mPD	6.7	9.7	12.7	15.7	18.7	21.7
SPL during daytime, dB(A)	49.99	50.01	50.03	50.05	50.07	50.08
SPL during nighttime dB(A)	42.33	42.40	42.48	42.55	42.62	42.69

NSR ID	NSR 8					
Floor	1	2	3	4	5	6
Elevation, mPD	6.7	9.7	12.7	15.7	18.7	21.7
SPL during daytime, dB(A)	51.16	51.19	51.21	51.24	51.26	51.29
SPL during nighttime dB(A)	43.71	43.83	43.94	44.05	44.15	44.25

NSR ID	NSR 9																																																	
Floor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36														
Elevation, mPD	20.8	23.8	26.8	29.8	32.8	35.8	38.8	41.8	44.8	47.8	50.8	53.8	56.8	59.8	62.8	65.8	68.8	71.8	74.8	77.8	80.8	83.8	86.8	89.8	92.8	95.8	98.8	101.8	104.8	107.8	110.8	113.8	116.8	119.8	122.8	125.8														
SPL during daytime, dB(A)	56.24	56.25	56.25	56.25	56.24	56.24	56.23	56.22	56.21	56.20	56.18	56.97	56.95	56.93	56.91	56.89	56.86	56.83	56.79	56.75	56.70	56.65	56.60	56.54	56.48	56.41	56.34	56.27	61.51	61.47	61.42	61.38	61.33	61.27	61.22	61.17														
SPL during nighttime dB(A)	44.04	44.08	44.13	44.17	44.20	44.23	44.26	44.28	44.29	44.30	44.31	51.82	51.81	51.80	51.77	51.74	51.70	51.65	51.59	51.52	51.45	51.37	51.29	51.19	51.10	51.00	50.89	50.78	50.67	50.55	50.43	50.31	50.19	50.06	49.93	49.81														

NSR ID	NSR 10
Floor	1
Elevation, mPD	6.1
SPL during daytime, dB(A)	56.04
SPL during nighttime dB(A)	47.85

NSR ID	NSR 11																																																	
Floor	3	5	6	7	8	9	10	11	12	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30	31	32	33	35	36	37	38																				
Elevation, mPD	23.2	26.2	29.2	32.2	35.2	38.2	41.2	44.2	47.2	50.2	53.2	56.2	59.2	62.2	65.2	68.2	71.2	74.2	77.2	80.2	83.2	86.2	89.2	92.2	95.2	98.2	101.2	104.2	107.2	110.2	113.2																				
SPL during daytime, dB(A)	56.34	56.33	56.32	56.30	56.28	56.26	56.23	56.20	56.17	56.14	56.11	56.07	56.03	55.99	55.94	55.90	55.85	55.80	55.74	55.69	55.63	55.57	55.51	55.44	55.37	55.30	55.22	55.15	55.07	54.99	54.91																				
SPL during nighttime dB(A)	42.74	42.74	42.74	42.74	42.73	42.73	42.72	42.71	42.69	42.66	42.63	42.59	42.54	42.49	42.43	42.36	42.29	42.22	42.14	42.07	41.99	41.91	41.83	41.75	41.68	41.60	41.52	41.45	41.37	41.29	41.22																				

NSR ID	NSR 12																																																	
Floor	3	5	6	7	8	9	10	11	12	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30	31	32	33	35	36	37	38																				
Elevation, mPD	22.2	25.2	28.2	31.2	34.2	37.2	40.2	43.2	46.2	49.2	52.2	55.2	58.2	61.2	64.2	67.2	70.2	73.2	76.2	79.2	82.2	85.2	88.2	91.2	94.2	97.2	100.2	103.2	106.2	109.2	112.2																				
SPL during daytime, dB(A)	56.82	56.83	56.83	56.83	56.83	56.82	56.81	56.79	56.77	56.75	56.73	56.70	56.66	56.63	56.59	56.54	56.49	56.44	56.38	56.32	56.26	56.19	56.12	56.05	55.97	55.89	55.81	55.72	55.63	55.54	55.45																				
SPL during nighttime dB(A)	42.94	42.96	42.98	42.99	43.01	43.02	43.04	43.04	43.04	43.02	42.99	42.95	42.89	42.81	42.73	42.61	42.50	42.39	42.26	42.13	42.00	41.87	41.74	41.60	41.47	41.35	41.22	41.10	40.98	40.86	40.74																				

NSR ID	NSR 13																																																	
Floor	3	5	6	7	8	9	10	11	12	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30	31	32	33	35	36	37	38																				
Elevation, mPD	23.2	26.2	29.2	32.2	35.2	38.2	41.2	44.2	47.2	50.2	53.2	56.2	59.2	62.2	65.2	68.2	71.2	74.2	77.2	80.2	83.2	86.2	89.2	92.2	95.2	98.2	101.2	104.2	107.2	110.2	113.2																				
SPL during daytime, dB(A)	57.35	57.39	57.42	57.44	57.46	57.47	57.48	57.48	57.48	57.47	57.46	57.44	57.42	57.39	57.35	57.31	57.27	57.22	57.16	57.10	57.03	56.96	56.89	56.80	56.72	56.63	56.54	56.44	56.34	56.24	56.13																				
SPL during nighttime dB(A)	41.60	41.62	41.63	41.65	41.66	41.67	41.68	41.69	41.69	41.69	41.69	41.69	41.68	41.67	41.66	41.64	41.63	41.61	41.58	41.56	41.53	41.50	41.46	41.43	41.39	41.35	41.31	41.27	41.22	41.18	41.13																				

Note: The highest predicted SPL values are highlighted in orange.

Scenario Daytime 2 Nighttime 1

| NSR ID | NSR 1 | | |

Scenario Daytime 3 Nighttime 1

NSR ID	NSR 1																																													
Floor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Elevation, mPD	37.8	40.8	43.8	46.8	49.8	52.8	55.8	58.8	61.8	64.8	67.8	70.8	73.8	76.8	79.8	82.8	85.8	88.8	91.8	94.8	97.8	100.8	103.8	106.8	109.8	112.8	115.8	118.8	121.8	124.8	127.8	130.8	133.8	136.8	139.8	142.8	145.8	148.8	151.8	154.8	157.8	160.8	163.8	166.8	169.8	172.8	175.8	178.8	181.8	184.8
SPL during daytime, dB(A)	54.53	54.54	54.54	54.55	54.54	54.54	55.11	63.75	63.74	63.73	63.72	63.88	63.86	63.83	63.81	63.77	63.75	63.72	63.68	63.63	63.61	63.56	63.51	63.46	63.40	63.34	63.28	63.22	63.16	63.10	63.03	62.96	62.88	62.81	62.73	62.65	62.58	62.50	62.41	62.33	62.25	62.17	62.08	62.00	61.91	61.83	61.74	61.65	61.56	61.48
SPL during nighttime dB(A)	39.88	39.88	39.88	39.88	39.87	39.87	47.05	47.04	47.03	47.02	47.01	47.00	46.98	46.96	46.93	46.90	46.87	46.84	46.80	46.76	46.72	46.68	46.63	46.58	46.53	46.48	46.43	46.37	46.90	46.83	46.77	46.70	46.64	46.57	46.50	46.43	46.36	46.28	46.21	46.14	46.06	45.99	45.91	45.84	45.76	45.69	45.61	45.53	45.46	45.38

NSR ID	NSR 2																																																	
Floor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40										
Elevation, mPD	39.6	42.6	45.6	48.6	51.6	54.6	57.6	60.6	63.6	66.6	69.6	72.6	75.6	78.6	81.6	84.6	87.6	90.6	93.6	96.6	99.6	102.6	105.6	108.6	111.6	114.6	117.6	120.6	123.6	126.6	129.6	132.6	135.6	138.6	141.6	144.6	147.6	150.6	153.6	156.6										
SPL during daytime, dB(A)	52.00	52.00	51.99	51.99	51.98	52.84	60.90	60.90	60.89	60.89	60.88	61.06	61.05	61.04	61.02	61.00	60.98	60.96	60.94	60.91	60.89	60.86	60.83	60.80	60.77	60.73	60.69	60.66	60.72	60.68	60.64	60.60	60.57	60.53	60.48	60.44	60.44	60.39	60.34	60.29										
SPL during nighttime dB(A)	38.96	38.96	38.96	38.96	38.95	46.34	46.34	46.33	46.32	46.31	46.30	46.28	46.26	46.24	46.22	46.19	46.16	46.13	46.10	46.07	46.03	45.99	45.95	45.91	45.86	45.82	45.77	45.72	48.00	47.97	47.93	47.89	48.20	48.16	48.12	48.07	48.03	47.98	47.93	47.89										

NSR ID	NSR 3			
Floor	1	2	3	4
Elevation, mPD	6.1	9.1	12.1	15.1
SPL during daytime, dB(A)	54.46	54.48	54.49	54.50
SPL during nighttime dB(A)	50.29	50.32	50.34	50.36

NSR ID	NSR 4				
Floor	1	2	3	4	5
Elevation, mPD	6.1	9.1	12.1	15.1	18.1
SPL during daytime, dB(A)	52.01	52.03	52.05	52.06	52.06
SPL during nighttime dB(A)	46.53	46.56	46.59	46.60	46.60

NSR ID	NSR 5			
Floor	1	2	3	4
Elevation, mPD	16.3	19.3	22.3	25.3
SPL during daytime, dB(A)	51.43	51.46	51.48	51.50
SPL during nighttime dB(A)	44.15	44.26	44.36	44.45

NSR ID	NSR 6																									
Floor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Elevation, mPD	5.1	8.1	11.1	14.1	17.1	20.1	23.1	26.1	29.1	32.1	35.1	38.1	41.1	44.1	47.1	50.1	53.1	56.1	59.1	62.1	65.1	68.1	71.1	74.1	77.1	80.1
SPL during daytime, dB(A)	51.37	51.38	51.39	51.40	51.41	51.42	51.42	51.42	51.43	51.43	51.42	51.42	51.42	60.22	60.23	60.23	60.23	60.23	60.22	60.22	60.22	60.21	60.21	60.20	60.44	60.43
SPL during nighttime dB(A)	45.30	45.30	45.30	45.30	45.30	45.29	45.29	45.28	45.28	45.27	45.27	45.26	45.25	54.43	54.43	54.43	54.43	54.43	54.43	54.43	54.43	54.43	54.43	54.43	54.79	54.79

NSR ID	NSR 7					
Floor	1	2	3	4	5	6
Elevation, mPD	6.7	9.7	12.7	15.7	18.7	21.7
SPL during daytime, dB(A)	50.15	50.18	50.20	50.22	50.24	50.26
SPL during nighttime dB(A)	42.33	42.40	42.48	42.55	42.62	42.69

NSR ID	NSR 8					
Floor	1	2	3	4	5	6
Elevation, mPD	6.7	9.7	12.7	15.7	18.7	21.7
SPL during daytime, dB(A)	51.33	51.36	51.39	51.43	51.46	51.48
SPL during nighttime dB(A)	43.71	43.83	43.94	44.05	44.15	44.25

NSR ID	NSR 9																																																	
Floor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36														
Elevation, mPD	20.8	23.8	26.8	29.8	32.8	35.8	38.8	41.8	44.8	47.8	50.8	53.8	56.8	59.8	62.8	65.8	68.8	71.8	74.8	77.8	80.8	83.8	86.8	89.8	92.8	95.8	98.8	101.8	104.8	107.8	110.8	113.8	116.8	119.8	122.8	125.8														
SPL during daytime, dB(A)	56.28	56.29	56.29	56.29	56.29	56.28	56.28	56.27	56.26	56.25	56.23	57.35	57.34	57.32	57.30	57.27	57.24	57.21	57.17	57.12	57.07	57.02	56.96	56.90	56.83	56.77	56.69	56.62	61.62	61.57	61.52	61.47	61.42	61.37	61.31	61.26														
SPL during nighttime dB(A)	44.04	44.08	44.13	44.17	44.20	44.23	44.26	44.28	44.29	44.30	44.31	51.82	51.81	51.80	51.77	51.74	51.70	51.65	51.59	51.52	51.45	51.37	51.29	51.19	51.10	51.00	50.89	50.78	50.67	50.55	50.43	50.31	50.19	50.06	49.93	49.81														

NSR ID	NSR 10
Floor	1
Elevation, mPD	6.1
SPL during daytime, dB(A)	56.13
SPL during nighttime dB(A)	47.85

NSR ID	NSR 11																																																	
Floor	3	5	6	7	8	9	10	11	12	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30	31	32	33	35	36	37	38																				
Elevation, mPD	23.2	26.2	29.2	32.2	35.2	38.2	41.2	44.2	47.2	50.2	53.2	56.2	59.2	62.2	65.2	68.2	71.2	74.2	77.2	80.2	83.2	86.2	89.2	92.2	95.2	98.2	101.2	104.2	107.2	110.2	113.2																				
SPL during daytime, dB(A)	56.35	56.35	56.33	56.32	56.30	56.27	56.25	56.22	56.19	56.16	56.12	56.08	56.04	56.00	55.96	55.91	55.86	55.81	55.76	55.70	55.64	55.58	55.52	55.45	55.38	55.31	55.24	55.16	55.08	55.00	54.92																				
SPL during nighttime dB(A)	42.74	42.74	42.74	42.74	42.73	42.73	42.72	42.71	42.69	42.66	42.63	42.59	42.54	42.49	42.43	42.36	42.29	42.22	42.14	42.07	41.99	41.91	41.83	41.75	41.68	41.60	41.52	41.45	41.37	41.29	41.22																				

NSR ID	NSR 12																																																	
Floor	3	5	6	7	8	9	10	11	12	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30	31	32	33	35	36	37	38																				
Elevation, mPD	23.2	26.2	29.2	32.2	35.2	38.2	41.2	44.2	47.2	50.2	53.2	56.2	59.2	62.2	65.2	68.2	71.2	74.2	77.2	80.2	83.2	86.2	89.2	92.2	95.2	98.2	101.2	104.2	107.2	110.2	113.2																				
SPL during daytime, dB(A)	56.83	56.84	56.85	56.85	56.85	56.84	56.83	56.81	56.79	56.77	56.75	56.72	56.68	56.65	56.61	56.56	56.51	56.46	56.40	56.34	56.28	56.21	56.14	56.06	55.99	55.91	55.82	55.74	55.65	55.56	55.47																				
SPL during nighttime dB(A)	42.94	42.96	42.98	42.99	43.01	43.02	43.04	43.04	43.04	43.02	42.99	42.95	42.89	42.81	42.73	42.61	42.50	42.39	42.26	42.13	42.00	41.87	41.74	41.60	41.47	41.35	41.22	41.10	40.98	40.86	40.74																				

NSR ID	NSR 13																																																	
Floor	3	5	6	7	8	9	10	11	12	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30	31	32	33	35	36	37	38																				
Elevation, mPD	23.2	26.2	29.2	32.2	35.2	38.2	41.2	44.2	47.2	50.2	53.2	56.2	59.2	62.2	65.2	68.2	71.2	74.2	77.2	80.2	83.2	86.2	89.2	92.2	95.2	98.2	101.2	104.2	107.2	110.2	113.2																				
SPL during daytime, dB(A)	57.36	57.40	57.42	57.45	57.47	57.48	57.49	57.49	57.49	57.48	57.47	57.45	57.43	57.40	57.36	57.32	57.28	57.23	57.17	57.11	57.04	56.97	56.90	56.82	56.73	56.64	56.55	56.45	56.35	56.25	56.15																				
SPL during nighttime dB(A)	41.60	41.62	41.63	41.65	41.66	41.67	41.68	41.69	41.69	41.69	41.69	41.69	41.68	41.67	41.66	41.64	41.63	41.61	41.58	41.56	41.53	41.50	41.46	41.43	41.39	41.35	41.31	41.27	41.22	41.18	41.13																				

Note: The highest predicted SPL values are highlighted in orange.

Real impact, made together.

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