MOTT MACDONALD

Tai Shue Wan Development at Ocean Park

Noise Audit Report

August 2021

Ocean Park Corporation

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Tai Shue Wan Development at Ocean Park

Noise Audit Report

August 2021

Mott MacDonald Hong Kong Limited
registered in Hong Kong no. 236497

Pursuant to Condition 2.14 of Environmental Permit No. EP-487/2014/A, this Noise Audit Report has been reviewed and certified by the Environmental Team Leader (ETL) and verified by the Independent Environmental Checker (IEC).

Certified by:

Gary Chow
Environmental Team Leader (ETL)
Mott MacDonald Hong Kong Limited

Date: 26 Aug 2021

Verified by:

Sam Tsoi
Independent Environmental Checker (IEC)
Ove Arup & Partners Hong Kong Limited

Date: 31 August 21

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	Jul 2021	Various	Henry Leung	Gary Chow	1st Submission
B	Aug 2021	Various	Henry Leung	Gary Chow	2nd Submission

Document reference: 415089 | 0404 | B

Information class: Standard

Contents

List of Tables

List of Figures

1 Introduction

1.1 Background

1.1.1 Under the Environmental Impact Assessment (EIA) Ordinance, the EIA Report and the Environmental Monitoring and Audit (EM&A) Manual (Register No.: AEIAR-184/2014) prepared for the "Tai Shue Wan Development at Ocean Park" (the Project) have been approved by the Environmental Protection Department (EPD) on 27 August 2014. The Environmental Permit (EP) has been subject to variation and the current Permit No. is EP-487/2014/A issued on 10 January 2018.

1.1.2 As stipulated in the Condition 2.14 of the current EP, the Permit Holder shall, no later than one month before commencement of operation of the Project, carry out noise audit work for the fixed noise sources including open air entertainment activities of the Project in accordance with standard acoustical principles and practices, and deposit with the Director four hard copies and one electronic copy of a Noise Audit Report showing the locations of the noise sources, implemented mitigation measures and the noise audit results complying with the maximum sound power levels specified in the approved EIA report or showing that based on the noise audit results, the sound pressure level criteria at all the representative Noise Sensitive Receivers (NSRs) are complied with.

1.1.3 Mott MacDonald Hong Kong Limited (MMHK) has been commissioned by the Ocean Park Corporation to prepare and submit the Noise Audit Report to meet Condition 2.14 of the EP. The location of the Project is shown in **Figure 1.1**.

1.1.4 The Noise Audit Report has been certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC) as conforming to the information and recommendations contained in the approved EIA report before submission to the Director of Environmental Protection (DEP).

1.2 Objectives of the Noise Audit Report

1.2.1 The objective of establishing the Noise Audit Report is to demonstrate that the noise audit results complying with the maximum sound power levels specified in the approved EIA report or showing that based on the noise audit results, the sound pressure level criteria at all the representative NSRs are complied with in accordance with the updated locations of the noise sources and mitigation measures.

1.2.2 Since the types and locations of noise sources are substantially different from that in the approved EIA Report, the maximum sound power levels cannot be comparable. As such, the noise levels and all the representative NSRs are assessed based on the noise audits results comparing against the relevant fixed noise criteria in the approved EIA report.

1.2.3 The Noise Audit Report shall contain:

a. The updated information of all fixed noise sources of the Project from the Ocean Park Corporation (including but not limited to open air entertainment activities) and implemented noise mitigation measures; and
b. Updated prediction of fixed noise levels at representative NSRs in accordance with the updated information and noise mitigation measures in place.

2 Updated Information Based on the Latest Design

2.1 Latest Building Layout Plan and Information of Fixed Noise Sources

2.1.1 The building footprint and locations of fixed noise sources have been changed from the approved EIA report. The latest detailed information of all fixed noise sources of the Project was provided by the Ocean Park Corporation. A plan view of the development with locations of the identified fixed noise sources are shown in **Figure 2.1**.

2.2 Noise Mitigation Measures

Fixed Plant Noise

2.2.1 As recommended in the approved EIA report, the following noise mitigation measures have been adopted during design stage for the fixed plant of the Project:

- choose quiet plant such as those which have been effectively silenced;
- include noise levels specification when ordering new plant (including chiller and E&M equipment);
- locate fixed plant / louvre away from any NSRs as far as practicable;
- locate fixed plant in walled plant rooms or in specially designed enclosures;
- locate noisy machine in a basement or a completely separate building;
- install direct noise mitigation measures including silencers, acoustic louvres and acoustic enclosure where necessary; and
- develop and implement a regularly scheduled plant maintenance programme so that equipment is properly operated and serviced in order to maintain a controlled level of noise.

Open Air Entertainment Noise

2.2.2 As recommended in the approved EIA report, the following measures have been adopted during design stage for the Public Address (PA) system / loudspeaker of the Project:

- use small clusters of small power loudspeakers rather than a few large power loudspeakers; and
- loudspeakers pointed away from nearby NSRs as far as practicable.

2.2.3 As confirmed by the Ocean Park Corporation, all the above-mentioned noise mitigation measures for fixed plant noise and open air entertainment noise as recommended in the approved EIA report has been implemented in the proposed development.

3 Details of Noise Measurement

3.1 Measurement Date and Time

3.1.1 Noise measurement in the form L_{eq} level was conducted during daytime period on normal weekday at the project area. Details of the noise measurement date and time are shown in **Table 3-1**.

Table 3-1 Details of Noise Measurement

Measurement Location	Date	Measurement Period	Weather Condition
Within Project Area	2 July 2021	10:00 – 17:15	Cloudy

3.2 Measurement Equipment

3.2.1 Noise measurement was performed using sound level meter at each designated measurement station. The sound level meter deployed comply with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was used to check the sound level meter by a known sound pressure level for field measurement. Details of equipment used in the Measurement period are given in **Table 3-2**.

Table 3-2 Noise Measurement Equipment

Equipment	Brand and Model	Last Calibration Date
Integrated Sound Level Meter	Rion NL-52 (Serial No. 00643039)	4 June 2021
Acoustic Calibrator	LARSON DAVIS CAL200 (Serial No. 16172)	21 November 2020

3.2.2 Prior to and after each series of noise measurements, the meter was calibrated using the acoustic calibrator. If the difference in the calibration level before and after measurement was more than 1.0 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

3.2.3 The sound level meter and calibrator were sent to the supplier or laboratory accredited under Hong Kong Laboratory Accreditation Scheme (HOKLAS) to check and calibrate at yearly intervals. The calibration certificates are shown in **Appendix A**.

3.3 Measurement Methodology

3.3.1 Noise measurements to obtain the noise levels of the fixed plants, PA systems and loudspeakers were carried out by qualified persons possessing at least 7 years of noise control experience and a corporate member of Hong Kong Institute of Acoustics or equivalent. The measurement method can be summarised as follows:

- The microphone was positioned at the perpendicular distance d away from the centre of the intake / exhaust louvre / noise source, where d is at least two times the largest dimension b of the louvre or plant and rounded up to integer, i.e.: d≧2b.
- The microphone was pointing toward the centre of the louvre / noise source and three measurements with 1-minute sampling period were taken when the noise source was switched ON under typical operating conditions as agreed by the operator. The highest measured noise level of the three sets measurement is adopted for conservative approach.
- Background noise have been included in the noise measurement for conservative consideration.
- For the PA system / loudspeaker, soundtrack (with highest volume section) adopted in typical operating conditions, as agreed with the operator, was repeated in approx. 1-minute interval during the measurements so that the worst-case scenario has been captured.
- For the PA system / loudspeaker, based on the site observation, the units selected for noise measurement can represent the other units within that type of equipment.

3.4 Summary of Noise Measurement Results

3.4.1 Summary of the on-site noise measurement results are presented in **Table 3-3**. Photographs showing the examples of noise measurement for the fixed noise sources are shown in **Appendix B**. Details of the noise measurement results are shown in **Appendix C**.

Table 3-3 Summary of Measured Noise Levels for Fixed Noise Sources

Fixed Noise Sources	ID	Measurement Distance (m)	Maximum Measured SPL, dB(A), $L_{eq\ (1\ min)}$
Emergency Generator Set (Intake)	N1-1*, N2-1	6	76.2
Emergency Generator Set (Discharge)	N1-2*, N2-2	12	58.9
Electricity Substation (High Voltage)	N3^, N4	6	62.5
Cooling Tower (Discharge)	N5-1-1 to N5-6-1	5	82.5 – 87.0
Cooling Tower (Intake)	N5-1-2 to N5-6-2	6	76.2 – 78.7
Chiller Room	N6	6	71.4
Low Voltage Substation	N7	5	69.1
Pump Room and Wave Generator	N8	6	69.7
PA system / loudspeakers	A1 to A6	2	70.5
PA system / loudspeakers	B1 to B4	2	72.4
PA system / loudspeakers	C1 to C24	3	75.6
PA system / loudspeakers	D1 to D4	2	74.4
PA system / loudspeakers	E1 to E8	2	73.5
PA system / loudspeakers	F1 to F3	4	74.2
PA system / loudspeakers	G1 to G2	2	73.8
PA system / loudspeakers	H1 to H10	2	75.0
PA system / loudspeakers	I1 to I7	2	74.3
PA system / loudspeakers	J1 to J7	2	71.8
PA system / loudspeakers	K1 to K4	2	75.5
PA system / loudspeakers	L1 to L3	2	77.4

Fixed Noise Sources	ID	Measurement Distance (m)	Maximum Measured SPL, dB(A), $L_{eq\ (1\ min)}$
PA system / loudspeakers	M1 to M7	2	68.5
PA system / loudspeakers	N1 to N3	2	69.0
PA system / loudspeakers	O1 to O3	2	69.6
PA system / loudspeakers	P1 to P5	2	77.6
PA system / loudspeakers	Q1 to Q2	3	75.8
PA system / loudspeakers	R1 to R2	2	77.6
PA system / loudspeakers	S1 to S3	2	79.2
PA system / loudspeakers	T1 to T4	2	75.5
PA system / loudspeakers	U1 to U16	3	79.7
PA system / loudspeakers	V1 to V8	2	74.9
PA system / loudspeakers	W1 to W3	2	67.8
PA system / loudspeakers	X1 to X3	2	76.7
PA system / loudspeakers	Y1 to Y4	2	72.4
PA system / loudspeakers	Z1 to Z4	2	76.4

Remarks:
(*) Since the emergency generator set N1 cannot be operated during the noise measurement, the measured noise levels at a similar emergency generator set N2 were adopted in the fixed noise impact assessment.
(^) Since the electricity substation N3 cannot be operated during the noise measurement, the measured noise levels at a similar electricity substation N4 were adopted in the fixed noise impact assessment.

3.4.2 The directivity characteristic of the identified major fixed plants was not obvious by the site observation. No impulsive and intermittency characteristics of the identified fixed noise sources were observed during the noise measurements. Since all identified fixed noise sources are outside 300m from all representative NSRs, tonality characteristic at the NSRs is expected insignificant and hence no correction for tonality is applied in this study.

4 Fixed Noise Impact Assessment

4.1 Identification of Noise Sensitive Receivers

4.1.1 Existing, planned/committed noise sensitive developments and relevant uses on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans, Layout Plans and other relevant published land use plans, including plans and drawings published by Lands Department were also reviewed. There are no NSRs (rely on opened windows for ventilation) in accordance with Annex 13 of the EIAO-TM within the 300 m assessment area. In consistent with the approved EIA report, for the purpose of noise assessment, NSRs over 300m from the Project have been included in noise impact assessment in this study.

4.1.2 The assessment points identified in the approved EIA report for fixed noise impact assessment remain valid as no new representative NSRs are identified. The assessment points for fixed noise impact assessment are shown in **Figure 3.1** and summarized in **Table 4-1** below. Photographs of the representative NSRs are shown in **Appendix B**.

Table 4-1 Representative Noise Sensitive Receivers

NSR ID	Description	Existing / Planned	Land Use	No. of Stories	Area Sensitivity Rating*
VSA	Victoria Shanghai Academy	Existing	Residential	7	C
HKJCC	Hong Kong Juvenile Care Centre	Existing	Residential	4	B

Notes:
(*) NSR "VSA" is within 100m of a zone designated as "Industrial" and NSR "HKJCC" is between 100 m and 250 m from "Industrial" zone. The Area Sensitivity Ratings assumed in this report are only indicative and they are used for assessment only. It shall not prejudice the Authority's decision on enforcement based on contemporary conditions.
The new hotel near the Tai Shue Wan Development have been installed with sealed glazing and provided with central air-conditioning, the use does not rely on opened windows for ventilation and adverse noise impact is not expected. As a result, no assessment point is proposed for the hotel under the fixed noise impact assessment.

4.2 Fixed Noise Criteria

4.2.1 As stipulated in Annex 5 of the EIAO-TM, the noise standards for planning fixed noise source are (a) 5 dB(A) below the appropriate ANL as stipulated in the IND-TM, or (b) the prevailing background noise levels (for quiet areas with level 5 dB(A) below the ANL).

4.2.2 Further to review of the existing environment in the vicinity of the representative NSRs by site observation, the existing noise environment in the approved EIA report remain unchanged. Hence, the fixed noise criteria stated in Section 5.2 of the approved EIA report remain applicable as follows: -

Table 4-2 Noise Criteria for Fixed Noise Sources

NSR ID	Description	Time Period	Area Sensitivity Rating	ANL-5, dB(A)	Background Noise Level, dB(A)^	Fixed Noise Criteria
VSA	Victoria Shanghai Academy	Daytime (0700 to 1900)	C	65	55	55
HKJCC	Hong Kong Juvenile Care Centre	Daytime and Evening (0700 to 2300)	B	60	50 - 53	50

Notes:
(^) Background noise measurement result refers to the approved TSW EIA report Table 5.5.

4.3 Assessment Methodology

4.3.1 The noise levels at representative NSRs from the fixed noise sources of the Project are predicted from the on-site noise measurement results based on basic acoustics equation and compared against the relevant fixed noise criteria in the approved EIA report.

4.3.2 A screening correction of -10dB(A) has been applied (as in the approved EIA report) where the representative NSRs are being screened with no direct line of sight by buildings or natural terrains.

4.3.3 A façade correction of +3dB(A) has been considered (as in the approved EIA report) at the representative NSRs in order to account for the façade reflection effect.

4.3.4 As mentioned in **Section 3.4.2**, no correction for tonality, impulsiveness and intermittency is deemed necessary in the study.

4.3.5 The shortest horizontal distances between the representative NSRs and the noise sources have been adopted for the fixed noise impact assessment for conservative approach.

4.3.6 Cumulative noise impact from outdoor E&M facility (i.e. cooling towers) of nearby new hotel and special events show / attractions at Ocean Park have been considered in the fixed noise impact assessment. Sound pressure levels of the cooling towers of nearby new hotel are provided by Ocean Park Corporation as shown in **Appendix D**. Sound power levels of the special events show / attractions at Ocean Park are referred to the approved EIA report.

4.4 Evaluation of Noise Impacts

4.4.1 With the measured noise levels of the noise sources of this Project and noise data of the concurrent projects, the predicted cumulative fixed noise levels at the representative NSRs are summarized in **Table 4-3** below. Detailed calculations please refer to **Appendix E**.

Table 4-3 Predicted Fixed Noise Levels at Representative Noise Sensitive Receivers

NSR ID	Predicted Noise Levels at Representative NSRs, dB(A)					Noise Criteria, dB(A)	Compliance? (Y/N)
	Fixed Plant Noise Level (1)	Entertainment Noise level from Loudspeaker (2)	Noise from nearby New Hotel (3)	Noise from Concurrent Special Events (The Summit) (4)	Cumulative Noise Level (5) = (1) + (2) + (3) + (4)		
VSA	44.5	43.8	27.5	36.3	48	55	Y
HKJCC	44.5	44.0	26.9	36.8	48	50	Y

4.4.2 Based on the fixed noise impact assessment results, the predicted cumulative fixed noise levels at all representative NSRs are complied with the relevant fixed noise criteria. Therefore, adverse noise impact to nearby NSRs due to operation of the proposed development is not anticipated.

5 Conclusion

5.1.1 The fixed noise impact assessment has been conducted based on the updated information and on-site noise measurement results. The recommended noise mitigation measures as mentioned in the approved EIA report have been adopted for the fixed noise sources of the Project to minimize the fixed noise impact. Based on the fixed noise impact assessment results, the predicted cumulative fixed noise levels at all representative NSRs are complied with the relevant fixed noise criteria. Therefore, adverse noise impact to nearby NSRs due to operation of the proposed development is not anticipated.

Appendices

Appendix A Calibration Certificates

輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C213254
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC21-1006) Date of Receipt / 收件日期 : 21 May 2021

Description / 儀器名稱	:	Sound Level Meter
Manufacturer / 製造商	:	Rion
Model No. / 型號	:	NL-52
Serial No. / 編號	:	00643039
Supplied By / 委託者	:	Envirotech Services Co. Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun, New Territories, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 4 June 2021

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification. (after adjustment)
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試 : Cheuk
K P Cheuk
Project Engineer

Certified By 核證 :
K C Lee
Engineer

Date of Issue 簽發日期 : 7 June 2021

Certificate of Calibration
校正證書

Certificate No. : C213254
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C210084
CL281	Multifunction Acoustic Calibrator	AV210017

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	* 91.7	± 1.1

* Out of IEC 61672 Class 1 Spec.

6.1.1.2 After Adjustment

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	94.0	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L_A	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

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6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.3

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_A	A	Fast	94.00	63 Hz	67.7	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.6
					4 kHz	95.0	+1.0 ± 1.6
					8 kHz	92.9	-1.1 (+2.1 ; -3.1)
					16 kHz	86.0	-6.6 (+3.5 ; -17.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_C	C	Fast	94.00	63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.6
					4 kHz	93.2	-0.8 ± 1.6
					8 kHz	91.0	-3.0 (+2.1 ; -3.1)
					16 kHz	84.1	-8.5 (+3.5 ; -17.0)

輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C213254
證書編號

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 10990

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	: 63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	16 kHz	: ± 0.70 dB
104 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	: 1 kHz	: ± 0.10 dB (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C206427
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC20-2353) Date of Receipt / 收件日期 : 3 November 2020

Description / 儀器名稱	:	Precision Acoustic Calibrator
Manufacturer / 製造商	:	LARSON DAVIS
Model No. / 型號	:	CAL200
Serial No. / 編號	:	16172
Supplied By / 委託者	:	Envirotech Services Co. Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun, New Territories, Hong Kong

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (50 ± 25)%
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 21 November 2020

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試 : K C Lee
Engineer

Certified By 核證 : H C Chan
Engineer

Date of Issue 簽發日期 : 24 November 2020

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration & Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C206427
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C203952
CL281	Multifunction Acoustic Calibrator	CDK1806821
TST150A	Measuring Amplifier	C201309

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.9	± 0.2	± 0.2
114 dB, 1 kHz	113.9		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000	1 kHz ± 1 %	± 1

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :
Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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輝創工程有限公司 - 校正及檢測實驗所
c/o 香港新界屯門興安里一號四樓
Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Appendix B Photographs of Noise Measurement / Representative NSRs

Appendix B – Photographs of Noise Measurement / Representative Noise Sensitive Receivers

Major Fixed Plants

N2-1*

N2-2*

N4^

N5 (Cooling Tower Discharge)

Remark:

(*) Since the emergency generator set N1 cannot be operated during the noise measurement, the measured noise levels at a similar emergency generator set N2 were adopted in the fixed noise impact assessment.

(^) Since the electricity substation N3 cannot be operated during the noise measurement, the measured noise levels at a similar electricity substation N4 were adopted in the fixed noise impact assessment.

Appendix B – Photographs of Noise Measurement / Representative Noise Sensitive Receivers

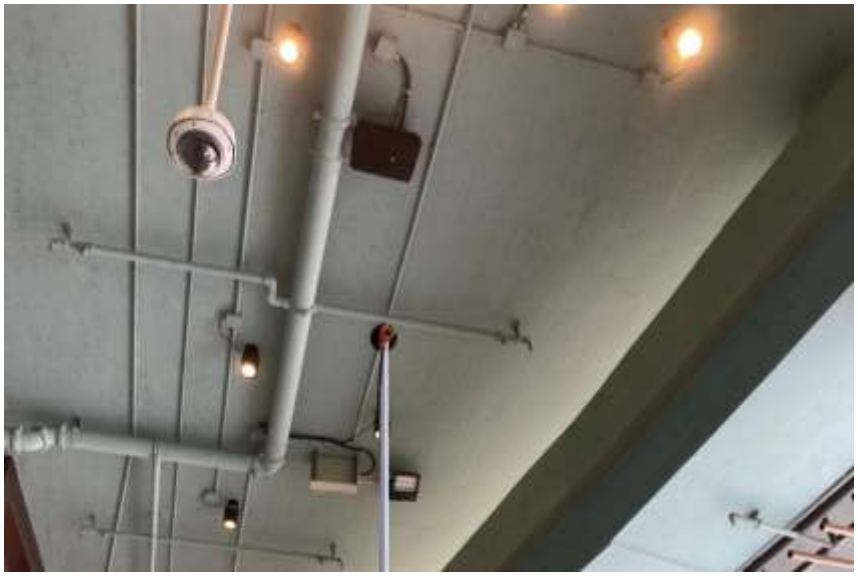
N5 (Cooling Tower Intake) 	N6 
N7 	N8 

Appendix B – Photographs of Noise Measurement / Representative Noise Sensitive Receivers

PA System / Loudspeaker

Loudspeaker Type A 	Loudspeaker Type B 
Loudspeaker Type C 	Loudspeaker Type D 

Appendix B – Photographs of Noise Measurement / Representative Noise Sensitive Receivers

Loudspeaker Type E 	Loudspeaker Type F 
Loudspeaker Type G 	Loudspeaker Type H 

Appendix B – Photographs of Noise Measurement / Representative Noise Sensitive Receivers

Loudspeaker Type I 	Loudspeaker Type J 
Loudspeaker Type K 	Loudspeaker Type L 

Appendix B – Photographs of Noise Measurement / Representative Noise Sensitive Receivers

Loudspeaker Type M 	Loudspeaker Type N 
Loudspeaker Type O 	Loudspeaker Type P 

Appendix B – Photographs of Noise Measurement / Representative Noise Sensitive Receivers

Loudspeaker Type Q 	Loudspeaker Type R 
Loudspeaker Type S 	Loudspeaker Type T 

Appendix B – Photographs of Noise Measurement / Representative Noise Sensitive Receivers

Loudspeaker Type U 	Loudspeaker Type V 
Loudspeaker Type W 	Loudspeaker Type X 

Appendix B – Photographs of Noise Measurement / Representative Noise Sensitive Receivers

Loudspeaker Type Y	Loudspeaker Type Z
	

Appendix B – Photographs of Noise Measurement / Representative Noise Sensitive Receivers

Representative Noise Sensitive Receivers

Victoria Shanghai Academy (VSA)	Hong Kong Juvenile Care Centre (HKJCC)
	

Appendix C Noise Measurement Results

PA System / Loudspeaker

Source ID	Measurement Distance (m)	Measured SPL, dB(A)			Max. Measured SPL, dB(A)
		$L_{eq, 1\ min}$	$L_{eq, 1\ min}$	$L_{eq, 1\ min}$	
A1	2	70.5	70.2	68.6	70.5
A2	2	70.5	70.2	68.6	70.5
A3	2	70.5	70.2	68.6	70.5
A4	2	70.5	70.2	68.6	70.5
A5	2	70.5	70.2	68.6	70.5
A6	2	70.5	70.2	68.6	70.5
B1	2	71.8	72.4	71	72.4
B2	2	71.8	72.4	71	72.4
B3	2	71.8	72.4	71	72.4
B4	2	71.8	72.4	71	72.4
C1	3	75	72.7	75.6	75.6
C2	3	75	72.7	75.6	75.6
C3	3	75	72.7	75.6	75.6
C4	3	75	72.7	75.6	75.6
C5	3	75	72.7	75.6	75.6
C6	3	75	72.7	75.6	75.6
C7	3	75	72.7	75.6	75.6
C8	3	75	72.7	75.6	75.6
C9	3	75	72.7	75.6	75.6
C10	3	75	72.7	75.6	75.6
C11	3	75	72.7	75.6	75.6
C12	3	75	72.7	75.6	75.6
C13	3	75	72.7	75.6	75.6
C14	3	75	72.7	75.6	75.6
C15	3	75	72.7	75.6	75.6
C16	3	75	72.7	75.6	75.6
C17	3	75	72.7	75.6	75.6
C18	3	75	72.7	75.6	75.6
C19	3	75	72.7	75.6	75.6
C20	3	75	72.7	75.6	75.6
C21	3	75	72.7	75.6	75.6
C22	3	75	72.7	75.6	75.6
C23	3	75	72.7	75.6	75.6
C24	3	75	72.7	75.6	75.6
D1	2	72.5	74.2	74.4	74.4
D2	2	72.5	74.2	74.4	74.4
D3	2	72.5	74.2	74.4	74.4
D4	2	72.5	74.2	74.4	74.4
E1	2	73.2	72.6	73.5	73.5
E2	2	73.2	72.6	73.5	73.5
E3	2	73.2	72.6	73.5	73.5
E4	2	73.2	72.6	73.5	73.5
E5	2	73.2	72.6	73.5	73.5
E6	2	73.2	72.6	73.5	73.5
E7	2	73.2	72.6	73.5	73.5
E8	2	73.2	72.6	73.5	73.5
F1	4	74.2	74.2	72.2	74.2
F2	4	74.2	74.2	72.2	74.2
F3	4	74.2	74.2	72.2	74.2
G1	2	73	73.8	72.1	73.8
G2	2	73	73.8	72.1	73.8
H1	2	74.8	72.2	75	75
H2	2	74.8	72.2	75	75
H3	2	74.8	72.2	75	75
H4	2	74.8	72.2	75	75
H5	2	74.8	72.2	75	75
H6	2	74.8	72.2	75	75
H7	2	74.8	72.2	75	75
H8	2	74.8	72.2	75	75
H9	2	74.8	72.2	75	75
H10	2	74.8	72.2	75	75
I1	2	73.9	74.3	71.9	74.3
I2	2	73.9	74.3	71.9	74.3
I3	2	73.9	74.3	71.9	74.3
I4	2	73.9	74.3	71.9	74.3
I5	2	73.9	74.3	71.9	74.3
I6	2	73.9	74.3	71.9	74.3
I7	2	73.9	74.3	71.9	74.3
J1	2	70.9	71.2	71.8	71.8
J2	2	70.9	71.2	71.8	71.8
J3	2	70.9	71.2	71.8	71.8
J4	2	70.9	71.2	71.8	71.8
J5	2	70.9	71.2	71.8	71.8
J6	2	70.9	71.2	71.8	71.8
J7	2	70.9	71.2	71.8	71.8
K1	2	75.2	75.5	74.1	75.5
K2	2	75.2	75.5	74.1	75.5
K3	2	75.2	75.5	74.1	75.5
K4	2	75.2	75.5	74.1	75.5
L1	2	75.9	76.8	77.4	77.4
L2	2	75.9	76.8	77.4	77.4
L3	2	75.9	76.8	77.4	77.4
M1	2	68.5	67.5	68.5	68.5
M2	2	68.5	67.5	68.5	68.5
M3	2	68.5	67.5	68.5	68.5
M4	2	68.5	67.5	68.5	68.5
M5	2	68.5	67.5	68.5	68.5
M6	2	68.5	67.5	68.5	68.5
M7	2	68.5	67.5	68.5	68.5

Major Fixed Plants

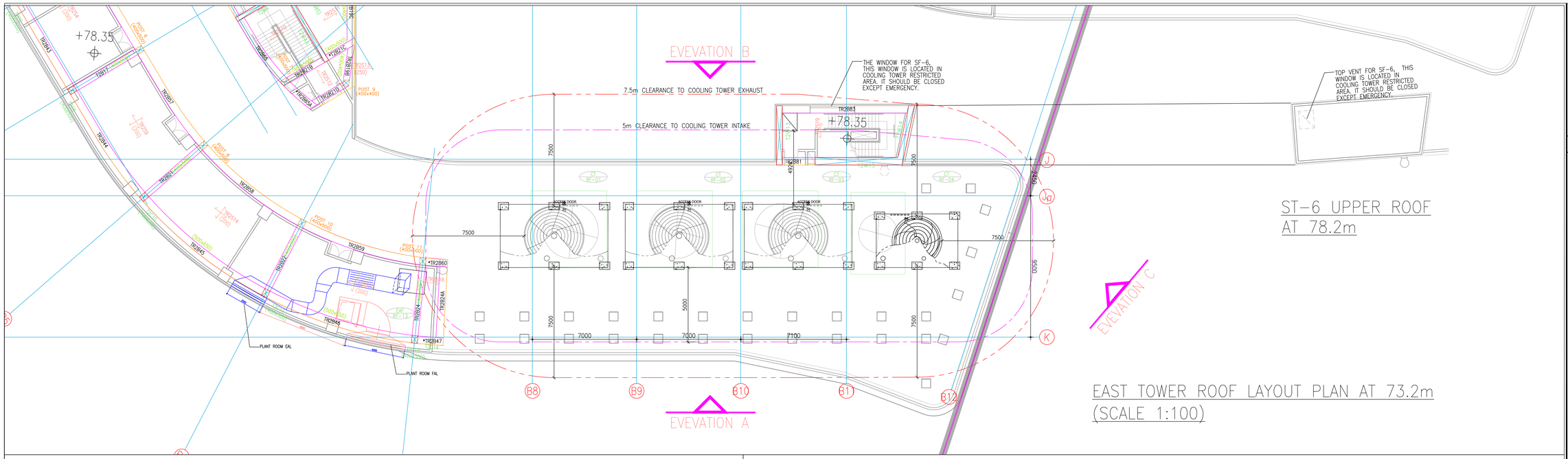
Noise Source Description	Source ID	Measurement Distance (m)	Measured SPL, dB(A)			Max. Measured SPL, dB(A)
			$L_{eq, 1\ min}$	$L_{eq, 1\ min}$	$L_{eq, 1\ min}$	
Emergency Generator Set (Intake)	N1-1*	6	76.2	75.7	75.8	76.2
Emergency Generator Set (Discharge)	N1-2*	12	58.9	58	58.6	58.9
Emergency Generator Set (Intake)	N2-1	6	76.2	75.7	75.8	76.2
Emergency Generator Set (Discharge)	N2-2	12	58.9	58	58.6	58.9
Electricity Substation (High Voltage)	N3^	6	62.5	62.3	61.8	62.5
Electricity Substation (High Voltage)	N4	6	62.5	62.3	61.8	62.5
Cooling Tower (Discharge)	N5-1-1	5	82.3	82.4	82.6	82.6
Cooling Tower (Discharge)	N5-2-1	5	84.6	84.6	84.6	84.6
Cooling Tower (Discharge)	N5-3-1	5	84	84.2	84.2	84.2
Cooling Tower (Discharge)	N5-4-1	5	84.8	84.9	85.1	85.1
Cooling Tower (Discharge)	N5-5-1	5	86.4	86.4	86.9	86.9
Cooling Tower (Discharge)	N5-6-1	5	86.9	87	87	87
Cooling Tower (Intake)	N5-1-2	6	77.2	77.1	77.1	77.2
Cooling Tower (Intake)	N5-2-2	6	78.7	78.6	78.5	78.7
Cooling Tower (Intake)	N5-3-2	6	77.8	77.8	77.6	77.8
Cooling Tower (Intake)	N5-4-2	6	77.2	77.1	77.1	77.2
Cooling Tower (Intake)	N5-5-2	6	76.4	76.1	76	76.4
Cooling Tower (Intake)	N5-6-2	6	76.1	76.1	76.2	76.2
Chiller Room	N6	6	71.4	70.7	70.9	71.4
Low Voltage Substation	N7	5	69.1	68.4	68	69.1
Pump Room and Wave Generator	N8	6	67.9	69.7	67.3	69.7

Remarks:
(*) Since the emergency generator set N1 cannot be operated during the noise measurement, the measured noise levels at a similar emergency generator set N2 were adopted in the fixed noise impact assessment.
(^) Since the electricity substation N3 cannot be operated during the noise measurement, the measured noise levels at a similar electricity substation N4 were adopted in the fixed noise impact assessment.

PA System / Loudspeaker

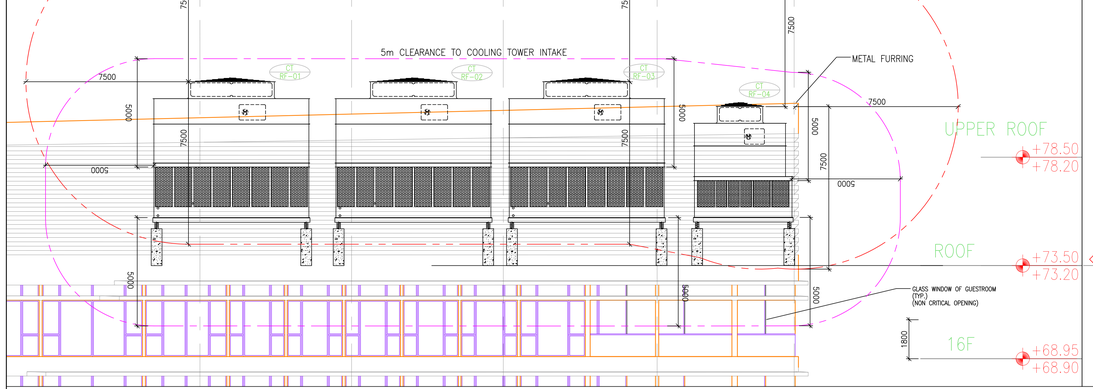
Source ID	Measurement Distance (m)	Measured SPL, dB(A)			Max. Measured SPL, dB(A)
		$L_{eq, 1\ min}$	$L_{eq, 1\ min}$	$L_{eq, 1\ min}$	
N1-3	2	66.8	69	69	69
O1-3	2	69.6	67.8	69.6	69.6
P1	2	77.6	73.3	70.9	77.6
P2	2	77.6	73.3	70.9	77.6
P3	2	77.6	73.3	70.9	77.6
P4	2	77.6	73.3	70.9	77.6
P5	2	77.6	73.3	70.9	77.6
Q1	3	75	75.8	73.4	75.8
Q2	3	75	75.8	73.4	75.8
R1	2	77.6	74.2	75.2	77.6
R2	2	77.6	74.2	75.2	77.6
S1	2	79.2	78.9	78.7	79.2
S2	2	79.2	78.9	78.7	79.2
S3	2	79.2	78.9	78.7	79.2
T1	2	75.5	73.6	74.7	75.5
T2	2	75.5	73.6	74.7	75.5
T3	2	75.5	73.6	74.7	75.5
T4	2	75.5	73.6	74.7	75.5
U1	3	79.6	78.3	79.7	79.7
U2	3	79.6	78.3	79.7	79.7
U3	3	79.6	78.3	79.7	79.7
U4	3	79.6	78.3	79.7	79.7
U5	3	79.6	78.3	79.7	79.7
U6	3	79.6	78.3	79.7	79.7
U7	3	79.6	78.3	79.7	79.7
U8	3	79.6	78.3	79.7	79.7
U9	3	79.6	78.3	79.7	79.7
U10	3	79.6	78.3	79.7	79.7
U11	3	79.6	78.3	79.7	79.7
U12	3	79.6	78.3	79.7	79.7
U13	3	79.6	78.3	79.7	79.7
U14	3	79.6	78.3	79.7	79.7
U15	3	79.6	78.3	79.7	79.7
U16	3	79.6	78.3	79.7	79.7
V1	2	74.6	74.9	74.8	74.9
V2	2	74.6	74.9	74.8	74.9
V3	2	74.6	74.9	74.8	74.9
V4	2	74.6	74.9	74.8	74.9
V5	2	74.6	74.9	74.8	74.9
V6	2	74.6	74.9	74.8	74.9
V7	2	74.6	74.9	74.8	74.9
V8	2	74.6	74.9	74.8	74.9
W1-3	2	66.7	67.8	67.7	67.8
X1-3	2	76.4	76.7	75.8	76.7
Y1	2	72	72.4	72.2	72.4
Y2	2	72	72.4	72.2	72.4
Y3	2	72	72.4	72.2	72.4
Y4	2	72	72.4	72.2	72.4
Z1	2	75.7	76.4	76.4	76.4
Z2	2	75.7	76.4	76.4	76.4
Z3	2	75.7	76.4	76.4	76.4
Z4	2	75.7	76.4	76.4	76.4

Appendix D Information from Ocean Park Corporation

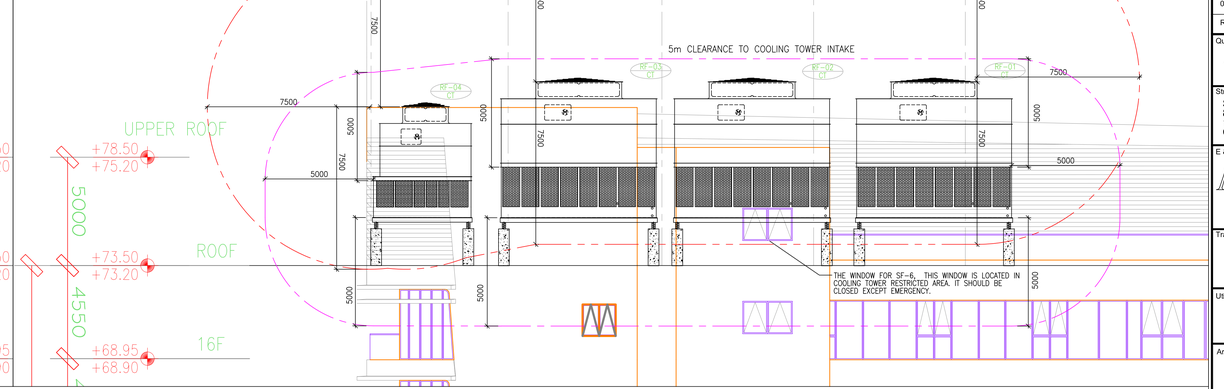


ST-6 UPPER ROOF AT 78.2m

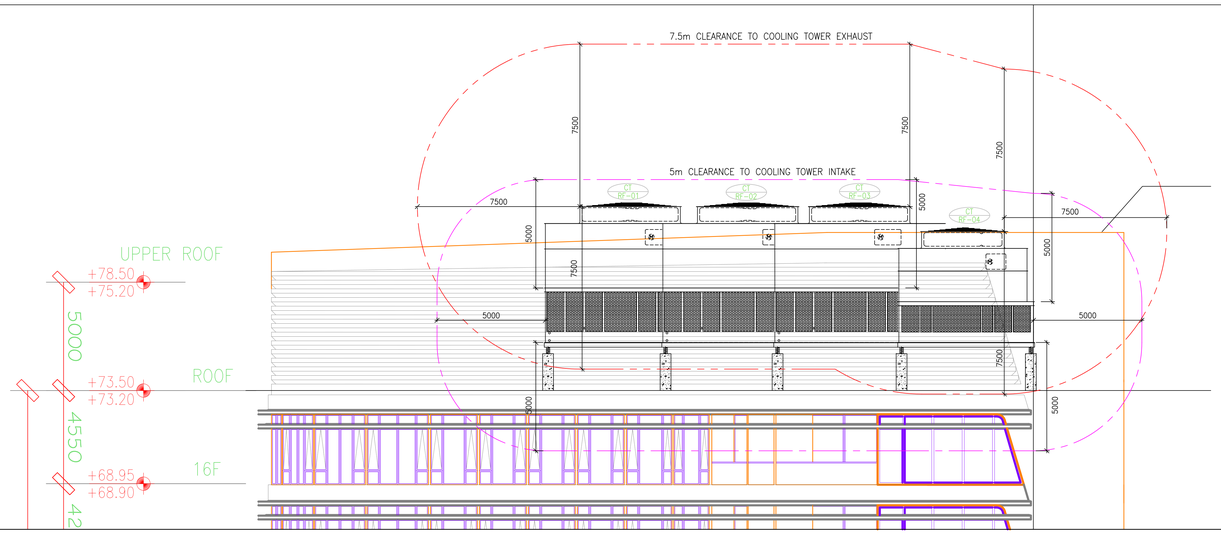
EAST TOWER ROOF LAYOUT PLAN AT 73.2m (SCALE 1:100)



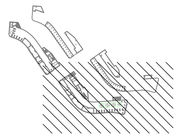
EAST TOWER ELEVATION A (SCALE 1:100)



EAST TOWER ELEVATION B (SCALE 1:100)



EAST TOWER ELEVATION C (SCALE 1:100)



GENERAL NOTES:

NOTE :

7.5m CLEARANCE TO COOLING TOWER EXHAUST

5m CLEARANCE TO COOLING TOWER INTAKE

REV.	DATE	DESCRIPTION
1	01-08-2019	AS PER EMSD COMMENT
0	26-06-2019	1ST EMSD-CT SUBMISSION

Quantity Surveyors
AECOM Cost Consulting (Hong Kong) Limited

Structural & Geotechnical Consultant
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103-109 LEIGHTON ROAD,
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E & M Consultant
ARUP
Ove Arup & Partners Hong Kong Ltd.
LEVEL 17 TOWER 1 GRAND CENTURY PLACE 193 PRINCE EDWARD ROAD, WEST MONG KOK KOWLOON, HONGKONG

Traffic Consultant
MVA Hong Kong Limited

Utility Diversion Consultant
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Ocean Park Corporation

Client
Parkland (Hong Kong) Limited

MAIN CONTRACTOR
Gammon

MVAC CONTRACTOR:
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North Point, Hong Kong.
Tel: 2860-7333 Fax: 2866-7132

PROJECT
Proposed Hotel Development at Ocean Park
Tai Shue Wan, HONG KONG R.B.L. 1020 & Ext.

DRAWING TITTLE
ROOF LAYOUT, ELEVATION FOR CRITICAL OPENINGS

CHECKED BY	DRAWN BY
	CMC
DRAWING NO.	SCALE
KEL-18-038-AC-CT-S-101	1:100
	REV. 0

Cooling Tower Technical Data Sheet

Registration No.:
PS - 2018-000-017-No.1 to No.4
Cooling Tower Ref. :
CT-01 to 03

Suzie Xi
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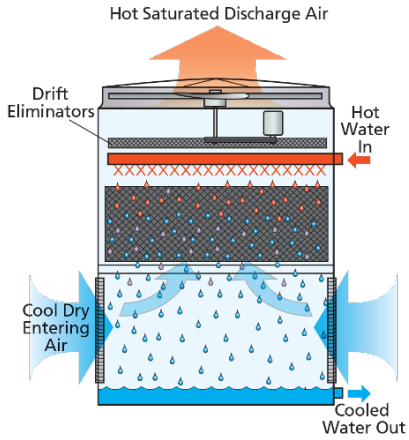
15221305620
sxi@evapcochina.com

(1) UT 114-4O24

Project Details

Project Name : ATAL - OPPO
Location: TBD

Date: 2018/11/20
Customer:
Contact:
Contact Email:



Product Description

The original Advanced Technology cooling tower provides an induced-draft, axial fan solution for a wide array of outdoor cooling capacities.

Selection Criteria

	Total	Each Unit
Flow:	186.6 LPS	186.6 LPS
Fluid:	Water	Water
Entering Fluid Temp:	37.0°C	37.0°C
Leaving Fluid Temp:	32.0°C	32.0°C
Entering Wet Bulb:	29.0°C	29.0°C

Required Capacity

3,900.00 kW
887.31 Tons
3,354,037 kcal/hr

Unit Selected

One(1) EVAPCO UT 114-4O24 at 102.4% capacity (3,993.52 kW)

Product Line is CTI/ECC Certified. Design conditions are outside the scope of CTI Standard 201 RS.

Physical Data Per Unit

Overall Dimensions (WxLxH):	4,248mm x 7,239mm x 6,277mm
Operating Weight:	17,099 kg
Shipping Weight:	9,226 kg
Heaviest Section:	6,577 kg

*weights and dimensions could vary depending on options selected

IBC Design Capability

IBC Standard Structural Design
1.0 Importance Factor Specified

Seismic(SDS):	up to 1.34 g, z/h = 0
Wind Load(P):	up to 5.7 kPa

Fan Motor Data per Unit

Number of Fans:	1
# of Fan Motors:	1
Nameplate Power (380/3/50):	37.00 kW Per Motor

Additional Details

Air Flow:	97 m^3/s

Hydraulic Data

Inlet Pressure Drop:	20.6 kPa
Evaporated Water Rate:	1.34 LPS

Layout Criteria

From FACE B/D to wall:	0.91m
From FACE A/C to wall:	0.91m
Between FACE B/D ends:	0.91m
Between FACE A/C sides:	1.52m

Sound Data(dB(A) @ 1.5m/15m)

Face A (Opp Mtr. Side):	70/56	Face C (Motor Side):	70/56
Face B (End):	71/55	Face D (Opp End):	71/55
Top:	71/59		

Notes: Sound Pressure Levels are according to CTI Standard ATC-128. Sound data is shown for 1 cell operating at full speed. The use of frequency inverters (Variable Frequency Drives) can increase sound levels. Sound Options: Super Low Sound Fan, Water Silencers

Shipping Data

1 Basin Sections: (WxLxH): 4241mm x 7467mm x 2667mm ; 2648kg each* | 1 Casing Sections: (WxLxH): 4241mm x 7696mm x 3505mm ; 6577kg each*
*dimensions and weights above include shipping skids

Accessories

(1) Equalizer Connection; TBD; 100 mm; BFW/GRVD; TBD
(1) Louver Access Door
(1) IBC Standard Structural Design
(1) Bottom inlet, including all internal piping
(1) Super Low Sound Fan
(1) Aluminum Ladder
(1) Fan Motor: Inverter Capable (5~50 Hz, 6~60 Hz)
(1) EVAPAK Fill
(1) Water Silencers
(1) 1.0 Importance Factor Specified

Cooling Tower Technical Data Sheet

Registration No.:
PS - 2018-000-017-No.1 to No.4
Cooling Tower Ref. :
CT-04

Suzie Xi
1159, Luoning Rd, Baoshan district, Shang
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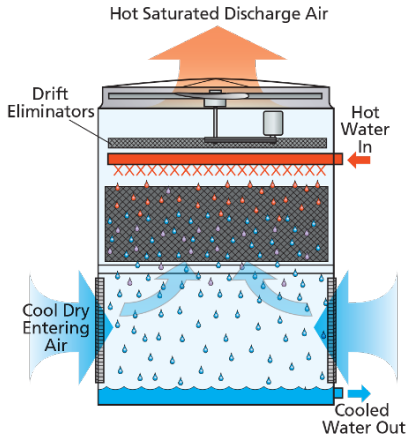
15221305620
sxi@evapcochina.com

(1) UT 112-3O18

Project Details

Project Name : ATAL - OPPO
Location: TBD

Date: 2018/11/20
Customer:
Contact:
Contact Email:



Product Description

The original Advanced Technology cooling tower provides an induced-draft, axial fan solution for a wide array of outdoor cooling capacities.

Selection Criteria

	Total	Each Unit
Flow:	138.8 LPS	138.8 LPS
Fluid:	Water	Water
Entering Fluid Temp:	37.0°C	37.0°C
Leaving Fluid Temp:	32.0°C	32.0°C
Entering Wet Bulb:	29.0°C	29.0°C

Required Capacity

2,900.00 kW
659.8 Tons
2,494,028 kcal/hr

Unit Selected

One(1) EVAPCO UT 112-3O18 at 100% capacity (2,899.94 kW)

Product Line is CTI/ECC Certified. Design conditions are outside the scope of CTI Standard 201 RS.

Physical Data Per Unit

Overall Dimensions (WxLxH):	3,607mm x 5,486mm x 5,124mm
Operating Weight:	10,812 kg
Shipping Weight:	5,951 kg
Heaviest Section:	4,182 kg

*weights and dimensions could vary depending on options selected

IBC Design Capability

IBC Standard Structural Design
1.0 Importance Factor Specified

Seismic(S_{DS}):	up to 1.34 g, z/h = 0
Wind Load(P):	up to 5.7 kPa

Fan Motor Data per Unit

Number of Fans:	1
# of Fan Motors:	1
Nameplate Power (380/3/50):	37.00 kW Per Motor

Additional Details

Air Flow:	75 m^3/s

Hydraulic Data

Inlet Pressure Drop:	22.8 kPa
Evaporated Water Rate:	1.00 LPS

Layout Criteria

From FACE B/D to wall:	0.91m
From FACE A/C to wall:	0.91m
Between FACE B/D ends:	0.91m
Between FACE A/C sides:	1.83m

Sound Data(dB(A) @ 1.5m/15m)

Face A (Opp Mtr. Side):	70/56	Face C (Motor Side):	70/56
Face B (End):	70/55	Face D (Opp End):	70/55
Top:	71/59		

Notes: Sound Pressure Levels are according to CTI Standard ATC-128. Sound data is shown for 1 cell operating at full speed. The use of frequency inverters (Variable Frequency Drives) can increase sound levels. Sound Options: Super Low Sound Fan, Water Silencers

Shipping Data

1 Basin Sections: (WxLxH): 3606mm x 5638mm x 2006mm ; 1769kg each* | 1 Casing Sections: (WxLxH): 3606mm x 6045mm x 2971mm ; 4182kg each*
*dimensions and weights above include shipping skids

Accessories

(1) Equalizer Connection; TBD; 100 mm; BFW/GRVD; TBD	(1) Super Low Sound Fan	(1) EVAPAK Fill
(1) Fan Motor: Inverter Capable (5~50 Hz, 6~60 Hz)	(1) Aluminum Ladder	(1) Water Silencers
(1) IBC Standard Structural Design	(1) 1.0 Importance Factor Specified	(1) Bottom inlet, including all internal piping

Appendix E Fixed Noise Impact Assessment

Predicted Fixed Noise Impact from Fixed Noise Sources - Day-time Period (7am - 7pm)

NSR ID	NSR Description	Fixed Noise Source	Source ID	Measured SPL, dB(A)	No. of Equipment	Total SPL, dB(A)	Measurement Distance (m)	Horizontal Distance (m)	Distance Attenuation dB(A)	Tonality Correction dB(A)	Screening Correction dB(A)	Facade Correction dB(A)	SPL, $L_{eq(30min)}$, dB(A)	Total SPL, $L_{eq(30min)}$, dB(A)	Assessment Period	Noise Criteria, dB(A)
VSA	Victoria Shanghai Academy	Major Fixed Plants within Tai Shue Wan Development	N1-1	76	1	76	6.0	519	-39	0	-10	3	30.3	44.5		
			N1-2	59	1	59	12.0	515	-33	0	-10	3	19.3			
			N2-1	76	1	76	6.0	643	-41	0	-10	3	28.4			
			N2-2	59	1	59	12.0	641	-35	0	-10	3	17.4			
			N3	63	1	63	6.0	522	-39	0	-10	3	17.2			
			N4	63	1	63	6.0	524	-39	0	-10	3	17.2			
			N5-1-1	83	1	83	5.0	699	-43	0	-10	3	33.1			
			N5-2-1	85	1	85	5.0	700	-43	0	-10	3	35.1			
			N5-3-1	84	1	84	5.0	701	-43	0	-10	3	34.1			
			N5-4-1	85	1	85	5.0	710	-43	0	-10	3	35.0			
			N5-5-1	87	1	87	5.0	711	-43	0	-10	3	36.9			
			N5-6-1	87	1	87	5.0	712	-43	0	-10	3	36.9			
			N5-1-2	77	1	77	6.0	696	-41	0	-10	3	28.7			
			N5-2-2	79	1	79	6.0	696	-41	0	-10	3	30.7			
			N5-3-2	78	1	78	6.0	697	-41	0	-10	3	29.7			
			N5-4-2	77	1	77	6.0	713	-42	0	-10	3	28.5			
			N5-5-2	76	1	76	6.0	714	-42	0	-10	3	27.5			
			N5-6-2	76	1	76	6.0	715	-42	0	-10	3	27.5			
			N6	71	1	71	6.0	677	-41	0	-10	3	22.9			
			N7	69	1	69	5.0	660	-42	0	-10	3	19.6			
			N8	70	1	70	6.0	642	-41	0	-10	3	22.4			
		PA System / Loudspeaker within Tai Shue Wan Development	A1	71	1	71	2.0	531	-48	0	-10	3	15.5	43.8	Day-time	55
			A2	71	1	71	2.0	531	-48	0	-10	3	15.5			
			A3	71	1	71	2.0	542	-49	0	-10	3	15.3			
			A4	71	1	71	2.0	543	-49	0	-10	3	15.3			
			A5	71	1	71	2.0	562	-49	0	-10	3	15.0			
			A6	71	1	71	2.0	562	-49	0	-10	3	15.0			
			B1	72	1	72	2.0	534	-49	0	-10	3	16.5			
			B2	72	1	72	2.0	537	-49	0	-10	3	16.4			
			B3	72	1	72	2.0	548	-49	0	-10	3	16.2			
			B4	72	1	72	2.0	558	-49	0	-10	3	16.1			
			C1	76	1	76	3.0	549	-45	0	-10	3	23.8			
			C2	76	1	76	3.0	559	-45	0	-10	3	23.6			
			C3	76	1	76	3.0	562	-45	0	-10	3	23.6			
			C4	76	1	76	3.0	556	-45	0	-10	3	23.6			
			C5	76	1	76	3.0	546	-45	0	-10	3	23.8			
			C6	76	1	76	3.0	543	-45	0	-10	3	23.8			
			C7	76	1	76	3.0	531	-45	0	-10	3	24.0			
			C8	76	1	76	3.0	528	-45	0	-10	3	24.1			
			C9	76	1	76	3.0	527	-45	0	-10	3	24.1			
			C10	76	1	76	3.0	531	-45	0	-10	3	24.0			
			C11	76	1	76	3.0	534	-45	0	-10	3	24.0			
			C12	76	1	76	3.0	535	-45	0	-10	3	24.0			
			C13	76	1	76	3.0	544	-45	0	-10	3	23.8			
			C14	76	1	76	3.0	546	-45	0	-10	3	23.8			
			C15	76	1	76	3.0	553	-45	0	-10	3	23.7			
			C16	76	1	76	3.0	563	-45	0	-10	3	23.5			
			C17	76	1	76	3.0	573	-46	0	-10	3	23.4			
			C18	76	1	76	3.0	580	-46	0	-10	3	23.3			
			C19	76	1	76	3.0	581	-46	0	-10	3	23.3			
			C20	76	1	76	3.0	581	-46	0	-10	3	23.3			
			C21	76	1	76	3.0	581	-46	0	-10	3	23.3			
			C22	76	1	76	3.0	579	-46	0	-10	3	23.3			
			C23	76	1	76	3.0	575	-46	0	-10	3	23.4			
			C24	76	1	76	3.0	570	-46	0	-10	3	23.4			
			D1	74	1	74	2.0	651	-50	0	-10	3	16.7			
			D2	74	1	74	2.0	655	-50	0	-10	3	16.7			
			D3	74	1	74	2.0	661	-50	0	-10	3	16.6			
			D4	74	1	74	2.0	665	-50	0	-10	3	16.6			
			E1	74	1	74	2.0	626	-50	0	-10	3	17.1			
			E2	74	1	74	2.0	628	-50	0	-10	3	17.1			
			E3	74	1	74	2.0	631	-50	0	-10	3	17.0			
			E4	74	1	74	2.0	634	-50	0	-10	3	17.0			
			E5	74	1	74	2.0	636	-50	0	-10	3	17.0			
			E6	74	1	74	2.0	639	-50	0	-10	3	16.9			
			E7	74	1	74	2.0	644	-50	0	-10	3	16.8			
			E8	74	1	74	2.0	667	-50	0	-10	3	16.5			
			F1	74	1	74	4.0	560	-43	0	-10	3	24.1			
			F2	74	1	74	4.0	560	-43	0	-10	3	24.1			
			F3	74	1	74	4.0	560	-43	0	-10	3	24.1			
			G1	74	1	74	2.0	564	-49	0	-10	3	18.0			
			G2	74	1	74	2.0	563	-49	0	-10	3	18.0			
			H1	75	1	75	2.0	593	-49	0	-10	3	18.6			
			H2	75	1	75	2.0	588	-49	0	-10	3	18.6			
			H3	75	1	75	2.0	584	-49	0	-10	3	18.7			
			H4	75	1	75	2.0	582	-49	0	-10	3	18.7			
			H5	75	1	75	2.0	583	-49	0	-10	3	18.7			
			H6	75	1	75	2.0	585	-49	0	-10	3	18.7			
			H7	75	1	75	2.0	587	-49	0	-10	3	18.6			
			H8	75	1	75	2.0	593	-49	0	-10	3	18.6			
			H9	75	1	75	2.0	593	-49	0	-10	3	18.6			
			H10	75	1	75	2.0	591	-49	0	-10	3	18.6			
			I1	74	1	74	2.0	593	-49	0	-10	3	17.6			
			I2	74	1	74	2.0	595	-49	0	-10	3	17.5			
			I3	74	1	74	2.0	597	-50	0	-10	3	17.5			
			I4	74	1	74	2.0	601	-50	0	-10	3	17.4			
			I5	74	1	74	2.0	605	-50	0	-10	3	17.4			
			I6	74	1	74	2.0	609	-50	0	-10	3	17.3			
			I7	74	1	74	2.0	615	-50	0	-10	3	17.2			
			J1	72	1	72	2.0	593	-49	0	-10	3	15.6			
			J2	72	1	72	2.0	593	-49	0	-10	3	15.6			
			J3	72	1	72	2.0	599	-50	0	-10	3	15.5			
			J4	72	1	72	2.0	598	-50	0	-10	3	15.5			
			J5	72	1	72	2.0	603	-50	0	-10	3	15.4			
			J6	72	1	72	2.0	608	-50	0	-10	3	15.3			
			J7	72	1	72	2.0	612	-50	0	-10	3	15.3			
			K1	76	1	76	2.0	550	-49	0	-10	3	20.2			
			K2	76	1	76	2.0	550	-49	0	-10	3	20.2			
			K3	76	1	76	2.0	548	-49	0	-10	3	20.2			
			K4	76	1	76	2.0	548	-49	0	-10	3	20.2			
			L1	77	1	77	2.0	563	-49	0	-10	3	21.0			
			L2	77	1	77	2.0	564	-49	0	-10	3	21.0			
			L3	77	1	77	2.0	572	-49	0	-10	3	20.9			
			M1	69	1	69	2.0	563	-49	0	-10	3	13.0			
			M2	69	1	69	2.0	566	-49	0	-10	3	13.0			
			M3	69	1	69	2.0	569	-49	0	-10	3	12.9			
			M4	69	1	69	2.0	572	-49	0	-10	3	12.9			
			M5	69	1	69	2.0	575	-49	0	-10	3	12.8			
			M6	69	1	69	2.0	580	-49	0	-10	3	12.8			
			M7	69	1	69	2.0	583	-49	0	-10	3	12.7			
			N1-3	69	3	74	2.0	590	-49	0	-10	3	17.6			
			O1-3	70	3	74	2.0	597	-50	0	-10	3	17.5			
			P1	78	1	78	2.0	598	-50	0	-10	3	21.5			
			P2	78	1	78	2.0	604	-50	0	-10	3	21.4			
			P3	78	1	78	2.0	607	-50	0	-10	3	21.4			
			P4	78	1	78	2.0	612	-50	0	-10	3	21.3			
			P5	78	1	78	2.0	616	-50	0	-10	3	21.2			
			Q1	76	1	76	3.0	606	-46	0	-10	3	22.9			
			Q2	76	1	76	3.0	607	-46	0	-10	3	22.9			
			R1	78	1	78	2.0	623	-50	0	-10	3	21.1			
			R2	78	1	78	2.0	624	-50	0	-10	3	21.1			
			S1	79	1	79	2.0	626	-50	0	-10	3	22.1			
			S2	79	1	79	2.0	633	-50	0	-10	3	22.0			
			S3	79	1	79	2.0	641	-50	0	-10	3	21.9			
			T1	76	1	76	2.0	564	-49	0	-10	3	20.0			
			T2	76	1	76	2.0	565	-49	0	-10	3	20.0			
			T3	76	1	76	2.0	565	-49	0	-10	3	20.0			
			T4	76	1	76	2.0	565	-49	0	-10	3	20.0			
			U1	80	1	80	3.0	557	-45	0	-10	3	27.6			
			U2	80	1	80	3.0	555	-45	0	-10	3	27.7			
			U3	80	1	80	3.0	553	-45	0	-10	3	27.7			
			U4	80	1	80	3.0	549	-45	0	-10	3	27.8			
			U5	80	1	80	3.0	547	-45	0	-10	3	27.8			
			U6	80	1	80	3.0	546	-45	0	-10	3	27.8			
			U7	80	1	80	3.0	539	-45	0	-10	3	27.9			
			U8	80	1	80	3.0	533	-45	0	-10	3	28.0			
			U9	80	1	80	3.0	523	-45	0	-10	3	28.2			
			U10	80	1	80	3.0	526	-45	0	-10	3	28.1			
			U11	80	1	80	3.0	527	-45	0	-10	3	28.1			
			U12	80	1	80	3.0	531	-45	0	-10	3	28.0			
			U13	80	1	80	3.0	525	-45	0	-10	3	28.1			
			U14	80	1	80	3.0	520	-45	0	-10	3	28.2			
			U15	80	1	80	3.0	516	-45	0	-10	3	28.3			
			U16	80	1	80	3.0	512	-45	0	-10	3	28.3			
			V1	75	1	75	2.0	487	-48	0	-10	3	20.3			
			V2	75	1	75	2.0	480	-48	0	-10	3	20.4			
			V3	75	1	75	2.0	481	-48	0	-10	3	20.4			
			V4	75	1	75	2.0	484	-48	0	-10	3	20.3			
			V5	75	1	75	2.0	478	-48	0	-10	3	20.4			
			V6	75	1	75	2.0	477	-48	0	-10	3	20.4			
			V7	75	1	75	2.0	477	-48	0	-10	3	20.4			
			V8	75	1	75	2.0	478	-48	0	-10	3	20.4			
			W1-3	68	3	73	2.0	483	-48	0	-10	3	18.3			
			X1-3	77	3	81	2.0	473	-47	0	-10	3	26.5			
			Y1	72	1	72	2.0	521	-48	0	-10	3	16.7			
			Y2	72	1	72	2.0	522	-48	0	-10	3	16.7			
			Y3	72	1	72	2.0	538	-49	0	-10	3	16.4			
			Y4	72	1	72	2.0	539	-49	0	-10	3	16.4			
			Z1	76	1	76	2.0	524	-48	0	-10	3	20.6			
			Z2	76	1	76	2.0	525	-48	0	-10	3	20.6			
			Z3	76	1	76	2.0	534	-49	0	-10	3	20.5			
			Z4	76	1	76	2.0	535	-49	0	-10	3	20.5			
		Outdoor E&M Facility of nearby New Hotel *	CT-01	59	1	59	15.0	506	-31	0	-10	3	21.4	27.5		
			CT-02	59	1	59	15.0	506	-31	0	-10	3	21.4			
			CT-03	59	1	59	15.0	507	-31	0	-10	3	21.4			
			CT-04	59	1	59	15.0	507	-31	0	-10	3	21.4			
		Special Events Show at Ocean Park (The Summit) ^	S1	110	1	110	--	874	-67	0	-10	3	36.2	36.3		
		Temporary Indoor Attractions at Ocean Park (The Summit) during Special Events ^	S2	90	1	90	--	913	-67	0	-10	3	15.8			
			S3	90	1	90	--	1106	-69	0	-10	3	14.1			
			S4	90	1	90	--	1142	-69	0	-10	3	13.8			
													Total SPL, dB(A)	**48**		

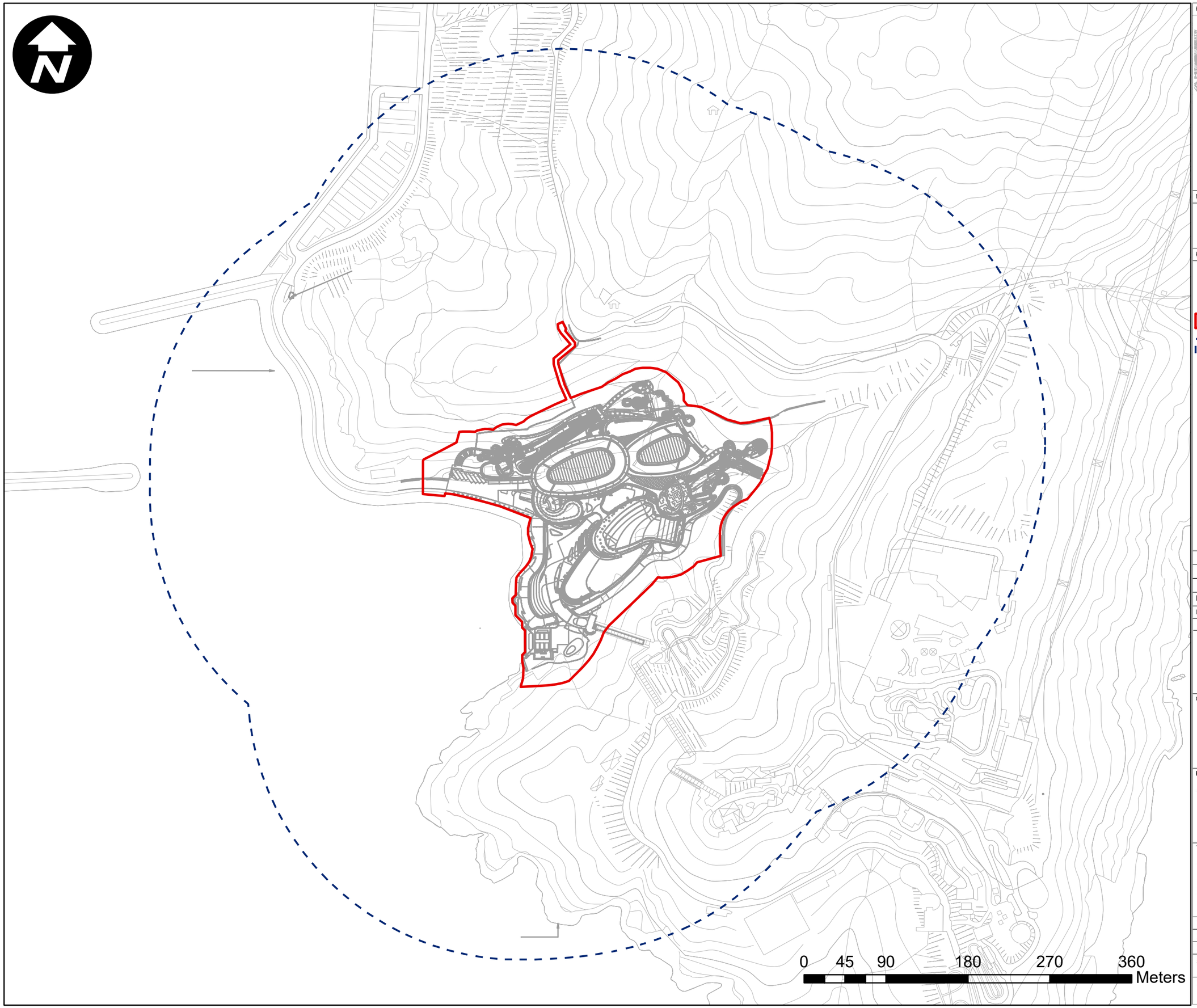
Remarks:
(*) Sound pressure levels of the E&M facility (i.e. cooling towers) of nearby new hotel are provided by Ocean Park Corporation as shown in Appendix D.
(^) Sound power levels of the special events show / attractions at Ocean Park are referred to approved EIA report Appendix 5.6.

Predicted Fixed Noise Impact from Fixed Noise Sources - Day-time & Evening Periods (7am - 11pm)

NSR ID	NSR Description	Fixed Noise Source	Source ID	Measured SPL, dB(A)	No. of Equipment	Total SPL, dB(A)	Measurement Distance (m)	Horizontal Distance (m)	Distance Attenuation dB(A)	Tonality Correction dB(A)	Screening Correction dB(A)	Facade Correction dB(A)	SPL, $L_{eq(30min)}$, dB(A)	Total SPL, $L_{eq(30min)}$, dB(A)	Assessment Period	Noise Criteria, dB(A)
HKJCC	Hong Kong Juvenile Care Centre	Major Fixed Plants within Tai Shue Wan Development	N1-1	76	1	76	6.0	515	-39	0	-10	3	30.3	44.5	Day-time & Evening	50
			N1-2	59	1	59	12.0	514	-33	0	-10	3	19.4			
			N2-1	76	1	76	6.0	621	-40	0	-10	3	28.7			
			N2-2	59	1	59	12.0	610	-34	0	-10	3	17.9			
			N3	63	1	63	6.0	527	-39	0	-10	3	17.1			
			N4	63	1	63	6.0	525	-39	0	-10	3	17.2			
			N5-1-1	83	1	83	5.0	701	-43	0	-10	3	33.1			
			N5-2-1	85	1	85	5.0	701	-43	0	-10	3	35.1			
			N5-3-1	84	1	84	5.0	701	-43	0	-10	3	34.1			
			N5-4-1	85	1	85	5.0	712	-43	0	-10	3	34.9			
			N5-5-1	87	1	87	5.0	712	-43	0	-10	3	36.9			
			N5-6-1	87	1	87	5.0	712	-43	0	-10	3	36.9			
			N5-1-2	77	1	77	6.0	698	-41	0	-10	3	28.7			
			N5-2-2	79	1	79	6.0	698	-41	0	-10	3	30.7			
			N5-3-2	78	1	78	6.0	698	-41	0	-10	3	29.7			
			N5-4-2	77	1	77	6.0	715	-42	0	-10	3	28.5			
			N5-5-2	76	1	76	6.0	715	-42	0	-10	3	27.5			
			N5-6-2	76	1	76	6.0	715	-42	0	-10	3	27.5			
			N6	71	1	71	6.0	672	-41	0	-10	3	23.0			
			N7	69	1	69	5.0	644	-42	0	-10	3	19.8			
			N8	70	1	70	6.0	611	-40	0	-10	3	22.8			
		PA System / Loudspeaker within Tai Shue Wan Development	A1	71	1	71	2.0	553	-49	0	-10	3	15.2	44.0		
			A2	71	1	71	2.0	553	-49	0	-10	3	15.2			
			A3	71	1	71	2.0	555	-49	0	-10	3	15.1			
			A4	71	1	71	2.0	555	-49	0	-10	3	15.1			
			A5	71	1	71	2.0	565	-49	0	-10	3	15.0			
			A6	71	1	71	2.0	565	-49	0	-10	3	15.0			
			B1	72	1	72	2.0	553	-49	0	-10	3	16.2			
			B2	72	1	72	2.0	553	-49	0	-10	3	16.2			
			B3	72	1	72	2.0	557	-49	0	-10	3	16.1			
			B4	72	1	72	2.0	563	-49	0	-10	3	16.0			
			C1	76	1	76	3.0	545	-45	0	-10	3	23.8			
			C2	76	1	76	3.0	555	-45	0	-10	3	23.7			
			C3	76	1	76	3.0	555	-45	0	-10	3	23.7			
			C4	76	1	76	3.0	548	-45	0	-10	3	23.8			
			C5	76	1	76	3.0	539	-45	0	-10	3	23.9			
			C6	76	1	76	3.0	537	-45	0	-10	3	23.9			
			C7	76	1	76	3.0	528	-45	0	-10	3	24.1			
			C8	76	1	76	3.0	523	-45	0	-10	3	24.2			
			C9	76	1	76	3.0	520	-45	0	-10	3	24.2			
			C10	76	1	76	3.0	522	-45	0	-10	3	24.2			
			C11	76	1	76	3.0	524	-45	0	-10	3	24.2			
			C12	76	1	76	3.0	521	-45	0	-10	3	24.2			
			C13	76	1	76	3.0	532	-45	0	-10	3	24.0			
			C14	76	1	76	3.0	536	-45	0	-10	3	24.0			
			C15	76	1	76	3.0	540	-45	0	-10	3	23.9			
			C16	76	1	76	3.0	550	-45	0	-10	3	23.7			
			C17	76	1	76	3.0	560	-45	0	-10	3	23.6			
			C18	76	1	76	3.0	569	-46	0	-10	3	23.4			
			C19	76	1	76	3.0	571	-46	0	-10	3	23.4			
			C20	76	1	76	3.0	574	-46	0	-10	3	23.4			
			C21	76	1	76	3.0	575	-46	0	-10	3	23.3			
			C22	76	1	76	3.0	575	-46	0	-10	3	23.3			
			C23	76	1	76	3.0	573	-46	0	-10	3	23.4			
			C24	76	1	76	3.0	569	-46	0	-10	3	23.4			
			D1	74	1	74	2.0	647	-50	0	-10	3	16.8			
			D2	74	1	74	2.0	651	-50	0	-10	3	16.8			
			D3	74	1	74	2.0	656	-50	0	-10	3	16.7			
			D4	74	1	74	2.0	660	-50	0	-10	3	16.6			
			E1	74	1	74	2.0	618	-50	0	-10	3	17.2			
			E2	74	1	74	2.0	620	-50	0	-10	3	17.2			
			E3	74	1	74	2.0	623	-50	0	-10	3	17.1			
			E4	74	1	74	2.0	627	-50	0	-10	3	17.1			
			E5	74	1	74	2.0	629	-50	0	-10	3	17.0			
			E6	74	1	74	2.0	633	-50	0	-10	3	17.0			
			E7	74	1	74	2.0	639	-50	0	-10	3	16.9			
			E8	74	1	74	2.0	661	-50	0	-10	3	16.6			
			F1	74	1	74	4.0	542	-43	0	-10	3	24.4			
			F2	74	1	74	4.0	541	-43	0	-10	3	24.4			
			F3	74	1	74	4.0	539	-43	0	-10	3	24.4			
			G1	74	1	74	2.0	546	-49	0	-10	3	18.3			
			G2	74	1	74	2.0	543	-49	0	-10	3	18.3			
			H1	75	1	75	2.0	565	-49	0	-10	3	19.0			
			H2	75	1	75	2.0	561	-49	0	-10	3	19.0			
			H3	75	1	75	2.0	558	-49	0	-10	3	19.1			
			H4	75	1	75	2.0	559	-49	0	-10	3	19.1			
			H5	75	1	75	2.0	561	-49	0	-10	3	19.0			
			H6	75	1	75	2.0	565	-49	0	-10	3	19.0			
			H7	75	1	75	2.0	570	-49	0	-10	3	18.9			
			H8	75	1	75	2.0	573	-49	0	-10	3	18.9			
			H9	75	1	75	2.0	572	-49	0	-10	3	18.9			
			H10	75	1	75	2.0	568	-49	0	-10	3	18.9			
			I1	74	1	74	2.0	577	-49	0	-10	3	17.8			
			I2	74	1	74	2.0	581	-49	0	-10	3	17.7			
			I3	74	1	74	2.0	584	-49	0	-10	3	17.7			
			I4	74	1	74	2.0	588	-49	0	-10	3	17.6			
			I5	74	1	74	2.0	592	-49	0	-10	3	17.6			
			I6	74	1	74	2.0	598	-50	0	-10	3	17.5			
			I7	74	1	74	2.0	603	-50	0	-10	3	17.4			
			J1	72	1	72	2.0	580	-49	0	-10	3	15.8			
			J2	72	1	72	2.0	580	-49	0	-10	3	15.7			
			J3	72	1	72	2.0	586	-49	0	-10	3	15.7			
			J4	72	1	72	2.0	587	-49	0	-10	3	15.7			
			J5	72	1	72	2.0	592	-49	0	-10	3	15.6			
			J6	72	1	72	2.0	596	-49	0	-10	3	15.5			
			J7	72	1	72	2.0	601	-50	0	-10	3	15.4			
			K1	76	1	76	2.0	535	-49	0	-10	3	20.4			
			K2	76	1	76	2.0	535	-49	0	-10	3	20.4			
			K3	76	1	76	2.0	537	-49	0	-10	3	20.4			
			K4	76	1	76	2.0	537	-49	0	-10	3	20.4			
			L1	77	1	77	2.0	535	-49	0	-10	3	21.5			
			L2	77	1	77	2.0	535	-49	0	-10	3	21.5			
			L3	77	1	77	2.0	538	-49	0	-10	3	21.4			
			M1	69	1	69	2.0	541	-49	0	-10	3	13.4			
			M2	69	1	69	2.0	542	-49	0	-10	3	13.3			
			M3	69	1	69	2.0	544	-49	0	-10	3	13.3			
			M4	69	1	69	2.0	547	-49	0	-10	3	13.3			
			M5	69	1	69	2.0	549	-49	0	-10	3	13.2			
			M6	69	1	69	2.0	552	-49	0	-10	3	13.2			
			M7	69	1	69	2.0	555	-49	0	-10	3	13.1			
			N1-3	69	3	74	2.0	545	-49	0	-10	3	18.3			
			O1-3	70	3	74	2.0	544	-49	0	-10	3	18.3			
			P1	78	1	78	2.0	569	-49	0	-10	3	21.9			
			P2	78	1	78	2.0	575	-49	0	-10	3	21.8			
			P3	78	1	78	2.0	578	-49	0	-10	3	21.8			
			P4	78	1	78	2.0	582	-49	0	-10	3	21.7			
			P5	78	1	78	2.0	585	-49	0	-10	3	21.7			
			Q1	76	1	76	3.0	593	-46	0	-10	3	23.1			
			Q2	76	1	76	3.0	594	-46	0	-10	3	23.1			
			R1	78	1	78	2.0	609	-50	0	-10	3	21.3			
			R2	78	1	78	2.0	609	-50	0	-10	3	21.3			
			S1	79	1	79	2.0	595	-49	0	-10	3	22.5			
			S2	79	1	79	2.0	603	-50	0	-10	3	22.4			
			S3	79	1	79	2.0	612	-50	0	-10	3	22.3			
			T1	76	1	76	2.0	544	-49	0	-10	3	20.3			
			T2	76	1	76	2.0	546	-49	0	-10	3	20.3			
			T3	76	1	76	2.0	546	-49	0	-10	3	20.3			
			T4	76	1	76	2.0	548	-49	0	-10	3	20.2			
			U1	80	1	80	3.0	547	-45	0	-10	3	27.8			
			U2	80	1	80	3.0	547	-45	0	-10	3	27.8			
			U3	80	1	80	3.0	546	-45	0	-10	3	27.8			
			U4	80	1	80	3.0	543	-45	0	-10	3	27.8			
			U5	80	1	80	3.0	543	-45	0	-10	3	27.9			
			U6	80	1	80	3.0	540	-45	0	-10	3	27.9			
			U7	80	1	80	3.0	534	-45	0	-10	3	28.0			
			U8	80	1	80	3.0	529	-45	0	-10	3	28.1			
			U9	80	1	80	3.0	519	-45	0	-10	3	28.2			
			U10	80	1	80	3.0	523	-45	0	-10	3	28.2			
			U11	80	1	80	3.0	525	-45	0	-10	3	28.1			
			U12	80	1	80	3.0	530	-45	0	-10	3	28.1			
			U13	80	1	80	3.0	525	-45	0	-10	3	28.1			
			U14	80	1	80	3.0	520	-45	0	-10	3	28.2			
			U15	80	1	80	3.0	514	-45	0	-10	3	28.3			
			U16	80	1	80	3.0	510	-45	0	-10	3	28.4			
			V1	75	1	75	2.0	484	-48	0	-10	3	20.3			
			V2	75	1	75	2.0	470	-47	0	-10	3	20.6			
			V3	75	1	75	2.0	473	-47	0	-10	3	20.5			
			V4	75	1	75	2.0	478	-48	0	-10	3	20.4			
			V5	75	1	75	2.0	466	-47	0	-10	3	20.6			
			V6	75	1	75	2.0	464	-47	0	-10	3	20.7			
			V7	75	1	75	2.0	462	-47	0	-10	3	20.7			
			V8	75	1	75	2.0	460	-47	0	-10	3	20.8			
			W1-3	68	3	73	2.0	489	-48	0	-10	3	18.2			
			X1-3	77	3	81	2.0	438	-47	0	-10	3	27.2			
			Y1	72	1	72	2.0	521	-48	0	-10	3	16.7			
			Y2	72	1	72	2.0	521	-48	0	-10	3	16.7			
			Y3	72	1	72	2.0	537	-49	0	-10	3	16.4			
			Y4	72	1	72	2.0	538	-49	0	-10	3	16.4			
			Z1	76	1	76	2.0	522	-48	0	-10	3	20.7			
			Z2	76	1	76	2.0	523	-48	0	-10	3	20.6			
			Z3	76	1	76	2.0	532	-48	0	-10	3	20.5			
			Z4	76	1	76	2.0	533	-49	0	-10	3	20.5			
		Outdoor E&M Facility of nearby New Hotel *	CT-01	59	1	59	15.0	533	-31	0	-10	3	21.0	26.9		
			CT-02	59	1	59	15.0	536	-31	0	-10	3	20.9			
			CT-03	59	1	59	15.0	538	-31	0	-10	3	20.9			
			CT-04	59	1	59	15.0	541	-31	0	-10	3	20.9			
		Special Events Show at Ocean Park (The Summit) ^	S1	110	1	110	--	826	-66	0	-10	3	36.7	36.8		
		Temporary Indoor Attractions at Ocean Park (The Summit) during Special Events ^	S2	90	1	90	--	851	-67	0	-10	3	16.4			
			S3	90	1	90	--	1048	-68	0	-10	3	14.6			
			S4	90	1	90	--	1098	-69	0	-10	3	14.2			
													Total SPL, dB(A)	**48**		

Remarks:
(*) Sound pressure levels of the E&M facility (i.e. cooling towers) of nearby new hotel are provided by Ocean Park Corporation as shown in Appendix D.
(^) Sound power levels of the special events show / attractions at Ocean Park are referred to approved EIA report Appendix 5.6.

Figures



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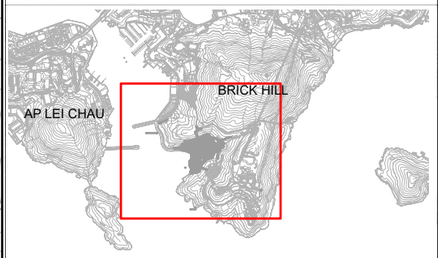

Notes:

Key to symbols:

LEGEND

PROJECT BOUNDARY

300m ASSESSMENT AREA

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	JUL 2021	KN		HL	GC

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Client

土木工程拓展署
Civil Engineering and Development Department

Project

TAI SHUE WAN DEVELOPMENT AT OCEAN PARK

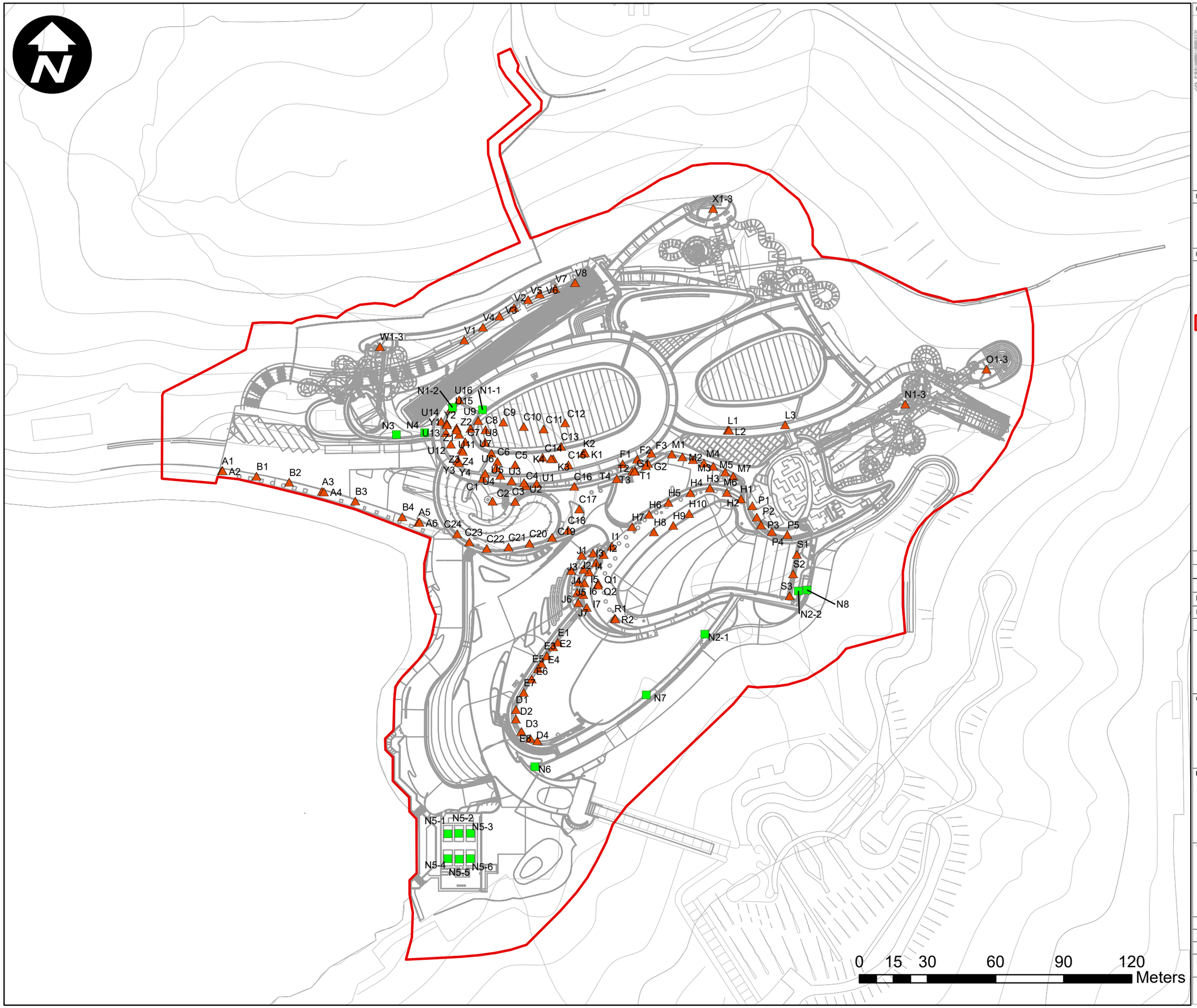
Title

LOCATION OF THE PROJECT

Designed			Eng check		
Drawn			Coordination		
Dwg check			Approved		
Scale at A3		Status		Rev	

Drawing Number

FIGURE 1.1



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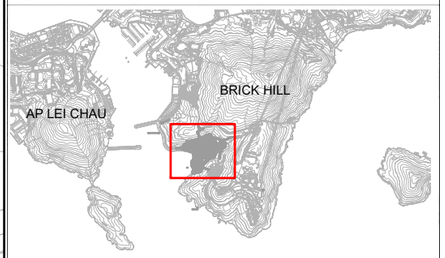

Notes:

Key to symbols:

LEGEND

- PROJECT BOUNDARY
- PA SYSTEMS / LOUDSPEAKERS
- MAJOR FIXED PLANTS

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	JUL 2021	KN		HL	GC

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Project

TAI SHUE WAN DEVELOPMENT AT OCEAN PARK

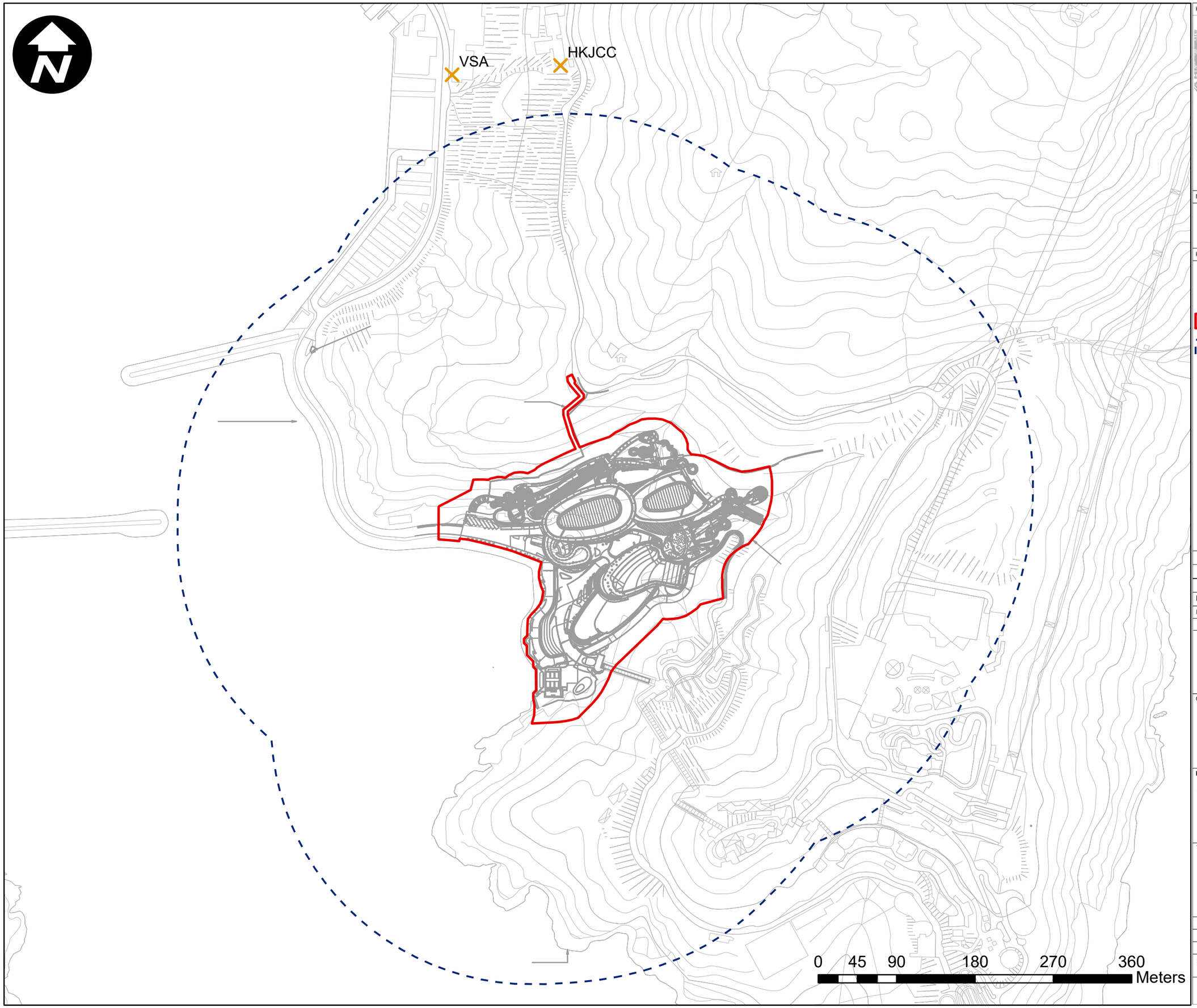
Title

LOCATIONS OF FIXED NOISE SOURCES

Designed			Eng check		
Drawn			Coordination		
Dwg check			Approved		
Scale at A3		Status		Rev	

Drawing Number

FIGURE 2.1



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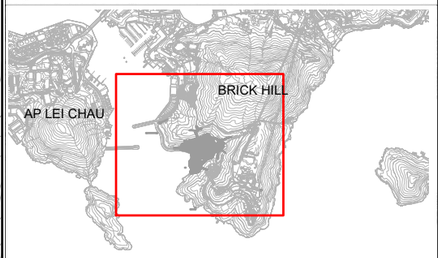

Notes:

Key to symbols:

LEGEND

- PROJECT BOUNDARY
- 300m ASSESSMENT AREA
- NOISE SENSITIVE RECEIVER

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	JUL 2021	KN		HL	GC

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TAI SHUE WAN DEVELOPMENT AT OCEAN PARK

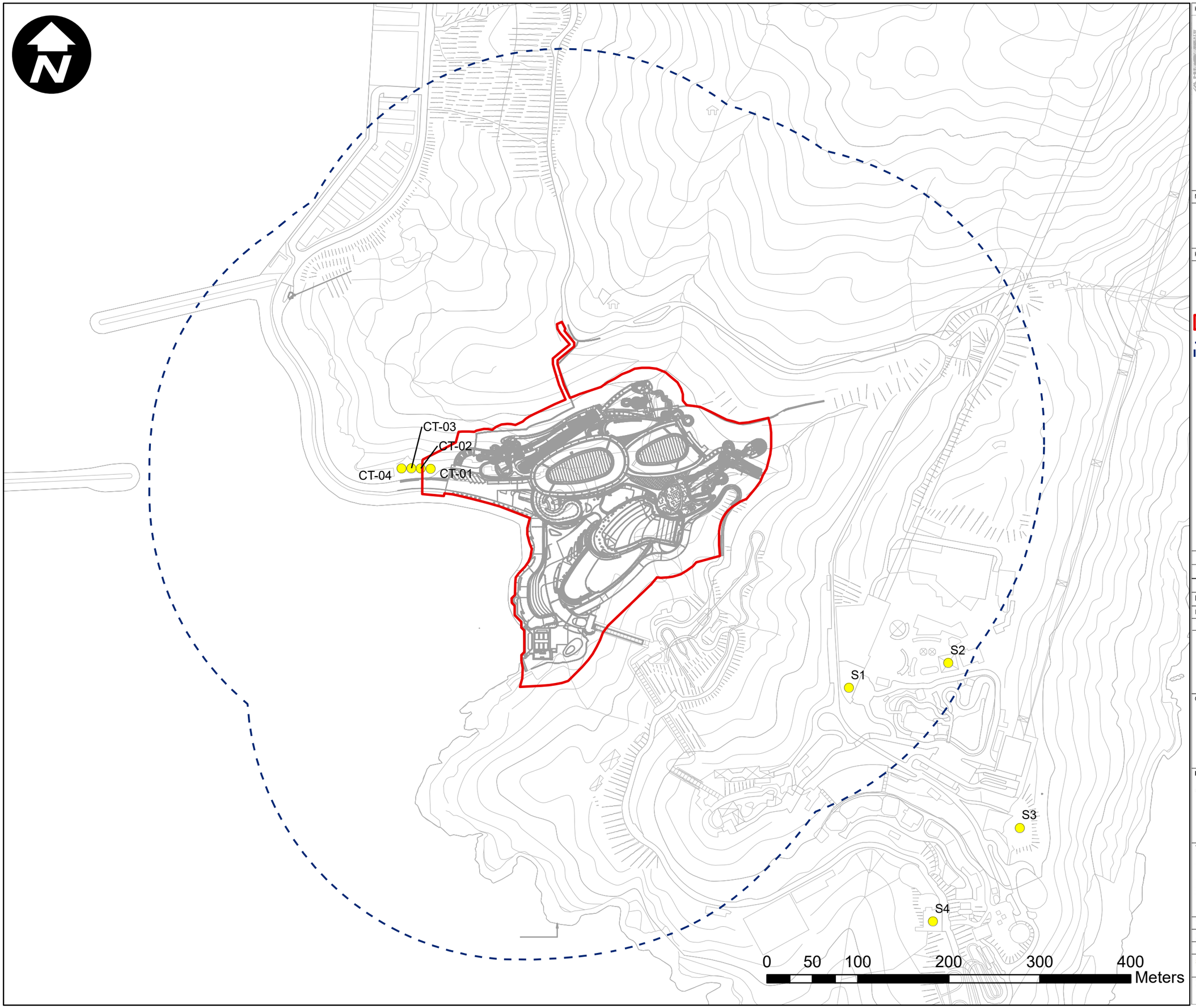
Title

LOCATIONS OF REPRESENTATIVE NOISE SENSITIVE RECEIVERS

Designed			Eng check		
Drawn			Coordination		
Dwg check			Approved		
Scale at A3		Status		Rev	

Drawing Number

FIGURE 3.1



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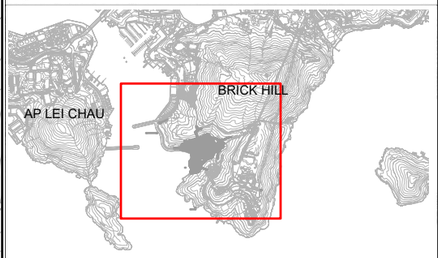

Notes:

Key to symbols:

LEGEND

- PROJECT BOUNDARY
- 300m ASSESSMENT AREA
- FIXED NOISE SOURCES FROM CONCURRENT PROJECTS

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	JUL 2021	KN		HL	GC

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Civil Engineering and Development Department

Project

TAI SHUE WAN DEVELOPMENT AT OCEAN PARK

Title

LOCATIONS OF FIXED NOISE SOURCES FROM CONCURRENT PROJECTS

Designed			Eng check		
Drawn			Coordination		
Dwg check			Approved		
Scale at A3		Status		Rev	

Drawing Number

FIGURE 3.2

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