


MTR Corporation Limited

Tung Chung Line Extension

Construction Noise Management Plan
(for Works Contract No. 1201)
(Condition 2.13 of EP-614/2022)

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Date: 28 September 2023

MTR Corporation Ltd

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Reference: 277416-REP-054-01b

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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1. Introduction

1.1 Project Background

- 1.1.1.1 The Railway Development Strategy 2014 (RDS-2014) announced by the Government of the Hong Kong Special Administrative Region included the conceptual scheme of Tung Chung West (TCW) Extension and a possible Tung Chung East (TCE) Station.
- 1.1.1.2 This new railway system has been included in the approved Schedule 3 Environmental Impact Assessment (EIA) for Tung Chung New Town Extension (TCNTE), which has included the new stations at TCE area and TCW area and the associated trackwork and tunnel. However, a separate Schedule 2 EIA study for this railway system is conducted to address the associated environmental impacts, taking into account of the latest design.
- 1.1.1.3 The EIA Report for Tung Chung Line Extension (the Project) (AEIAR-235/2022) was approved on 12 July 2022. The Environmental Permit (EP) (No. EP-614/2022) was then issued on 9 August 2022. According to Clause 2.13 of the EP, the Permit Holder shall submit a Construction Noise Management Plan (CNMP) for implementing construction noise mitigation measures at least 2 months before the commencement of construction works of relevant Works Contract of the Project to the Director of Environmental Protection (DEP) for approval.

1.2 Purpose of this Report

- 1.2.1.1 As stipulated in Clause 2.13 of the EP, the CNMP shall identify the noise source inventory and assess the effectiveness of construction noise mitigation measures, including the use of quieter powered mechanical equipment, noise barriers and noise enclosures as recommended in the EIA report (Register No. AEIAR-235/2022). To further mitigate construction noise impacts, the CNMP shall review the practicality of the use of quieter construction equipment/methods, such as hydraulic crusher/ hand-held concrete crusher for demolition; diamond wire saw/ non-explosive chemical expansion agent for rock/concrete breaking; silent piling by Press-in method for sheet piles etc.; when necessary. The CNMP shall include an implementation schedule in table form to clearly list out the mitigation measures to be implemented, and the implementation party, location, timing, and environmental performance required for implementation of the mitigation measures. All mitigation measures recommended and requirements specified in the CNMP shall be fully implemented.
- 1.2.1.2 For the groundborne construction noise, no noise exceedance was predicted in the approved report for Tung Chung Line Extension (AEIAR-235/2022). Hence, noise mitigation measures are not required for groundborne construction. Future review (e.g. in-situ measurement along the Tunnel Boring Machine (TBM) operation) should be conducted by the Contractor if TBM operation in restricted hours is needed.
- 1.2.1.3 This CNMP aims to identify the noise source inventory of TCW station, Emergency Access Point (EAP)/ Emergency Egress Point (EEP) and Launching/ Retrieval Shaft, and the barging facility. For the effectiveness of construction noise mitigation measures, including the use of quieter powered mechanical equipment, noise barriers and noise enclosures as recommended in the approved EIA report for Tung Chung Line Extension (AEIAR-235/2022) will be addressed.

1.2.1.4 Noise source inventory and mitigation measures adopted by TCE station and its rail realignment works are covered in a separate CNMP.

1.2.1.5 This CNMP will be reviewed and updated subject to the actual construction works and onsite arrangement if necessary. This CNMP focused on the construction works conducted during June 2023 to October 2023 only and the remaining construction period is still under design stage and subject to change. The Contractor will submit other CNMP for the remaining construction period once the details become available. If there is any update on the construction works conducted from June 2023 to October 2023, a revised CNMP will be submitted for EPD approval. To compare with the approved EIA for Tung Chung Line Extension (AEIAR-235/2022), the following items have been updated:

- Updated Quality Powered Mechanical Equipment (QPME) label;
- Inclusion of demolition of footbridge near Yat Tung Estate with the use of concrete crusher;
- Additional breaker for site clearance of TCW, EAP / EEP and launching shaft / retrieval shaft;
- No reprovision of footbridge near Yat Tung Estate; and
- Updated the construction programme of launching shaft / retrieval shaft and demolition of existing footbridge near Yat Tung Estate.

2. Assessment Criteria

2.1 Construction Noise

Airborne Construction Noise during Normal Hours

- 2.1.1.1 The Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM) stipulates criteria of 65 – 75dB(A) for daytime construction activities, as shown in **Table 2.1**.

Table 2.1 Noise standards for daytime construction activities

Uses	Noise Standards ^{[1][2]} , L _{eq} (30min) dB(A)
	0700 – 1900 hours on any day not being a Sunday or general holiday
All domestic premises including temporary housing accommodation	75
Hotel and hostels	75
Educational institutions including kindergartens, nurseries and all others where unaided voice communication is required	70 65 (During examination)

Notes:

[1] The above standards apply to uses that rely on opened windows for ventilation.

[2] The above standards should be viewed as the maximum permissible noise levels assessed at 1m from the external facade.

Blasting

- 2.1.1.2 The administrative and procedural control of all blasting operations in Hong Kong is vested in the Mines Division of the Civil Engineering and Development Department (CEDD). The Dangerous Goods (General) Regulations, Chapter 295 also stipulates that no person shall carry out blasting unless he possesses a valid mine blasting certificate to be issued by the Mines Division of CEDD. The Superintendent of Mines will review the application on a case-by-case basis before issuing the Mine Blasting Certificate. Although there is no statutory noise level for blasting, the noise associated with the removal of debris and rocks are controlled under the EIAO-TM.

3. Airborne Construction Noise Impact Assessment

3.1 Airborne Construction Noise Impact Assessment Methodology

3.1.1.1 The construction noise impact assessment during daytime, on weekdays other than general holidays has been assessed in accordance with the methodology in paragraphs 5.3 and 5.4 of Annex 13 of the EIAO-TM.

3.1.1.2 Construction noise assessment will be conducted based on the following procedures:

- Determine 300m from the boundary of the Project and from any works of the Project;
- Identify and locate representative NSRs that may be affected by the works;
- Obtain the construction method and work sequence for the construction period;
- Obtain the construction plant inventory for each corresponding construction work sequence;
- Determine the Sound Power Levels (SWLs) of the plant items according to the information stated in the GW-TM or other recognised sources of reference, where appropriate;
- Calculate the correction factors based on the distance between the Noise Sensitive Receivers (NSRs) and the notional noise source positions of the work sites;
- Apply corrections for façade, distance, barrier attenuation, acoustic reflection where applicable;
- Predict construction noise levels at the NSRs;
- Quantify the level of impact at the NSRs, in accordance with GW-TM;
- Predict the cumulative noise impacts for any concurrent construction works (e.g. Tung Chung New Town Extension (TCNTE)) in the vicinity of the proposed work;
- For any exceedance of noise criteria, all practical mitigation measures such as alternative construction methodology, quiet plant, silencer, enclosure, etc, shall be examined to alleviate the predicted noise impacts as much as practicable; and
- Consideration of noise mitigation measures will follow Annex 13 of EIAO-TM and EIAO Guidance Note "Preparation of Construction Noise Impact Assessment under the Environmental Impact Assessment Ordinance" [GN 9/2010].

3.2 Identification of Assessment Area and Noise Sensitive Receivers

3.2.1.1 The assessment area for airborne construction noise includes area within 300m from the boundary of the Project and the works of the Project. This CNMP presents the representative NSRs for TCW station, EAP/EEP and Launching/ Retrieval Shaft and the barging facility.

- 3.2.1.2 The existing NSRs has been reviewed by site visits in November 2022. It is observed that Tung Chung Area 54 has become Yu Nga Court and should be considered as an existing NSR. The number of storeys of the NSR have also been updated from 40 to 31.
- 3.2.1.3 The planned NSRs has been reviewed with the latest Recommended Outline Development Plan (RODP), updated population intensity and planning parameter, updated population intake years of TCNTE West collated from CEDD on 14 December 2022.
- 3.2.1.4 From the above information, there is no change to existing and planned NSR except for Yu Nga Court. Other representative NSRs presented in approved EIA for Tung Chung Line Extension (AEIAR-235/2022) remain unchanged and considered still valid.
- 3.2.1.5 Representative NSRs locations that would be affected by the construction noise have been summarised in **Table 3.1** below and the representative Noise Assessment Point (NAP) are shown in **Appendix 3.1**.

Table 3.1 Representative NSRs for airborne construction noise

No. ^[1]	NSR ^[2]	Uses ^[3]	No. of Storey	NAP ^[6]	Population Intake Year
Existing NSRs					
E4	Le Bleu Deux	R	2 – 15	LED-06a	N/A ^[5]
E8a	Tung Chung Crescent	R	28 – 42	TCC-01a, TCC-07a, TCC-09a	N/A ^[5]
E8b	Sunshine House International Pre-School (Tung Chung)	E	1	ESHI-01a	N/A ^[5]
E10	Ma Wan Chung	V	1 – 3	MWC-01a	N/A ^[5]
E11a	Yat Tung Estate	R	40 – 41	YTE-01a, YTE-01b, YTE-04a, YTE-05a, YTE-14a, YTE-16a	N/A ^[5]
E11b	Tung Chung Catholic School Primary Section	E	8	ETCCS-01a	N/A ^[5]
E12	Mun Tung Estate	R	31 – 40	MTE-01a	N/A ^[5]
E16	Ha Ling Pei	V	1 – 3	HLP-01a, HLP-02a	N/A ^[5]
E22	Yu Nga Court ^[7]	R	31 ^[8]	A54-01a	N/A ^[5]
Planned NSRs					
P2 ^[4]	Residential Premises in Tung Chung West – Area 60	R	3 ^[4]	A60-03a	2025

Notes:

- [1] The assessment will only include NSRs which rely on opened windows for ventilation.
- [2] Only the first layer of NSRs has been selected for assessment.
- [3] R – Residential Premises, E – Educational Institutions, V – Village type development.
- [4] The latest Recommended Outline Development Plan (RODP), updated population intensity and planning parameter, updated population intake years of TCNTE West have been collated from CEDD on 14 December 2022.
- [5] N/A – Not applicable.
- [6] NAP – Noise Assessment Point.
- [7] Yu Nga Court (E22) was previously known as planned NSR Tung Chung Area 54 (P7) in the approved EIA for Tung Chung Line Extension (AEIAR-235/2022).
- [8] The number of storeys of Yu Nga Court is updated based on observations of site visits in November 2022.

3.3 Inventory of Noise Sources

- 3.3.1.1 According to Section 4.4.2.2 of the approved EIA for Tung Chung Line Extension (AEIAR-235/2022), key airborne construction activities of TCW station, EAP/EEP and launching/ retrieval shaft and the barging facility have been identified for noise assessment and summarized below:

- Construction of the Tunnel Boring Machine (TBM) launching shaft/ retrieval shaft near Tung Chung Crescent;
- Construction of the Emergency Access Point (EAP) / Emergency Egress Point (EEP) at the artificial slope located west of Shun Tung Road;
- Construction of the underground TCW Station;
- Construction of the above-ground vent shaft structures and the station entrances at TCW Station;
- Establishment and operation of the barging facility;
- Drill-&-blast for EAP / EEP and TCW Station; and
- Works such as temporary traffic management (TTM), landscaping, minor reinstatement, material delivery, etc.

3.3.1.2 The construction activities above, plant inventory and construction programme have been reviewed in view of the best available information when preparing this CNMP.

3.3.1.3 To compare with the approved EIA for Tung Chung Line Extension (AEIAR-235/2022), changes have been made as follows:

- Updated QPME labels;
- Inclusion of demolition of footbridge near Yat Tung Estate with the use of concrete crusher;
- Additional breaker for site clearance of TCW, EAP / EEP and launching shaft / retrieval shaft;
- No reprovision of footbridge near Yat Tung Estate; and
- Updated the construction programme of launching shaft / retrieval shaft and demolition of existing footbridge near Yat Tung Estate.

3.3.1.4 From the latest design of TCNTE, there is no need for reprovision of footbridge near Yat Tung Estate, and the Project Proponent will take over the demolition of footbridge near Yat Tung Estate from the project proponent of TCNTE. Other than this, for concurrent projects, the latest construction programme, workfronts and Powered Mechanical Equipment (PME) have been confirmed with relevant project proponents. Since the construction programme of launching shaft / retrieval shaft under Contract No. 1201 has been updated, the cumulative noise levels will be different from that in the approved EIA for Tung Chung Line Extension (AEIAR-235/2022).

3.3.1.5 The inventory and the percentage on time of PME have been confirmed by construction professionals as workable and practicable, including the demolition of footbridge near Yat Tung Estate. According to the latest construction methodology, the blasting will only be conducted once per day in each location and the blasting works should be scheduled according to the expected delivery time that agreed with CEDD. As the blasting will last for very short duration and be infrequent, it will not cause adverse impacts to NSRs.

3.3.1.6 The construction activities would be carried out with the use of PME including trench cutters, excavators, lorries, mobile cranes, concrete pumps, concrete mixers, etc. SWLs for each PME would be established according to GW-TM and other relevant information as appropriate. **Table 3.2** presents the SWLs for each PME.

Table 3.2 SWLs of PMEs

PME	Unmitigated SWLs			Quiet Plant			Mitigated Scenario			
	ID	Description	PME SWL, dB(A)	ID ^{[1][2]}	Model / Size	PME SWL, dB(A)	Silencer, dB(A)	Enclosure, dB(A)	Barrier, dB(A)	PME SWL, dB(A)
Air Compressor	CNP002	Air compressor, air flow > 10m ³ /min and ≤ 30m ³ /min	102	-	-	-	-	-	-5	97
Air Compressor	CNP003	Air compressor, air flow > 30m ³ /min	104	EPD-09607	AIRMAN, PDS100S-5C5	93	-	-	-5	88
Bar Bender and Cutter	CNP021	Bar bender and cutter (electric)	90	-	-	-	-	-	-10	80
Concrete Crusher, excavator mounted	CPME#	Concrete Crusher, excavator mounted	103	-	-	-	-	-	-	103
Breaker, excavator mounted	CNP028	Breaker, excavator mounted (hydraulic)	122	-	-	-	-	-15	-5/-10	117/112/107 ^[5]
Concrete Lorry Mixer/ Concrete Truck	CNP044	Concrete lorry mixer	109	-	-	-	-	-15	-5	104/94 ^[7]
Concrete Mixer/ Bentonite Mixer/ Grout Mixer	CNP045	Concrete mixer (electric)	96	-	-	-	-	-	-5/-10	91/86 ^[4]
Concrete Pump/ Electric Bentonite Circulation Pump	CNP047	Concrete pump, stationary / lorry mounted	109	-	-	-	-	-15	-10	99/94 ^[8]
Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	CNP048	Crane, mobile / barge mounted (diesel)	112	EPD-09130	KOBELCO, Model:CKS900	101	-	-	-5	96
Gantry Crane	CNP049	Crane, tower (electric)	95	-	-	-	-	-	-5	90
Flat-top Barge	CNP061	Flat-top Barge	104	-	-	-	-	-	-	104
Electric drill/ Rock driller	CNP064	Drill, percussive, hand—held (electric)	103	EPD-08781	HILTI, TE1000-AVR	99	-	-	-5	94
Dump Truck	CPME#	Dump truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne	105	-	-	-	-	-	-5	100
Dump Truck with grab	CPME#	Dump truck, with grab, 5.5 tonne < gross vehicle weight ≤ 38 tonne	105	-	-	-	-	-	-	105
Drill Rig, DTH Drilling Machine	CPME#	Drill Rig, rotary type (Diesel)	110	-	-	-	-	-	-10	100

PME	Unmitigated SWLs			Quiet Plant			Mitigated Scenario			
	ID	Description	PME SWL, dB(A)	ID ^{[1][2]}	Model / Size	PME SWL, dB(A)	Silencer, dB(A)	Enclosure, dB(A)	Barrier, dB(A)	PME SWL, dB(A)
Excavator	CNP081	Excavator / loader, wheeled / tracked	112	EPD-13043/ EPD-07150	DOOSAN, Model: DX300LC/ YANMAR, Model: SV08-1A	104/90	-	-	-5	99/85
Generator	CNP101	Generator, standard	108	EPD-10735 ^[3]	DENYO, Model: DCA-45LSK	87	-	-	-5	82
Generator	CNP103	Generator, super silenced, 70 dB(A) at 7 m	95	EPD-10735 ^[3]	DENYO, Model: DCA-45LSK	87	-	-	-5	82
Lorry	CNP141	Lorry	112	CPME#	5.5 tonnes < gross vehicle weight ≤ 38 tonne	105	-	-	-5	100
Lorry, with crane/grab	CPME#	Lorry, 5.5 tonnes < gross vehicle weight ≤ 38 tonnes	105	-	-	-	-	-	-5	100
Piling, diaphragm wall, bentonite filtering plant/ Desander/ Slurry Treatment Plant / Grout Batch Plant / Filter Press Machine	CNP162	Piling, diaphragm wall, bentonite filtering plant	105	-	-	-	-	-	-10	95
Piling, Diaphragm Wall	CNP163	Piling, D-wall, hydraulic extractor	90	-	-	-	-	-	-10	80
Trench Cutter	CNP164	Piling, large diameter bored, grab and chisel	115	-	-	-	-	-15	-10	105 /100 ^[9]
Power Rammer (Petrol)	CNP169	Power rammer (petrol)	108	-	-	-	-	-	-10	98
Vibratory Poker	CNP170	Poker, vibratory, hand held	113	CPME#	Poker, vibratory, hand-held (electric)	102	-	-	-10	92
Rock Drill	CNP182	Rock Drill, crawler mounted (hydraulic)	123	-	-	-	-	-	-10	113
Roller, Vibratory	CNP186	Roller, vibratory	108	EPD-06997	SAKAI, Model: SW502S-1	94	-	-	-5	89
Saw, Circular, Wood	CNP201	Saw, circular, wood	108	-	-	-	-	-	-10	98
Tug Boat	CNP221	Tug boat	110	-	-	-	-	-	-	110
Ventilation Fan	CNP241	Ventilation fan	108	-	-	-	-15	-	-10	98/93 ^[6]
Water pump	CNP281	Water pump (electric)	88	-	-	-	-	-	-10	78

PME	Unmitigated SWLs			Quiet Plant			Mitigated Scenario			
	ID	Description	PME SWL, dB(A)	ID ^{[1][2]}	Model / Size	PME SWL, dB(A)	Silencer, dB(A)	Enclosure, dB(A)	Barrier, dB(A)	PME SWL, dB(A)
Water Pump (petrol)	CNP282	Water pump (petrol)	103	-	-	-	-	-	-10	88
Water Pump, Submersible	CNP283	Water pump, submersible (electric)	85	-	-	-	-	-	-10	75
Chiller Plant ^[10]	--	Chiller Plant	88	-	-	-	-	-	-	88

Notes:

- [1] PME with code "EPD-XXXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory. QPME with same or lower SWL will be arranged onsite as far as practicable.
- [2] The SWL of quiet plant with code "CPME#" are based on SWLs of other commonly used PME from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licenses/guidance/files/OtherSWLs.pdf
- [3] EPD-03845 has been expired and replaced by EPD-10735. The model / size and SWL of PME remain unchanged.
- [4] Barrier with 5 dB(A) noise reduction is applied to EAP/EEP and Launching Shaft / Retrieval Shaft, while barrier with 10 dB(A) noise reduction is applied to TCW station.
- [5] Barrier with 5 dB(A) noise reduction is applied to EAP/EEP, barrier with 10dB(A) noise reduction is applied to footbridge demolition and the site clearance for TCW and Launching Shaft/ Retrieval Shaft, while enclosure with 15 dB(A) noise reduction is applied to Launching Shaft / Retrieval Shaft.
- [6] Barrier with 10 dB(A) noise reduction is applied to EAP/EEP, Cut & Cover Tunnel and Launching Shaft / Retrieval Shaft, while silencer with 15 dB(A) noise reduction is applied to TCW station.
- [7] Barrier with 5 dB(A) noise reduction is applied to construction of Diaphragm Wall on the Station West side, foundation work of Launching Shaft / Retrieval Shaft, structural works, site clearance and site reinstatement while enclosure with 15 dB(A) noise reduction is applied to construction of Diaphragm Wall on the Station East side.
- [8] Barrier with 10 dB(A) noise reduction is applied to Launching Shaft / Retrieval Shaft and Cut & Cover Tunnel, while enclosure with 15 dB(A) noise reduction is applied to TCW station.
- [9] Barrier with 10 dB(A) noise reduction is applied to Launching Shaft / Retrieval Shaft, while enclosure with 15 dB(A) noise reduction is applied to TCW station.
- [10] The SWL of chiller plant has made reference to CNMP submission of Shatin to Central Link Contract No. 1107 - Diamond Hill to Kai Tak Tunnel.

3.3.2 Construction Noise Control Measures Proactively Adopted

3.3.2.1 Review of the practicality of use of following quieter construction equipment / methods has been conducted, which includes:

- (a) Hydraulic crusher/hand-held concrete crusher for demolition; and
- (b) Adoption of QPME.

3.3.2.2 Based on the review on the construction works, QPME have been adopted and hydraulic crusher/hand-held concrete crusher for footbridge demolition will be adopted as far as possible which the use of excavator mounted breaker is assumed for calculation as conservative assessment. For (i) Diamond wire saw/ non-explosive chemical agent for rock/concrete breaking; and (ii) silent piling by press-in method for sheet piles, the Contractor will further review during the detailed design over the construction stage.

3.3.2.3 During the design of the construction methodology, the design team has been fully aware of the NSRs in the proximity of the works sites, in particular the launching shaft close to Tung Chung Crescent, TCW station construction near Yat Tung Estate and the EAP / EEP on the opposite of Tung Chung Crescent. In order to minimize construction noise impact as much as possible at the outset, the following control measures have been incorporated in the construction methodology:

- Division of sub-zones for D-wall sequential construction works; and
- Advance the construction of the station slab structure of TCW Station.

3.3.2.4 With the control measures stated above and adoption of noise barrier or enclosure, the predicted construction noise levels comply with the noise criteria. Nevertheless, the following enhancement will be adopted to further reduce the impact to the nearby NSRs as far as possible:

- Noise enclosure for the mucking out location at the TBM launching shaft / retrieval shaft near Tung Chung Crescent;
- Screen cover for the mucking out location at the EAP/EEP near Shun Tung Road (Refer to **Appendix 3.2**).

3.3.2.5 For noise enclosure for the mucking out location at the TBM launching shaft / retrieval shaft near Tung Chung Crescent, details will be provided in another EP submission namely “Plan on Noise Enclosure at Tung Chung Crescent”.

3.4 Prediction and Evaluation of Construction Noise Impact

3.4.1.1 The construction activities involve site clearance, formation, superstructure, site reinstatement, etc. As discussed in **Section 3.3**, the Project Proponent will take over the demolition of footbridge near Yat Tung Estate from the project proponent of TCNTE . It is anticipated that the Project will be implemented in phases. The construction programme has been given in **Appendix 3.3**.

3.4.1.2 As stated in the approved EIA for Tung Chung Line Extension (AEIAR-235/2022), the construction would mainly comprise the activities as described in **Section 3.3**. The corresponding SWLs of these activities have been estimated according to the PME's SWLs and the assessment methodology in the GW-TM. **Table 3.2** presents the SWLs for each PME. **Appendix 3.4** gives the plant inventory adopted for each workforce and **Appendix 3.5** shows the locations of workforces adopted for this construction noise assessment.

3.4.1.3 As mentioned in above sections, there is no update on the calculation methodology and representative NAPs. The construction programme and plant inventory have been updated as mentioned in **Section 3.3**. With the implementation of mitigation measures and good site practices, construction noise impacts are expected to achieve full compliance of relevant noise criteria.

3.5 Mitigation of Construction Noise Impact

3.5.1.1 To mitigate noise impacts during construction phases, the following mitigation measures have been considered:

- Good site practices to limit noise emissions at the source;
- Use of QPME;
- Use of temporary noise barriers and noise enclosure to screen noise from relatively static PMEs;
- Use of temporary movable enclosure to screen noise for the construction of diaphragm Wall near Yat Tung Estate; and
- Alternative use of plant items within on worksite, wherever practicable.

3.5.1.2 The above mitigation measures would need to be implemented in works sites as good practices where appropriate.

3.5.2 Good Site Management Practices

3.5.2.1 Good site practice and noise management techniques could considerably reduce the noise impact from construction site activities on nearby NSRs. The following measures should be practised during each phase of construction:

- only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;
- machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
- plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;
- silencers or mufflers which available on construction equipment should be properly fitted and maintained during the construction works;
- spoil transportation routes should be directed away from NSRs as far as practicable;
- mobile plant should be sited as far away from NSRs as possible and practicable;

- material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities;
- noise monitoring at selected NSRs should be conducted as far as practicable; and
- provide designated unloading areas at barging point away from the NSR as far as possible.

3.5.2.2 The benefits of these techniques can vary according to specific site conditions and operations. The environmental noise climate would certainly be improved with these control practices, although the improvement can only be quantified during implementation when specific site parameters are known.

3.5.3 Use of Quality Powered Mechanical Equipment (QPME)

3.5.3.1 The use of quiet plant associated with the construction works is made reference to the PME listed in the TM or the QPME/ other commonly used PME listed in Environmental Protection Department (EPD) web pages as far as possible which includes the SWLs for specific quiet PME. It is generally known (supported by field measurement) that particular models of construction equipment are quieter than standard types given in the GW-TM.

3.5.4 Use of Movable Noise Barrier and Full Enclosure for Relatively Fixed Plant Source

3.5.4.1 Movable temporary noise barriers that can be located close to noisy plant and be moved concurrently with the plant along a worksite can be very effective for screening noise from NSRs. A typical design which has been used locally is a wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m^2 on a skid footing with 25mm thick internal sound absorptive lining. This measure is particularly effective for low level zone of NSRs. A cantilevered top cover would be required to achieve screening benefits at upper floors of NSRs.

3.5.4.2 Movable temporary noise barriers will be used for some PME (e.g. excavator). It is anticipated that suitably designed barriers could achieve at least 5dB(A) reduction for movable plant and 10dB(A) for stationary plant.

3.5.4.3 For the use of movable noise barrier for at-grade construction works, for example diaphragm wall installation, working space would be considered for their manoeuvrability and placement. Generally, sufficient separation between major plants during at-grade construction works is envisaged to cater for the use of temporary movable noise barriers onsite. Temporary movable noise barrier can be placed close to noise source locally as far as practicable.

3.5.4.4 The use of standard enclosure has been considered in this assessment to shelter relatively fixed plant including concrete pump, etc. These standard enclosures can provide at least 15dB(A) noise reduction.

3.5.5 Use of 3-side temporary movable enclosure to screen noise for the construction of diaphragm wall near Yat Tung Estate

3.5.5.1 As the workfronts of construction of diaphragm wall is in the closest proximity (i.e. approximately 10m) to the residential premises among other construction activities, 3-side temporary movable enclosure is used to house the PME including trench cutter for construction works of diaphragm wall at TCW Station near Yat Tung Estate. In general, the 3-side temporary movable noise enclosure will be located to position above the prospective location for the diaphragm wall panel of TCW Station. Once the 3-side temporary movable enclosure is in position, the trench cutter shall move inside the 3-side temporary movable enclosure and start the trenching for diaphragm wall panel. Once the trenching is completed, the trench cutter will move out from the 3-side temporary movable enclosure for subsequent works of diaphragm wall construction. Then, this operation will be repeated for next diaphragm wall panel construction. This arrangement will be further reviewed in detailed design and construction stages. The enclosure should provide at least 15 dB(A) noise reduction, which is the same as proposed in the approved EIA report for Tung Chung Line Extension (AEIAR-235/2022) The design of the enclosure shall include the followings:

- Gaps and openings at joints should be avoided;
- Enclose the equipment on three sides with cover; and
- Absorptive lining should be provided at the sides facing the PME as far as practicable.

3.5.6 Installation of noise barrier along the site boundary to screen noise for the NSR at Ma Wan Chung

3.5.6.1 As the workfronts of construction of TCW Station and associated vent shaft structures are in close proximity to a residential receiver at Ma Wan Chung (MWC-01a). A noise barrier is proposed along the site boundary next to the concerned village house, which is the same as proposed in the approved EIA report for Tung Chung Line Extension (AEIAR-235/2022). The location and the section drawing of the proposed barrier is shown in **Appendix 3.6**. The design of the barrier shall include the followings:

- Gaps and openings at joints should be avoided;
- The length of the barrier should be about 27m while the height should be about 4m; and
- Surface density of the barrier no less than 7kg/m².

3.5.6.2 A summary of the movable temporary noise barrier, standard enclosure, 3-side temporary movable enclosure adopted for various PMEs is given in **Table 3.3** below and indicative drawings for barrier and enclosure are shown in **Appendix 3.7**.

Table 3.3 Summary of barrier and standard enclosure adopted for PMEs

PME	Barrier/ Enclosure	Applied Work Locations ^[1]	Attenuation, dB(A)
Air Compressor	Barrier	A, B	-5
Bar Bender and Cutter	Barrier	A, B	-10
Breaker, excavator mounted	Barrier	A, B	-5 / -10 ^[4]
	Enclosure	B ^[2]	-15
Concrete Lorry Mixer/ Concrete Truck	Barrier	A, B	-5
	3-side temporary movable enclosure	A ^[3]	-15

PME	Barrier/ Enclosure	Applied Work Locations ^[1]	Attenuation, dB(A)
Concrete Mixer/ Bentonite Mixer/ Grout Mixer	Barrier	A, B	-5 / -10
Concrete Pump/ Electric Bentonite Circulation Pump	Barrier	B	-10
	Enclosure	A	-15
Gantry Crane	Barrier	B	-5
Mobile Crane/ Service Crane/ Lifting Crane / Crawler Crane/ Lifting crane	Barrier	A, B	-5
Electric drill/ Rock driller	Barrier	A, B	-5
Dump Truck	Barrier	A, B	-5
Drill Rig, DTH Drilling Machine	Barrier	A, B	-10
Excavator	Barrier	A, B	-5
Generator	Barrier	A, B	-5
Lorry	Barrier	A, B	-5
Lorry, with crane/grab	Barrier	A	-5
Piling, diaphragm wall, bentonite filtering plant/ Desander/ Slurry Treatment Plant / Grout Batch Plant / Filter Press Machine	Barrier	A, B	-10
Piling, diaphragm Wall	Barrier	A	-10
Trench Cutter	Barrier	B	-10
	3-side temporary movable enclosure	A ^[3]	-15
Power Rammer (Petrol)	Barrier	A, B	-10
Vibratory Poker	Barrier	A, B	-10
Rock Drill	Barrier	A, B	-10
Roller, Vibratory	Barrier	A, B	-5
Saw, Circular, Wood	Barrier	A, B	-10
Ventilation Fan	Barrier	B	-10
	Silencer	A	-15
Water pump	Barrier	A	-10
Water Pump (petrol)	Barrier	A, B	-10
Water Pump, Submersible	Barrier	B	-10

Notes:

- [1] A: TCW Station, B: EAP / EEP and Launching Shaft / Retrieval Shaft
 [2] Only the breaker, excavator mounted at launching shaft would be mitigated by full enclosure.
 [3] The 3-side temporary movable enclosure would only be applied during the construction of diaphragm wall at TCW. For Concrete Lorry Mixer, 3-side temporary movable enclosure would be applied only at the workfronts at the east side. For Trench Cutter, 3-side temporary movable enclosure would be applied at the workfronts at both the east and west side.
 [4] According to the approved EIA report for Tuen Mun South Extension (AEIAR-236/2022) and the "Best Practice Guide for Environmental Protection on Construction Sites", page 6-10, published by Hong Kong Construction Association, May 2013, excavator-mounted breaker with soundproof hammer bracket can provide a noise reduction of up to 10 dB(A).

3.5.6.3 With the adoption of the above mitigation measures, the construction noise impacts during the construction period have been calculated in accordance with the work programme and are given in **Appendix 3.8**.

3.6 Prediction of Noise Impact with Implementation of Noise Mitigation Measures

3.6.1.1 **Appendix 3.8** presents the calculated construction noise impacts at representative NSRs. Concurrent projects such as TCNTE has been considered for the cumulative noise impact. The predicted construction noise impacts at the NSRs are summarised in **Table 3.4**.

Table 3.4 Summary of predicted construction noise impact at NSRs

No. ^[1]	NSR	NAP ^{[2],[3]}	Uses ^[4]	Leq (30min), dB(A)				Duration of Exceedance Months
				Criterion ^[5]	Mitigated Noise Level	Cumulative Noise Level	Exceedance	
Existing NSRs								
E4	Le Bleu Deux	LED-06a	R	75	70	70 ^[6]	-	-
E8a	Tung Chung Crescent	TCC-01a	R	75	73	73 ^[6]	-	-
		TCC-07a	R	75	71	71 ^[6]	-	-

No. ^[1]	NSR	NAP ^{[2][3]}	Uses ^[4]	Leq (30min), dB(A)				Duration of Exceedance Months
				Criterion ^[5]	Mitigated Noise Level	Cumulative Noise Level	Exceedance	
		TCC-09a	R	75	75	75 ^[6]	-	-
E8b	Sunshine House International Pre-School (Tung Chung)	ESHI-01a	E	70 (65)	65	65 ^[6]	-	-
E10	Ma Wan Chung	MWC-01a	V	75	73	73	-	-
E11a	Yat Tung Estate	YTE-01a	R	75	75	75	-	-
		YTE-01b	R	75	71	72	-	-
		YTE-04a	R	75	74	74	-	-
		YTE-05a	R	75	66	66	-	-
		YTE-14a	R	75	73	73	-	-
	YTE-16a	R	75	73	73	-	-	
E11b	Tung Chung Catholic School Primary Section	ETCCS-01a	E	70 (65)	64	64	-	-
E12	Mun Tung Estate	MTE-01a	R	75	68	69	-	-
E16	Ha Ling Pei	HLP-01a	V	75	63	65	-	-
		HLP-02a	V	75	63	65	-	-
E22	Yu Nga Court	A54-01a ^[7]	R	75	70	70 ^[6]	-	-
Planned NSRs								
P2	Residential Premises in Tung Chung West	A60-03a	R	75	59	62	-	-

Notes:

- [1] The assessment will only include NSRs which rely on opened windows for ventilation.
- [2] NAP- Noise Assessment Point. Only the first layer of NSRs has been selected for assessment.
- [3] The latest Recommended Outline Development Plan (RODP), updated population intensity and planning parameter and updated population intake years of TCNTE West have been collated from CEDaD on 14 December 2022.
- [4] R – Residential Premises, E – Educational Institutions, V – Village type development.
- [5] Values in parentheses indicate the noise criterion during examination period of educational institution.
- [6] There is no concurrent project near NAPs. Hence, the cumulative noise is same as the mitigated noise level.
- [7] Yu Nga Court (E22) was previously known as planned NSR Tung Chung Area 54 (P7) in the approved EIA for Tung Chung Line Extension (AEIAR-235/2022).

3.6.1.2 Construction noise impacts arising from the proposed and concurrent projects at all planned and existing NSRs including residential premises and schools during normal and examination periods can be properly mitigated by implementing the proposed noise control measures. Given the transient nature of visitor using hiking trails and mitigation measures are recommended to reduce the noise emission, adverse noise impact is not anticipated.

3.6.1.3 The implementation schedule of the noise mitigation measures is summarized in **Appendix 3.9**.

4. Conclusion

This CNMP (for Works Contract No. 1201) has identified the noise source inventory and assess the effectiveness of construction noise mitigation measures, including the use of quieter powered mechanical equipment, noise barriers and noise enclosures for works at TCW station, EAP/EEP and Launching / Retrieval Shaft, and the barging facilities as recommended in the approved EIA report for Tung Chung Line Extension (AEIAR-235/2022). With the implementation of the recommended mitigation measures, noise impacts during construction phases are expected to achieve full compliance of relevant noise criteria.

This CNMP focused on the construction works conducted during June 2023 to October 2023 only and the remaining construction period is still under design stage and subject to change. The Contractor will submit other CNMP for the remaining construction period once the details become available. If there is any update on the construction works conducted from June 2023 to October 2023, a revised CNMP will be submitted for EPD approval.

Appendix 3.1

Locations of Representative NSRs for airborne construction noise (Extracted from AEIAR-235/2022)

Appendix 3.1

Locations of Representative NSRs for airborne construction noise (Extracted from AEIAR-235/2022)



LEGEND

- TUNNEL
- UNDERGROUND STATION
- LATEST WORKS AREA
- LATEST UNDERGROUND WORKS SITE
- 300m ASSESSMENT AREA
- COUNTRY PARK
- REPRESENTATIVE NOISE ASSESSMENT POINT (AIRBORNE CONSTRUCTION NOISE)

APPENDIX 4.4.6A

APPENDIX 4.4.6B

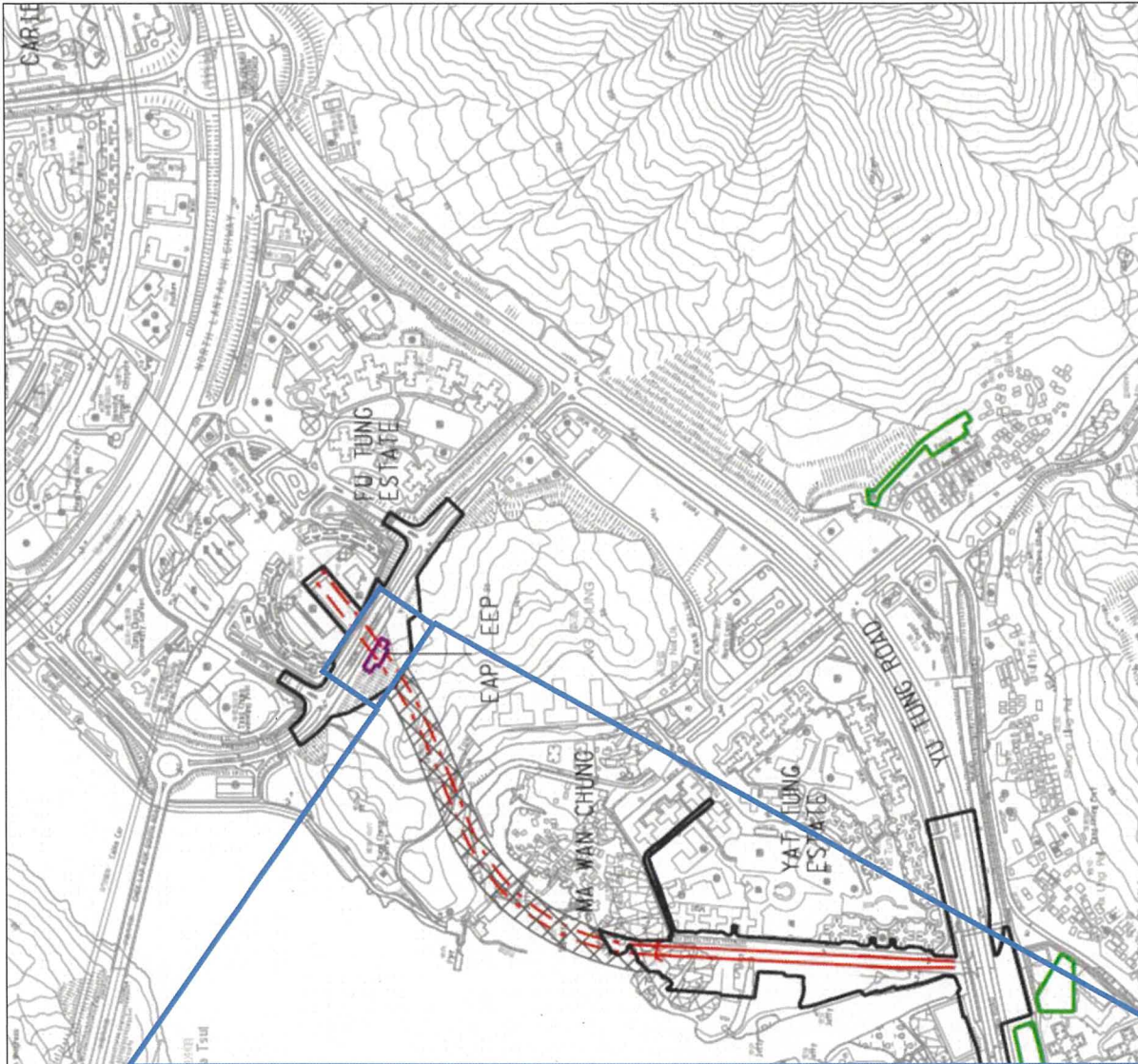
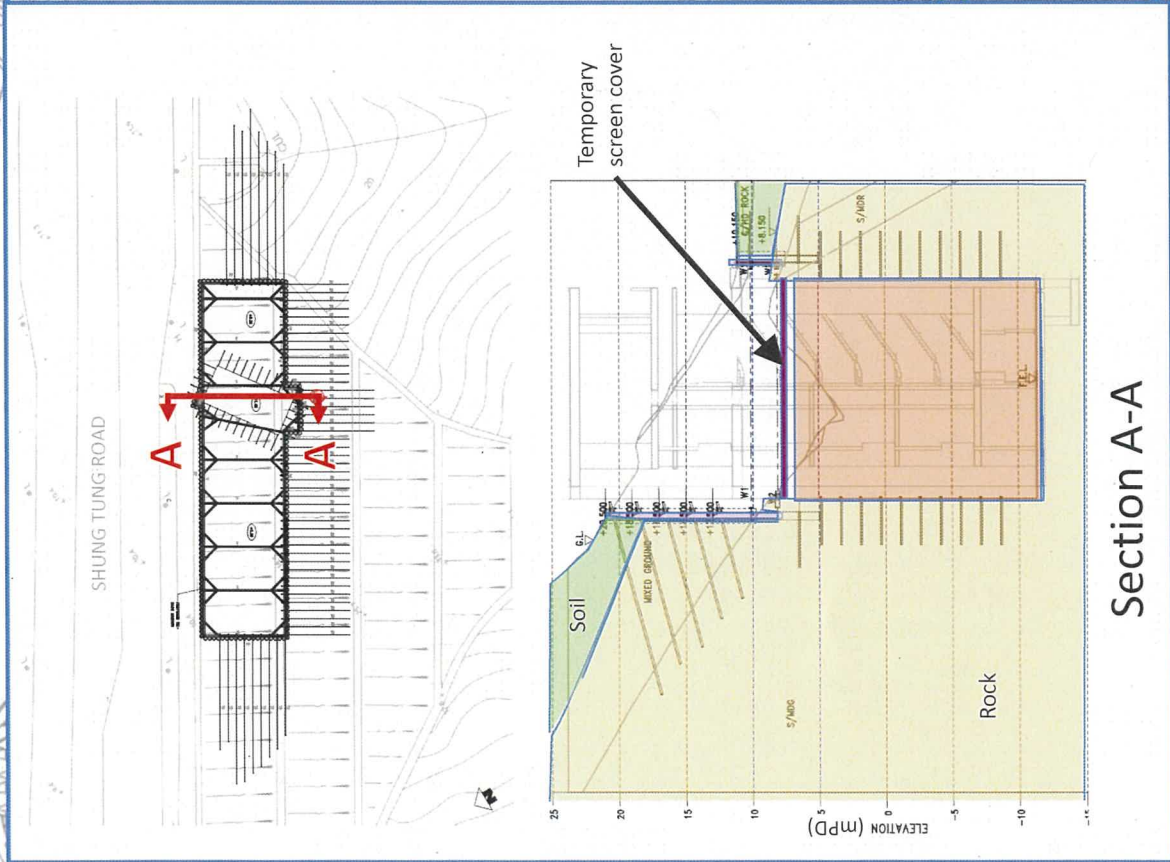
APPENDIX 4.4.6C

REV	DATE	APPROVED BY	DESCRIPTION
A	07/02/23	FC	FIRST ISSUE
DR	07/02/23	FC	
DESIGNED	07/02/2023	FC	
CHECKED		EL	
APPROVED		FC	
DATE	07/02/2023		
<p>FOR THE FINAL SUBMITTAL TO THE TRANSPORT AND INFRASTRUCTURE AUTHORITY (TIA) FOR APPROVAL OF THE PROPOSED TUNNEL AND UNDERGROUND STATION UNDER THE MTR (CONSTRUCTION NOISE) REGULATIONS (CAP 314) AND THE MTR (CONSTRUCTION NOISE) REGULATIONS (CAP 314) AND THE MTR (CONSTRUCTION NOISE) REGULATIONS (CAP 314).</p>			
<p>MTR</p>			
<p>ARUP One Arup & Partners Hong Kong Limited</p>			
<p>APPENDIX 4.4.6.dgn</p>			
<p>AS SHOWN</p>			
<p>SCALE</p>			
<p>REV. A</p>			
<p>TITLE</p>			
<p>C1202 - EIA for Tung Chung Line Extension</p>			
<p>PREDICTED NOISE LEVELS OF REPRESENTATIVE NOISE ASSESSMENT POINTS (AIRBORNE CONSTRUCTION NOISE)</p>			

Appendix 3.2

Screen cover for EAP/EEP

Typical Screen Cover at EAP/EEP



LEGEND

	TCW EXTENSION ALIGNMENT
	UNDERGROUND STATION
	TCW EXTENSION ALIGNMENT
	TUNNEL
	LATEST WORKS AREA
	LATEST WORKS SITE
	LATEST UNDERGROUND WORKS SITE

* The figure is for indicative purpose only and the actual screen cover are subject to the detailed design and site condition.



Appendix 3.3

Tentative Construction Programme

Appendix 3.4

Detailed PME Inventory

PME Inventory for TCW

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW Station - Plant Inventory (Modified Base Scheme)- Site Clearance

Site Clearance at TCW											
Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction	Units	PME Reference	Unmitigated		Mitigated		Correction	Total SWL
						Single Unit	Total SWL	Single Unit	Total SWL		
			dB(A)			dB(A)	dB(A)	dB(A)		dB(A)	dB(A)
TCW Site Clearance	Excavator	90	0	2	CNP081	112	115	90	88	-5	88
	Breaker, excavator mounted/ Hydraulic breaker	30	-5	1	CNP028	122	117		107	-10	107
	Dump Truck	70	-2	2	CPME#	105	106		101	-5	101
						Total SWL	119		Total SWL		108

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW Station - Plant Inventory (Modified Base Scheme)- Dwall (All Hit Panel), Mini-pile/ Pre-bored H-piles (Station Box-Foundation Works at East)

Construction of Diaphragm Wall on Station East Side												
Works Area/ Activity	PME	% Operating	Time [1]	Time Correction	Units	PME Reference	Unmitigated			Mitigated		
							Single Unit	Total SWL	dB(A)	Single Unit	Total SWL	dB(A)
E-Zone D Construction of Diaphragm Wall - Dwall Rig	Piling, Diaphragm Wall	90	90	0	1	CNP163	90	113		Barrier	-10	80
	Trench Cutter	70	70	-2	1	CNP164	115	113	Enclosure	-15	98	
E-Zone D Construction of Diaphragm Wall- Ancillary Plant	Piling, Diaphragm Wall	90	90	0	1	CNP163	90	90	Barrier	-10	80	
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	70	-2	1	CNP048	112	110	Barrier	-5	94	
	Concrete Lorry Mixer/ Concrete Truck	40	40	-4	1	CNP044	109	105	Enclosure	-15	90	
							Total SWL	112			Total SWL	96
							Max SWL [4]	113			Max SWL [4]	99
E-Zone D Installation of Mini-piles - Drill Rig	Drill Rig, DTH Drilling Machine	90	90	0	1	CPME#	110	110	Barrier	-10	100	
		70	70	-2	1	CNP164	115	110	Barrier	-5	94	
E-Zone D Installation of Mini-piles - Ancillary Plant	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	70	-2	1	CNP048	112	110	Barrier	-5	94	
							Total SWL	110			Total SWL	94
							Max SWL [5]	110			Max SWL [5]	100
E-Zone E Construction of Diaphragm Wall - Dwall Rig	Piling, Diaphragm Wall	90	90	0	1	CNP163	90	90	Barrier	-10	80	
	Trench Cutter	70	70	-2	1	CNP164	115	113	Enclosure	-15	98	
E-Zone E Construction of Diaphragm Wall- Ancillary Plant	Piling, Diaphragm Wall	90	90	0	1	CNP163	90	90	Barrier	-10	80	
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	70	-2	1	CNP048	112	110	Barrier	-5	94	
	Concrete Lorry Mixer/ Concrete Truck	40	40	-4	1	CNP044	109	105	Enclosure	-15	90	
							Total SWL	112			Total SWL	96
							Max SWL [4]	113			Max SWL [4]	99
E-Zone E Installation of Mini-piles - Drill Rig	Drill Rig, DTH Drilling Machine	90	90	0	1	CPME#	110	110	Barrier	-10	100	
		70	70	-2	1	CNP048	112	110	Barrier	-5	94	
E-Zone E Installation of Mini-piles - Ancillary Plant	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	70	-2	1	CNP048	112	110	Barrier	-5	94	
							Total SWL	110			Total SWL	94
							Max SWL [5]	110			Max SWL [5]	100

Note:
 [1] Percentage on time within 30 minutes.
 [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.
 [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL.pdf
 [4] The Trench Cutter (CNP164) and Ancillary Plants (i.e. Mobile Crane & Concrete Lorry Mixer (CNP048 & CNP044)) of construction of diaphragm wall are carried out in phases, i.e. will not happen at the same time at the same workfront.
 [5] The 2 activities of installation of mini-piles are carried out in phases, i.e. will not happen at the same time at the same workfront.

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: TCW Station - Plant Inventory (Modified Base Scheme)- Dwall (All Hit Panel), Mini-pile/ Pre-bored H-piles (Station Box-Foundation Works at West)

Construction of Diaphragm Wall on Station West Side												
Works Area/ Activity	PME	Unmitigated				Mitigated						
		% Operating Time ⁽¹⁾	Time Correction ⁽¹⁾	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPME Reference ^{(2), (3)}	Single Unit QPME dB(A)	Total SWL dB(A)	Correction dB(A)	Total SWL dB(A)
W-Zone A Construction of Diaphragm Wall - Dwall Rig	Piling, Diaphragm Wall Trench Cutter	90	0	1	CNP163	90	115		Barrier	-10	80	
		90	0	1	CNP164	115	115		Enclosure	-15	100	
						Total SWL				Total SWL		100
W-Zone A Construction of Diaphragm Wall- Ancillary Plant	Piling, Diaphragm Wall Mobile Crane/ Service Crane/ Lifting crane Concrete Lorry Mixer/ Concrete Truck	90	0	1	CNP163	90	110		Barrier	-10	80	
		70	-2	1	CNP048	112	110	EPD-09130	Barrier	-5	94	
		40	-4	1	CNP044	109	105		Barrier	-5	100	
						Total SWL				Total SWL		101
						Max SWL⁽⁴⁾				Max SWL⁽⁴⁾		115
W-Zone A Installation of Mini-piles - Drill Rig	Drill Rig, DTH Drilling Machine	90	0	1	CPME#	110	110		Barrier	-10	100	
						Total SWL				Total SWL		100
W-Zone A Installation of Mini-piles - Ancillary Plant	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	Barrier	-5	94	
						Total SWL				Total SWL		94
						Max SWL⁽⁵⁾				Max SWL⁽⁵⁾		100
W-Zone B Construction of Diaphragm Wall - Dwall Rig	Piling, Diaphragm Wall Trench Cutter	90	0	1	CNP163	90	90		Barrier	-10	80	
		90	0	1	CNP164	115	115		Enclosure	-15	100	
						Total SWL				Total SWL		100
W-Zone B Construction of Diaphragm Wall- Ancillary Plant	Piling, Diaphragm Wall Mobile Crane/ Service Crane/ Lifting crane Concrete Lorry Mixer/ Concrete Truck	90	0	1	CNP163	90	90		Barrier	-10	80	
		70	-2	1	CNP048	112	110	EPD-09130	Barrier	-5	94	
		40	-4	1	CNP044	109	105		Barrier	-5	100	
						Total SWL				Total SWL		101
						Max SWL⁽⁴⁾				Max SWL⁽⁴⁾		101
W-Zone B Installation of Mini-piles - Drill Rig	Drill Rig, DTH Drilling Machine	90	0	1	CPME#	110	110		Barrier	-10	100	
						Total SWL				Total SWL		100
W-Zone B Installation of Mini-piles - Ancillary Plant	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	Barrier	-5	94	
						Total SWL				Total SWL		94
						Max SWL⁽⁵⁾				Max SWL⁽⁵⁾		100
W-Zone C Construction of Diaphragm Wall - Dwall Rig	Piling, Diaphragm Wall Trench Cutter	90	0	1	CNP163	90	90		Barrier	-10	80	
		90	0	1	CNP164	115	115		Enclosure	-15	100	
						Total SWL				Total SWL		100
W-Zone C Construction of Diaphragm Wall- Ancillary Plant	Piling, Diaphragm Wall Mobile Crane/ Service Crane/ Lifting crane Concrete Lorry Mixer/ Concrete Truck	90	0	1	CNP163	90	90		Barrier	-10	80	
		70	-2	1	CNP048	112	110	EPD-09130	Barrier	-5	94	
		40	-4	1	CNP044	109	105		Barrier	-5	100	
						Total SWL				Total SWL		101
						Max SWL⁽⁴⁾				Max SWL⁽⁴⁾		101
W-Zone C Installation of Mini-piles - Drill Rig	Drill Rig, DTH Drilling Machine	90	0	1	CPME#	110	110		Barrier	-10	100	
						Total SWL				Total SWL		100
W-Zone C Installation of Mini-piles - Ancillary Plant	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	Barrier	-5	94	
						Total SWL				Total SWL		94
						Max SWL⁽⁵⁾				Max SWL⁽⁵⁾		100

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW Station - Plant Inventory (Modified Base Scheme)- Dwall (All Hit Panel), Mini-pile/ Pre-bored H-piles (Station Box-Foundation Works at West)

Construction of Diaphragm Wall on Station West Side											
Works Area/ Activity	PME	% Operating Time [1]	Time Correction [2]	Units	Unmitigated			Mitigated			
					PME Reference	Single Unit OPME	Total SWL	OPME Reference	Single Unit OPME	Total SWL	
		dB(A)	dB(A)		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
W-Zone D Construction of Diaphragm Wall - Dwall Rig	Piling, Diaphragm Wall Trench Cutter	80 90	0 0	2 1	CNP163 CNP164	90 115	93 115	Barrier Enclosure	-10 -15	83 100	
W-Zone D Construction of Diaphragm Wall- Ancillary Plant	Piling, Diaphragm Wall Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Concrete Lorry Mixer/ Concrete Truck	90 70 40	0 -2 -4	1 1 1	CNP163 CNP048 CNP044	90 112 109	90 110 105	Barrier Barrier Barrier	-10 -5 -5	80 94 100	
						Total SWL	112			101	
						Max SWL [4]	115			101	
W-Zone D Installation of Mini-piles - Drill Rig	Drill Rig, DTH Drilling Machine	90	0	1	CPME#	110	110	Barrier	-10	100	
W-Zone D Installation of Mini-piles - Ancillary Plant	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	Barrier	-5	100	
						Total SWL	110			94	
						Max SWL [5]	110			100	
W-Zone E Construction of Diaphragm Wall - Dwall Rig	Piling, Diaphragm Wall Trench Cutter	90 90	0 0	1 1	CNP163 CNP164	90 115	90 115	Barrier Enclosure	-10 -15	80 100	
W-Zone E Construction of Diaphragm Wall- Ancillary Plant	Piling, Diaphragm Wall Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Concrete Lorry Mixer/ Concrete Truck	90 70 40	0 -2 -4	1 1 1	CNP163 CNP048 CNP044	90 112 109	90 110 105	Barrier Barrier Barrier	-10 -5 -5	80 94 100	
						Total SWL	112			101	
						Max SWL [4]	115			101	
W-Zone E Installation of Mini-piles - Drill Rig	Drill Rig, DTH Drilling Machine	90	0	1	CPME#	110	110	Barrier	-10	100	
W-Zone E Installation of Mini-piles - Ancillary Plant	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	Barrier	-5	100	
						Total SWL	110			94	
						Max SWL [5]	110			100	

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.
- [3] The plant with code "CPME#/" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licenses/guidance/files/OtherSWLs.pdf
- [4] The Trench Cutter (CNP164) and Ancillary Plants (i.e. Mobile Crane & Concrete Lorry Mixer (CNP048 & CNP044)) of construction of diaphragm wall are carried out in phases, i.e. will not happen at the same time at the same workfront.
- [5] The 2 activities of installation of mini-piles are carried out in phases, i.e. will not happen at the same time at the same workfront.

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: TCW Station - Plant Inventory (Modified Base Scheme)- Dwall (All Hit Panel), Mini-pile/ Pre-bored H-piles (Station Box-Foundation Works at East side and West side - Stationary Plants)

Works Area/ Activity	PME	Unmitigated				Mitigated						
		% Operating Time ^[1]	Time Correction ^[2]	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference ^{[2],[3]}	Single Unit OPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
D-wall S1 Diaphragm Wall Construction - Supporting Stationary Plants	Generator Piling, diaphragm wall, bentonite filtering plant/ Desander	90 70	0 -2	2 3	CNP103 CNP162	95 105	98 108	EPD-10735	87	Barrier Barrier	-5 -10	85 98
D-wall S2 Diaphragm Wall Construction - Supporting Stationary Plants	Concrete Mixer/ Bentonite Mixer/ Grout Mixer Concrete Pump/ Electric Bentonite Circulation Pump	50 50	-3 -3	2 3	CNP045 CNP047	96 109	109 111			Barrier Enclosure	-10 -15	96 96
D-wall S3 Diaphragm Wall Construction - Supporting Stationary Plants	Concrete Mixer/ Bentonite Mixer/ Grout Mixer Concrete Pump/ Electric Bentonite Circulation Pump	50 50	-3 -3	1 2	CNP045 CNP047	96 109	93 109			Barrier Enclosure	-10 -15	83 94
D-wall S4 Diaphragm Wall Construction - Supporting Stationary Plants	Piling, diaphragm wall, bentonite filtering plant/ Desander Generator	70 90	-2 0	2 1	CNP162 CNP103	105 95	106 95	EPD-10735	87	Barrier Barrier	-10 -5	96 82
D-wall S5 Diaphragm Wall Construction - Supporting Stationary Plants	Concrete Mixer/ Bentonite Mixer/ Grout Mixer Concrete Pump/ Electric Bentonite Circulation Pump Generator	50 50 90	-3 -3 0	2 5 2	CNP045 CNP047 CNP103	96 109 95	96 113 98			Barrier Enclosure Barrier	-10 -15 -5	86 98 85
D-wall S6 Diaphragm Wall Construction - Supporting Stationary Plants	Bar Bender and Cutter	50	-3	2	CNP021	90	113			Barrier	-10	98
D-wall S7 Mini-piles Installation (Zone A)-Supporting Stationary Plants	Air Compressor Generator Concrete Mixer/ Bentonite Mixer/ Grout Mixer	70 20 20	-2 -7 -7	2 1 1	CNP003 CNP103 CNP045	104 95 96	105 88 89	EPD-09607 EPD-10735	93 87	Barrier Barrier Barrier	-5 -5 -10	89 75 79
D-wall S8 Mini-piles Installation (Zone B)-Supporting Stationary Plants	Air Compressor Generator Concrete Mixer/ Bentonite Mixer/ Grout Mixer	70 20 20	-2 -7 -7	2 1 1	CNP003 CNP103 CNP045	104 95 96	106 88 89	EPD-09607 EPD-10735	93 87	Barrier Barrier Barrier	-5 -5 -10	89 75 79
D-wall S9 Mini-piles Installation (Zone C)-Supporting Stationary Plants	Air Compressor Generator Concrete Mixer/ Bentonite Mixer/ Grout Mixer	70 20 20	-2 -7 -7	2 1 1	CNP003 CNP103 CNP045	104 95 96	106 88 89	EPD-09607 EPD-10735	93 87	Barrier Barrier Barrier	-5 -5 -10	89 75 79
D-wall S10 Mini-piles Installation (Zone D)-Supporting Stationary Plants	Air Compressor Generator Concrete Mixer/ Bentonite Mixer/ Grout Mixer	70 20 20	-2 -7 -7	2 1 1	CNP003 CNP103 CNP045	104 95 96	106 88 89	EPD-09607 EPD-10735	93 87	Barrier Barrier Barrier	-5 -5 -10	89 75 79
D-wall S11 Mini-piles Installation (Zone E)-Supporting Stationary Plants	Air Compressor Generator Concrete Mixer/ Bentonite Mixer/ Grout Mixer	70 20 20	-2 -7 -7	2 1 1	CNP003 CNP103 CNP045	104 95 96	106 88 89	EPD-09607 EPD-10735	93 87	Barrier Barrier Barrier	-5 -5 -10	89 75 79
							Total SWL					Total SWL

Note:
 [1] Percentage on time within 30 minutes
 [2] PME with code "EPD-XXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory
 [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf
 [4] The 2 activities of constructions of diaphragm wall are carried out in phases, i.e. will not happen at the same time at the same workfront.
 [5] The 2 activities of installation of mini-piles are carried out in phases, i.e. will not happen at the same time at the same workfront.

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW Station - Plant Inventory (Modified Base Scheme)- EVA Lifting Plants and Materials

EVA - Lifting Plants and Materials											
Works Area/ Activity	PME	% Operating Time (1)	Time Correction dB(A)	Units	PME Reference CPME#	Unmitigated		Mitigated		Correction dB(A)	Total SWL dB(A)
						Single Unit PME dB(A)	Total SWL dB(A)	Single Unit OPME dB(A)	Total SWL dB(A)		
EVA - Lifting Plants and Materials - Lorry 1	Lorry, with crane/grab	8	-11	1	CPME#	105	94		Barrier	-5	89
EVA - Lifting Plants and Materials - Lorry 2	Lorry, with crane/grab	8	-11	1	CPME#	105	94		Barrier	-5	89
							Total SWL				Total SWL
							94				89

Note:
 (1) Percentage on time within 30 minutes
 (2) PME with code "EPD-XXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.
 (3) The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWLs.pdf
 (4) The operation of the Lifting Plants and Material at EVA is in M0 - M24, which is overlapping with the construction of Diaphragm Wall and the Lifting of Plants and Materials at EVA will not be conducted concurrently in the same zone. Considering that the Lifting Plants and Materials at EVA only operate for 8% of time (i.e. less than 30 minutes), only the construction of Diaphragm Wall will be taken into account in M0-M24 of the construction.

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) - Works Area WA.W02 for D-wall Steel Cage Rebar Fixing Works

TCW Station - Works Area WA.W02 for D-wall Steel Cage Rebar Fixing Works												
Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction ^[1] dB(A)	Units	Unmitigated			Mitigated				
					PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference ^{[2],[3]}	Single Unit OPME dB(A)	Total SWL dB(A)	Correction dB(A)	Total SWL dB(A)
WA.W02 - D-wall Steel Cage Rebar Fixing Works	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	2	CNPM48	112	113	EPD-09130	101	Barrier	-5	97
	Lorry with crane/grab	70	-2	2	CPME#	105	106			Barrier	-5	101
	Bar Bender and Cutter	100	0	8	CNPO21	90	99			Barrier	-10	89
	Generator	100	0	1	CNPI03	95	95	EPD-10735	87	Barrier	-5	82
						Total SWL	114				Total SWL	103

Note:
 [1] Percentage on time within 30 minutes
 [2] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf
 [3] The SWL of quiet plant with code "CPME#" are based on SWLs of other commonly used PME from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Excavation (Station Box)

TCW Excavation (Station Box)												
Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction ^[1]	Units	PME Reference#	Unmitigated			Mitigated			
						Single Unit PME dB(A)	Total SWL dB(A)	CPME Reference# ^{[2],[3]}	Single Unit OPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
Mucking out Opening A1 - Excavation Works (Soft & Installation of Struts)	Dump Truck	50	-3	1	CPME#	105	102	EPD-09130	101	Barrier	-5	97
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	20	-7	1	CNP048	112	105	EPD-09130	101	Barrier	-5	89
	Lorry	20	-7	1	CNP141	112	105	CPME#	105	Barrier	-5	93
	Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
						Total SWL	114				Total SWL	101
Excavation S1 - Stationary Plant for Excavation Zone A	Generator	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85
						Total SWL	98				Total SWL	85
Zone A - Excavation Works (Soft & Installation of Struts) - Below Roof Slab	Breaker, excavator mounted/ Hydraulic breaker	20	-7	1	CNP028	0	0					0
	Excavator	80	-1	2	CNP081	0	0					0
	Water Pump (petrol)	90	0	2	CNP282	0	0					0
						Total SWL	0				Total SWL	0

Note:
 [1] Percentage on time within 30 minutes
 [2] PME with code "EPD-XXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.
 [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf
 [4] The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Excavation (Station Box)

Works Area/ Activity		Unmitigated				Mitigated					
PME	% Operating Time [1]	Time Correction (dB(A))	Units	PME Reference	Single Unit PME (dB(A))	Total SWL (dB(A))	OPME Reference [2],[3]	Single Unit QPME (dB(A))	Mitigation Measures	Correction (dB(A))	Total SWL (dB(A))
Mucking out Opening C1 - Excavation Works (Soft & Installation of Struts)											
Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
Lorry	20	-7	1	CNP141	112	105	CPME#	105	Barrier	-5	93
Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
					Total SWL	113					98
Mucking out Opening C1 - Excavation Works (Soft, Rock & Installation of Struts)											
Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
Lorry	20	-7	1	CNP141	112	105	CPME#	105	Barrier	-5	93
Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
					Total SWL	113					98
					Max SWL [4]	113					98
Mucking out Opening C2 - Excavation Works (Soft & Installation of Struts)											
Dump Truck	50	-3	1	CPME#	105	102			Barrier	-5	97
Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	20	-7	1	CNP048	112	105	EPD-09130	101	Barrier	-5	89
Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
					Total SWL	113					100
Mucking out Opening C2 - Excavation Works (Soft, Rock & Installation of Struts)											
Dump Truck	50	-3	1	CPME#	105	102			Barrier	-5	97
Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	20	-7	1	CNP048	112	105	EPD-09130	101	Barrier	-5	89
Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
					Total SWL	113					100
					Max SWL [4]	113					100
Excavation S2 - Stationary Plant for Excavation Zone C											
Generator	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85
					Total SWL	98					85
Zone C - Excavation Works (Soft & Installation of Struts) - Below Roof Slab											
Breaker, excavator mounted/ Hydraulic breaker	20	-7	1	CNP028	0	0					0
Excavator	80	-1	4	CNP081	0	0					0
Water Pump (petrol)	90	0	2	CNP282	0	0					0
					Total SWL	0					0
Zone C - Excavation Works (Soft, Rock & Installation of Struts) - Below Roof Slab											
Breaker, excavator mounted/ Hydraulic breaker	80	-1	3	CNP028	0	0					0
Rock Drill	30	-5	1	CNP182	0	0					0
Excavator	50	-3	2	CNP081	0	0					0
Water Pump, Submersible	90	0	2	CNP283	0	0					0
					Total SWL	0					0

Note:
 [1] Percentage on time within 30 minutes.
 [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.
 [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licenses/guidance/files/OtherSWLs.pdf
 [4] The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.
 [5] The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

**Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Excavation (Station Box)**

TCW Excavation (Station Box)									
Works Area/ Activity	PME	% Operating Time [1]	Time Correction dB(A)	Units	PME Reference	Unmitigated		Mitigated	
						Single Unit PME dB(A)	Total SWL dB(A)	Single Unit QPME dB(A)	Total SWL dB(A)
Mucking out Opening B1 - Excavation Works (Soft & Installation of Struts)	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Lorry Ventilation Fan	70 20 20 90	-2 -7 -7 0	1 1 1 1	CNP048 CNP048 CNP141 CNP241	110 112 112 108	110 105 105 114	101 101 105 101	Barrier Barrier Barrier Silencer
Mucking out Opening B1 - Excavation Works (Soft, Rock & Installation of Struts)	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Lorry Ventilation Fan	70 20 20 90	-2 -7 -7 0	1 1 1 1	CNP048 CNP048 CNP141 CNP241	110 112 112 108	110 105 105 114	101 101 105 101	Barrier Barrier Barrier Silencer
Mucking out Opening B2 - Excavation Works (Soft & Installation of Struts)	Dump Truck Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Ventilation Fan	50 70 90	-3 -2 0	1 1 1	CPME# CNP048 CNP241	105 110 108	102 110 113	101 101 101	Barrier Barrier Silencer
Mucking out Opening B2 - Excavation Works (Soft, Rock & Installation of Struts)	Dump Truck Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Ventilation Fan	50 70 90	-3 -2 0	1 1 1	CPME# CNP048 CNP241	105 112 108	102 110 113	101 101 101	Barrier Barrier Silencer
Excavation S1 - Stationary Plant for Excavation Zone B	Generator	90	0	2	CNP103	95	98	87	Barrier
Zone B - Excavation Works (Soft & Installation of Struts) - Below Roof Slab	Breaker, excavator mounted/ Hydraulic breaker Excavator Water Pump (petrol)	20 80 90	-7 -1 0	1 4 2	CNP028 CNP081 CNP282	0 0 0	0 0 0	- - -	- - -
Zone B - Excavation Works (Soft, Rock & Installation of Struts) - Below Roof Slab	Breaker, excavator mounted/ Hydraulic breaker Rock Drill Excavator Water Pump, Submersible	80 30 50 90	-1 -5 -3 0	3 1 2 2	CNP028 CNP182 CNP081 CNP283	0 0 0 0	0 0 0 0	- - - -	- - - -
Total						98	98	87	Barrier
Total SWL						95	98	87	Total SWL
Max SWL [4]						105	110	101	Total SWL
Correction						-5	-5	-5	Total SWL
Total SWL						94	94	94	Total SWL
Max SWL [4]						108	113	108	Max SWL [4]
Total SWL						114	114	114	Total SWL
Max SWL [4]						114	114	114	Max SWL [4]

Note:
 [1] Percentage on time within 30 minutes.
 [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
 [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/english/application_for_licences/guidance/files/OtherSWLs.pdf
 [4] The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.
 [5] The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Excavation (Station Box)

TCW Excavation (Station Box)												
Works Area/ Activity	PME	Unmitigated				Mitigated						
		% Operating Time ^[1]	Time Correction ^[1]	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference ^{[2],[3]}	Single Unit OPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
Mucking out Opening D1 - Excavation Works (Soft & Installation of Struts)	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Lorry	20	-7	1	CNP141	112	105	CPME#	105	Barrier	-5	93
	Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
						Total SWL	113				Total SWL	98
Mucking out Opening D2 - Excavation Works (Soft & Installation of Struts)	Dump Truck	50	-3	1	CPME#	105	102			Barrier	-5	97
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Ventilation Fan	20	-7	1	CNP048	112	105	EPD-09130	101	Barrier	-5	89
						Total SWL	108				Total SWL	93
						Total SWL	113				Total SWL	100
Excavation S2 - Stationary Plant for Excavation Zone D	Generator	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85
						Total SWL	98				Total SWL	85
Zone D - Excavation Works (Soft & Installation of Struts) - Below Roof Slab	Breaker, excavator mounted/ Hydraulic breaker	20	-7	1	CNP028	0	0					0
	Excavator	80	-1	4	CNP081	0	0					0
	Water Pump (patrol)	90	0	2	CNP282	0	0					0
						Total SWL	0				Total SWL	0

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licenses/guidance/files/Other-SWL-Le.pdf
- [4] The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Excavation (Station Box)

Works Area/ Activity		Unmitigated				Mitigated			
PME	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPME Reference [2], [3]	Single Unit QPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
TCW Excavation (Station Box)									
Mucking out Opening E1 - Excavation Works (Soft & Installation of Struts)									
Dump Truck	1	CPME#	105	102			Barrier	-5	97
Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	1	CNP048	112	105	EPD-09130	101	Barrier	-5	89
Lorry	1	CNP141	108	105	CPME#	105	Barrier	-5	93
Ventilation Fan	1	CNP241	108	108			Silencer	-15	93
			Total SWL	114					Total SWL
				105			Barrier	-5	97
Mucking out Opening E1 - Excavation Works (Soft, Rock & Installation of Struts)									
Dump Truck	1	CPME#	105	102			Barrier	-5	94
Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	1	CNP048	112	110	EPD-09130	101	Barrier	-5	89
Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	1	CNP048	112	105	EPD-09130	101	Barrier	-5	89
Lorry	1	CNP141	108	105	CPME#	105	Barrier	-5	93
Ventilation Fan	1	CNP241	108	108			Silencer	-15	93
			Total SWL	114					Total SWL
				108					101
				114					101
			Max SWL^[4]	114					Max SWL^[4]
Excavation S3 - Stationary Plant for Excavation Zone E									
Generator	1	CNP103	95	95	EPD-10735	87	Barrier	-5	82
			Total SWL	95					Total SWL
Zone E - Excavation Works (Soft & Installation of Struts)									
Breaker, excavator mounted/ Hydraulic breaker	1	CNP028	0	0					0
Excavator	2	CNP081	0	0					0
Water Pump (petrol)	1	CNP282	0	0					0
			Total SWL	0					Total SWL
Zone E - Excavation Works (Soft, Rock & Installation of Struts)									
Breaker, excavator mounted/ Hydraulic breaker	1	CNP028	-1	0					0
Rock Drill	1	CNP182	-5	0					0
Excavator	2	CNP081	-3	0					0
Water Pump, Submersible	1	CNP283	0	0					0
			Total SWL	0					Total SWL

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_license/guidance/epd/OtherSWL.pdf
- [4] The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.
- [5] The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Structural Works (Station Box)

Works Area/Activity	PME	% Operating Time ⁽¹⁾	Time Correction ⁽²⁾ dB(A)	Units	Unmitigated			Mitigated					
					PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	CPME Reference ⁽³⁾ dB(A)	Single Unit CPME dB(A)	Total SWL dB(A)			
Mucking out Opening A1 - Station Structure Construction - Roof Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Lorry	70	-2	1	GNP048	112	110	EPD-09130	101	118	Barrier	-5	94
	Saw, Circular, Wood	40	-4	1	GNP141	112	108	CPME#	105		Barrier	-5	96
	Vibratory Poker	50	-3	1	GNP201	108	105		102		Barrier	-10	95
	Electric drill/ Rock driller	60	-2	3	GNP170	113	116	CPME#	102		Barrier	-5	92
		60	-2	1	GNP064	103	101	EPD-08781	99		Barrier	-5	92
						Total SWL	118				Total SWL		102
Mucking out Opening A1 - Station Structure Construction - Concourse Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Lorry	70	-2	1	GNP048	112	110	EPD-09130	101		Barrier	-5	94
	Ventilation Fan	40	-4	1	GNP141	112	108	CPME#	105		Barrier	-5	96
		90	0	1	GNP241	108	108		105		Silencer	-15	93
						Total SWL	114				Total SWL		99
Mucking out Opening A1 - Station Structure Construction - Mezzanine Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Lorry	70	-2	1	GNP048	112	110	EPD-09130	101		Barrier	-5	94
	Ventilation Fan	40	-4	1	GNP141	112	108	CPME#	105		Barrier	-5	96
		90	0	1	GNP241	108	108		105		Silencer	-15	93
						Total SWL	114				Total SWL		99
Mucking out Opening A1 - Station Structure Construction - Base Slab/ Platform Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Lorry	70	-2	1	GNP048	112	110	EPD-09130	101		Barrier	-5	94
	Ventilation Fan	40	-4	1	GNP141	112	108	CPME#	105		Barrier	-5	96
		90	0	1	GNP241	108	108		105		Silencer	-15	93
						Total SWL	114				Total SWL		99
Mucking out Opening A1 - Station Structure Construction - OTE Slab & Platform Plinthroom	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane Lorry	70	-2	1	GNP048	112	110	EPD-09130	101		Barrier	-5	94
	Ventilation Fan	40	-4	1	GNP141	112	108	CPME#	105		Barrier	-5	96
		90	0	1	GNP241	108	108		105		Silencer	-15	93
						Total SWL	114				Total SWL		99
						Max SWL⁽⁴⁾	114				Max SWL⁽⁴⁾		99
Structural S1 - Stationary Plant for Structural Zone A	Generator	90	0	1	GNP103	95	95	EPD-10735	87		Barrier	-5	82
	Air Compressor	20	-7	1	GNP203	104	97	EPD-09607	93		Barrier	-5	81
	Bar Bender and Cutter	70	-2	1	GNP021	90	88				Barrier	-10	78
	Concrete Lorry Mixer/ Concrete Truck	80	-1	1	GNP044	109	108				Barrier	-5	103
	Concrete Pump/ Electric Bentonite Circulation Pump	80	-1	1	GNP047	109	108				Enclosure	-15	93
						Total SWL	111				Total SWL		104
Zone A Below Roof Slab - Station Structure Construction - Concourse Slab	Saw, Circular, Wood	50	-3	1	GNP201	0	0						0
	Electric drill/ Rock driller	60	-2	1	GNP064	0	0						0
	Vibratory Poker	60	-2	3	GNP170	0	0						0
	Water Pump, Submersible	50	-3	1	GNP283	0	0						0
						Total SWL	0				Total SWL		0
Zone A Below Roof Slab - Station Structure Construction - Mezzanine Slab	Saw, Circular, Wood	50	-3	1	GNP201	0	0						0
	Electric drill/ Rock driller	60	-2	1	GNP064	0	0						0
	Vibratory Poker	60	-2	3	GNP170	0	0						0
	Water Pump, Submersible	50	-3	1	GNP283	0	0						0
						Total SWL	0				Total SWL		0
Zone A Below Roof Slab - Station Structure Construction - Platform Slab	Saw, Circular, Wood	50	-3	1	GNP201	0	0						0
	Electric drill/ Rock driller	60	-2	1	GNP064	0	0						0
	Vibratory Poker	60	-2	2	GNP170	0	0						0
	Water Pump, Submersible	50	-3	1	GNP283	0	0						0
						Total SWL	0				Total SWL		0
Zone A Below Roof Slab - Station Structure Construction - OTE Slab & Platform Plinthroom	Saw, Circular, Wood	50	-3	1	GNP201	0	0						0
	Electric drill/ Rock driller	60	-2	1	GNP064	0	0						0
	Vibratory Poker	60	-2	2	GNP170	0	0						0
	Water Pump, Submersible	50	-3	1	GNP283	0	0						0
						Total SWL	0				Total SWL		0

Note:
 (1) Percentage on time within 30 minutes
 (2) PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory
 (3) The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/flies/OtherSWL.e.pdf
 (4) The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.
 (5) The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Structural Works (Station Box)

TCW Structural Works (Station Box) - Zone B												
Works Area/ Activity	PME	% Operating	Time ⁽¹⁾	Time Correction ⁽¹⁾	Units	Unmitigated			Mitigated			
						PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPME Reference ^{(2), (3)}	Single Unit QPME dB(A)	Total SWL dB(A)	Correction dB(A)
Mucking out Opening B1 - Station Structure Construction - Roof Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97
	Saw, Circular, Wood	50	-3	1	CNP201	108	105	CPME#	105	Barrier	-10	95
	Vibratory Poker	60	-2	2	CNP170	113	114	CPME#	102	Barrier	-10	93
	Electric drill/ Rock driller	60	-2	1	CNP064	103	101	EPD-08781	99	Barrier	-5	92
						Total SWL	117				Total SWL	102
Mucking out Opening B1 - Station Structure Construction - Concourse Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
						Total SWL	114				Total SWL	100
Mucking out Opening B1 - Station Structure Construction - Mezzanine Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
						Total SWL	114				Total SWL	100
Mucking out Opening B1 - Station Structure Construction - Base Slab/ Platform Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
						Total SWL	114				Total SWL	100
Mucking out Opening B1 - Station Structure Construction - OTE Slab & Platform Plantroom	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	114	EPD-09130	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
						Total SWL	114				Total SWL	100
Mucking out Opening B2 - Station Structure Construction - Roof Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97
	Saw, Circular, Wood	50	-3	1	CNP201	108	105	CPME#	102	Barrier	-10	95
	Vibratory Poker	60	-2	2	CNP170	113	114	CPME#	102	Barrier	-10	93
	Electric drill/ Rock driller	60	-2	1	CNP064	103	101	EPD-08781	99	Barrier	-5	92
						Total SWL	117			Total SWL	102	
Mucking out Opening B2 - Station Structure Construction - Concourse Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
						Total SWL	114				Total SWL	100
Mucking out Opening B2 - Station Structure Construction - Mezzanine Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
						Total SWL	114				Total SWL	100
Mucking out Opening B2 - Station Structure Construction - Base Slab/ Platform Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
						Total SWL	114				Total SWL	100
Mucking out Opening B2 - Station Structure Construction - OTE Slab & Platform Plantroom	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	108			Silencer	-15	93
						Total SWL	114				Total SWL	100

**Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Structural Works (Station Box)**

TCW Structural Works (Station Box) - Zone B

Works Area/ Activity	PME	% Operating Time [1]	Time Correction [2] dB(A)	Units	Unmitigated			Mitigated			
					PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPME Reference [2], [3]	Single Unit QPME dB(A)	Total SWL dB(A)	Correction dB(A)
Structural S1 - Stationary Plant for Structural Zone B	Generator	90	0	1	CNP103	95	95	EPD-10735	87	-5	82
	Air Compressor	20	-7	1	CNP003	104	97	EPD-09607	93	-5	81
	Bar Bender and Cutter	70	-2	1	CNP021	90	88			-10	78
	Concrete Lorry Mixer/ Concrete Truck	80	-1	1	CNP044	109	108			-5	103
	Concrete Pump/ Electric Bentonite Circulation Pump	80	-1	1	CNP047	109	108			-15	93
						Total SWL	111			Total SWL	104
Zone B Below Roof Slab - Station Structure Construction - Concourse Slab	Saw, Circular, Wood	50	-3	1	CNP201	0	0			-	0
	Electric drill/ Rock driller	60	-2	1	CNP064	0	0			-	0
	Vibratory Poker	60	-2	3	CNP170	0	0			-	0
	Water Pump, Submersible	50	-3	2	CNP283	0	0			-	0
						Total SWL	0			Total SWL	0
Zone B Below Roof Slab - Station Structure Construction - Mezzanine Slab	Saw, Circular, Wood	50	-3	1	CNP201	0	0			-	0
	Electric drill/ Rock driller	60	-2	1	CNP064	0	0			-	0
	Vibratory Poker	60	-2	3	CNP170	0	0			-	0
	Water Pump, Submersible	50	-3	2	CNP283	0	0			-	0
						Total SWL	0			Total SWL	0
Zone B Below Roof Slab - Station Structure Construction - Base Slab/ Platform	Saw, Circular, Wood	50	-3	1	CNP201	0	0			-	0
	Electric drill/ Rock driller	60	-2	1	CNP064	0	0			-	0
	Vibratory Poker	60	-2	3	CNP170	0	0			-	0
	Water Pump, Submersible	50	-3	2	CNP283	0	0			-	0
						Total SWL	0			Total SWL	0
Zone B Below Roof Slab - Station Structure Construction - OTE Slab & Platform/ Plannroom	Saw, Circular, Wood	50	-3	1	CNP201	0	0			-	0
	Electric drill/ Rock driller	60	-2	1	CNP064	0	0			-	0
	Vibratory Poker	60	-2	2	CNP170	0	0			-	0
	Water Pump, Submersible	50	-3	2	CNP283	0	0			-	0
						Total SWL	0			Total SWL	0

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf
- [4] The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.
- [5] The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Structural Works (Station Box)

TCW Structural Works (Station Box) - Zone C													
Works Area/ Activity	PME	% Operating Time ⁽¹⁾	Time Correction ⁽²⁾	Units	Unmitigated			Mitigated					
					PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference ⁽³⁾	Single Unit OPME dB(A)	Total SWL dB(A)	Correction dB(A)	Total SWL dB(A)	
Mucking out Opening C1 - Station Structure Construction - Roof Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	Barrier	-5	97
	Saw, Circular, Wood	50	-3	1	CNP201	108	109	CPME#	105	105	Barrier	-5	94
	Vibratory Poker	60	-2	2	CNP170	113	114	CPME#	102	102	Barrier	-10	95
	Electric drill/ Rock driller	60	-2	1	CNP064	103	101	EPD-08781	99	99	Barrier	-5	92
						Total SWL	117					Total SWL	102
Mucking out Opening C1 - Station Structure Construction - Concourse Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	114				Silencer	-15	93
						Total SWL	114					Total SWL	100
Mucking out Opening C1 - Station Structure Construction - Mezzanine Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	114				Silencer	-15	93
						Total SWL	114					Total SWL	100
Mucking out Opening C1 - Station Structure Construction - Base Slab/ Platform Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	114				Silencer	-15	93
						Total SWL	114					Total SWL	100
Mucking out Opening C1 - Station Structure Construction - OTE Slab & Platform Plantroom	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	114				Silencer	-15	93
						Total SWL	114					Total SWL	100
						Max SWL⁽⁴⁾	114				Max SWL⁽⁴⁾	100	
Mucking out Opening C2 - Station Structure Construction - Roof Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	Barrier	-5	97
	Saw, Circular, Wood	50	-3	1	CNP201	108	105	CPME#	102	102	Barrier	-10	95
	Vibratory Poker	60	-2	2	CNP170	113	114	CPME#	102	102	Barrier	-10	93
	Electric drill/ Rock driller	60	-2	1	CNP064	103	101	EPD-08781	99	99	Barrier	-5	92
						Total SWL	117				Total SWL	102	
Mucking out Opening C2 - Station Structure Construction - Concourse Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	114				Silencer	-15	93
						Total SWL	114					Total SWL	100
Mucking out Opening C2 - Station Structure Construction - Mezzanine Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	114				Silencer	-15	93
						Total SWL	114					Total SWL	100
Mucking out Opening C2 - Station Structure Construction - Base Slab/ Platform Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	114				Silencer	-15	93
						Total SWL	114					Total SWL	100
Mucking out Opening C2 - Station Structure Construction - OTE Slab & Platform Plantroom	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	Barrier	-5	94
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	Barrier	-5	97
	Ventilation Fan	90	0	1	CNP241	108	114				Silencer	-15	93
						Total SWL	114					Total SWL	100
						Max SWL⁽⁴⁾	114				Max SWL⁽⁴⁾	100	

**Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Structural Works (Station Box)**

Works Area/ Activity		Unmitigated					Mitigated				
PME	% Operating Time ⁽¹⁾	Time Correction ⁽²⁾	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPME Reference ^{(2),(3)}	Single Unit QPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
Structural S2 - Stationary Plant for Structural Zone C											
Generator	90	0	1	CNP103	95	95	EPD-10735	87	Barrier	-5	82
Air Compressor	20	-7	1	CNP003	104	97	EPD-09607	93	Barrier	-5	81
Bar Bender and Cutter	70	-2	1	CNP021	90	88			Barrier	-10	78
Concrete Lorry Mixer/ Concrete Truck	80	-1	1	CNP044	109	108			Barrier	-5	103
Concrete Pump/ Electric Bentonite Circulation Pump	80	-1	1	CNP047	109	108			Enclosure	-15	93
					Total SWL	111				Total SWL	104
Zone C Below Roof Slab - Station Structure Construction - Concourse Slab											
Saw, Circular, Wood	50	-3	1	CNP201	0	0					0
Electric drill/ Rock driller	60	-2	1	CNP064	0	0					0
Vibratory Poker	60	-2	3	CNP170	0	0					0
Water Pump, Submersible	50	-3	2	CNP283	0	0					0
					Total SWL	0				Total SWL	0
Zone C Below Roof Slab - Station Structure Construction - Mezzanine Slab											
Saw, Circular, Wood	50	-3	1	CNP201	0	0					0
Electric drill/ Rock driller	60	-2	1	CNP064	0	0					0
Vibratory Poker	60	-2	3	CNP170	0	0					0
Water Pump, Submersible	50	-3	2	CNP283	0	0					0
					Total SWL	0				Total SWL	0
Zone C Below Roof Slab - Station Structure Construction - Base Slab/ Platform Slab											
Saw, Circular, Wood	50	-3	1	CNP201	0	0					0
Electric drill/ Rock driller	60	-2	1	CNP064	0	0					0
Vibratory Poker	60	-2	3	CNP170	0	0					0
Water Pump, Submersible	50	-3	2	CNP283	0	0					0
					Total SWL	0				Total SWL	0
Zone C Below Roof Slab - Station Structure Construction - OTE Slab & Platform Plantroom											
Saw, Circular, Wood	50	-3	1	CNP201	0	0					0
Electric drill/ Rock driller	60	-2	1	CNP064	0	0					0
Vibratory Poker	60	-2	2	CNP170	0	0					0
Water Pump, Submersible	50	-3	2	CNP283	0	0					0
					Total SWL	0				Total SWL	0

Note:
 (1) Percentage on time within 30 minutes.
 (2) PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
 (3) The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL.pdf
 (4) The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.
 (5) The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Structural Works (Station Box)

Works Area/Activity		Unmitigated				Mitigated					
PME	% Operating Time ⁽¹⁾	Time Correction ⁽²⁾	Units	PME Reference	Single Unit PME	Total SWL	OPME Reference ^{(3),(4)}	Single Unit OPME	Total SWL	Correction	Total SWL
		dB(A)			dB(A)	dB(A)		dB(A)	dB(A)	dB(A)	dB(A)
Mucking out Opening D1 - Station Structure Construction - Roof Slab											
Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	-5	94
Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	-5	97
Vibratory Poker	60	-2	1	CNP201	108	108		105	105	-10	95
Electric drill/ Rock driller	60	-2	2	CNP170	113	114	CPME#	102	102	-10	93
			1	CNP064	103	101	EPD-08781	99	99	-5	92
						Total SWL			Total SWL		102
Mucking out Opening D1 - Station Structure Construction - Concourse Slab											
Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	-5	94
Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	-5	97
Ventilation Fan	90	0	1	CNP241	108	108		105	105	-15	93
						Total SWL			Total SWL		100
Mucking out Opening D1 - Station Structure Construction - Mezzanine Slab											
Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	-5	94
Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	-5	97
Ventilation Fan	90	0	1	CNP241	108	108		105	105	-15	93
						Total SWL			Total SWL		100
Mucking out Opening D1 - Station Structure Construction - OTE Slab & Platform Plantroom											
Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	-5	94
Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	-5	97
Ventilation Fan	90	0	1	CNP241	108	108		105	105	-15	93
						Total SWL			Total SWL		100
						Max SWL⁽¹⁾			Max SWL⁽¹⁾		100
Mucking out Opening D2 - Station Structure Construction - Roof Slab											
Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	-5	94
Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	-5	97
Vibratory Poker	60	-2	2	CNP170	113	114	CPME#	102	102	-10	93
Electric drill/ Rock driller	60	-2	1	CNP064	103	101	EPD-08781	99	99	-5	92
						Total SWL			Total SWL		102
Mucking out Opening D2 - Station Structure Construction - Concourse Slab											
Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	-5	94
Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	-5	97
Ventilation Fan	90	0	1	CNP241	108	108		105	105	-15	93
						Total SWL			Total SWL		100
Mucking out Opening D2 - Station Structure Construction - Mezzanine Slab											
Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	-5	94
Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	-5	97
Ventilation Fan	90	0	1	CNP241	108	108		105	105	-15	93
						Total SWL			Total SWL		100
Mucking out Opening D2 - Station Structure Construction - OTE Slab & Platform Plantroom											
Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	101	-5	94
Lorry	50	-3	1	CNP141	112	109	CPME#	105	105	-5	97
Ventilation Fan	90	0	1	CNP241	108	108		105	105	-15	93
						Total SWL			Total SWL		100
						Max SWL⁽¹⁾			Max SWL⁽¹⁾		100

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Structural Works (Station Box)

Works Area/Activity		Unmitigated				Mitigated					
PME	% Operating Time [1]	Time Correction dB(A)	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference [2],[3]	Single Unit OPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
Structural S2 - Stationary Plant for Structural Zone D											
Generator	90	0	1	GNP103	85	95	EPD-10735	87	Barrier	-5	82
Air Compressor	20	-7	1	GNP003	104	97	EPD-09607	93	Barrier	-5	81
Bar Bender and Cutter	70	-2	1	GNP021	90	88			Barrier	-10	78
Concrete Lorry Mixer/ Concrete Truck	80	-1	2	GNP044	109	111			Barrier	-5	106
Concrete Pump/ Electric Bentonite Circulation Pump	80	-1	2	GNP047	109	111			Enclosure	-15	96
					Total SWL	114				Total SWL	106
Zone D Below Roof Slab - Station Structure Construction - Concourse Slab											
Saw, Circular, Wood	50	-3	1	GNP201	0	0					0
Electric drill/ Rock driller	60	-2	1	GNP064	0	0					0
Vibratory Poker	60	-2	3	GNP170	0	0					0
Water Pump, Submersible	50	-3	2	GNP283	0	0					0
					Total SWL	0				Total SWL	0
Zone D Below Roof Slab - Station Structure Construction - Mezzanine Slab											
Saw, Circular, Wood	50	-3	1	GNP201	0	0					0
Electric drill/ Rock driller	60	-2	1	GNP064	0	0					0
Vibratory Poker	60	-2	3	GNP170	0	0					0
Water Pump, Submersible	50	-3	2	GNP283	0	0					0
					Total SWL	0				Total SWL	0
Zone D Below Roof Slab - Station Structure Construction - Base Slab/ Platform Slab											
Saw, Circular, Wood	50	-3	1	GNP201	0	0					0
Electric drill/ Rock driller	60	-2	1	GNP064	0	0					0
Vibratory Poker	60	-2	3	GNP170	0	0					0
Water Pump, Submersible	50	-3	2	GNP283	0	0					0
					Total SWL	0				Total SWL	0
Zone D Below Roof Slab - Station Structure Construction - OTE Slab & Platform Plathroom											
Saw, Circular, Wood	50	-3	1	GNP201	0	0					0
Electric drill/ Rock driller	60	-2	1	GNP064	0	0					0
Vibratory Poker	60	-2	2	GNP170	0	0					0
Water Pump, Submersible	50	-3	2	GNP283	0	0					0
					Total SWL	0				Total SWL	0

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licenses/guidance/files/OtherSWL.e.pdf
- [4] The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.
- [5] The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) Structural Works (Station Box)

TCW Structural Works (Station Box) - Zone E												
Works Area/ Activity	PME	% Operating Time [1]	Time Correction dB(A)	Units	PME Reference	Unmitigated			Mitigated			
						Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference [2], [3]	Single Unit OPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
Mucking out Opening E1 - Station Structure Construction - Roof Slab	Mobile Crane/Service Crane/ Lifting crane Lorry	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
		40	-4	1	CNP141	108	108	CPME#	105	Barrier	-5	96
		60	-3	3	CNP201	108	105		102	Barrier	-10	95
		60	-2	1	CNP170	113	116		99	Barrier	-10	95
		60	-2	1	CNP064	103	101	EPD-08781	99	Barrier	-5	92
						Total SWL	118				Total SWL	102
Mucking out Opening E1 - Station Structure Construction - Concourse Slab	Mobile Crane/Service Crane/ Lifting crane Lorry Ventilation Fan	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
		40	-4	1	CNP141	108	108	CPME#	105	Barrier	-5	96
		90	0	1	CNP241	108	108		105	Silencer	-15	93
						Total SWL	114				Total SWL	99
Mucking out Opening E1 - Station Structure Construction - Mezzanine Slab	Mobile Crane/Service Crane/ Lifting crane Lorry Ventilation Fan	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
		40	-4	1	CNP141	108	108	CPME#	105	Barrier	-5	96
		90	0	1	CNP241	108	108		105	Silencer	-15	93
						Total SWL	114				Total SWL	99
Mucking out Opening E1 - Station Structure Construction - Base Slab/ Platform Slab	Mobile Crane/Service Crane/ Lifting crane Lorry Ventilation Fan	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
		40	-4	1	CNP141	108	108	CPME#	105	Barrier	-5	96
		90	0	1	CNP241	108	108		105	Silencer	-15	93
						Total SWL	114				Total SWL	99
Mucking out Opening E1 - Station Structure Construction - OTE Slab & Platform Plantroom	Mobile Crane/Service Crane/ Lifting crane Lorry Ventilation Fan	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
		40	-4	1	CNP141	108	108	CPME#	105	Barrier	-5	96
		90	0	1	CNP241	108	108		105	Silencer	-15	93
						Total SWL	114				Total SWL	99
						Max SWL [4]	114				Max SWL [4]	99
Structural S2 - Stationary Plant for Structural Zone E	Generator Air Compressor Bar Bender and Cutter Concrete Lorry Mixer/ Concrete Truck Concrete Pump/ Electric Bentonite Circulation Pump	90	0	1	CNP103	95	95	EPD-10735	87	Barrier	-5	82
		20	-7	1	CNP003	104	97	EPD-09607	93	Barrier	-5	81
		70	-2	1	CNP021	90	88			Barrier	-10	78
		80	-1	1	CNP044	109	108			Barrier	-5	103
		80	-1	1	CNP047	109	108			Enclosure	-15	93
						Total SWL	111				Total SWL	104
Zone E Below Roof Slab - Station Structure Construction - Concourse Slab	Saw, Circular, Wood Electric drill/ Rock driller Vibratory Poker Water Pump, Submersible	50	-3	1	CNP201	0	0					0
		60	-2	1	CNP064	0	0					0
		60	-2	3	CNP170	0	0					0
		50	-3	1	CNP283	0	0					0
						Total SWL	0				Total SWL	0
Zone E Below Roof Slab - Station Structure Construction - Mezzanine Slab	Saw, Circular, Wood Electric drill/ Rock driller Vibratory Poker Water Pump, Submersible	50	-3	1	CNP201	0	0					0
		60	-2	1	CNP064	0	0					0
		60	-2	3	CNP170	0	0					0
		50	-3	1	CNP283	0	0					0
						Total SWL	0				Total SWL	0
Zone E Below Roof Slab - Station Structure Construction - Base Slab/ Platform Slab	Saw, Circular, Wood Electric drill/ Rock driller Vibratory Poker Water Pump, Submersible	50	-3	1	CNP201	0	0					0
		60	-2	1	CNP064	0	0					0
		60	-2	3	CNP170	0	0					0
		50	-3	1	CNP283	0	0					0
						Total SWL	0				Total SWL	0

Note:
 [1] Percentage on time within 30 minutes.
 [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.
 [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL.e.pdf
 [4] The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.
 [5] The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

**Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) - Vent Shaft Structures and Entrances**

TCW Station - Vent Shaft Structures and Entrances - Foundation Works											
Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction dB(A)	Units	PME Reference	Unmitigated			Mitigated		
						Single Unit PME dB(A)	Total SWL dB(A)	Max SWL ^[4]	Single Unit OPME dB(A)	Total SWL dB(A)	Max SWL ^[4]
North Vent Shaft Structure - Installation of Socket H-piles	Drill Rig, DTH Drilling Machine	90	0	2	CPME#	110	113		Barrier	-10	103
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	30	-5	1	CNP048	112	107	101	Barrier	-5	91
	Lorry	10	-10	1	CNP141	112	102	105	Barrier	-5	90
						Total SWL	114			Total SWL	
North Vent Shaft Structure - Installation of Pipe Pile Wall	Drill Rig, DTH Drilling Machine	90	0	2	CPME#	110	113		Barrier	-10	103
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	30	-5	1	CNP048	112	107	101	Barrier	-5	91
	Lorry	10	-10	1	CNP141	112	102	105	Barrier	-5	90
						Total SWL	114			Total SWL	
					Max SWL^[4]	114			Max SWL^[4]		103
Entrance A - Installation of Socket H-piles	Drill Rig, DTH Drilling Machine	90	0	1	CPME#	110	110		Barrier	-10	100
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	30	-5	1	CNP048	112	107	101	Barrier	-5	91
	Lorry	10	-10	1	CNP141	112	102	105	Barrier	-5	90
						Total SWL	112			Total SWL	
Entrance A - Installation of Pipe Pile Wall	Drill Rig, DTH Drilling Machine	90	0	1	CPME#	110	110		Barrier	-10	100
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	30	-5	1	CNP048	112	107	101	Barrier	-5	91
	Lorry	10	-10	1	CNP141	112	102	105	Barrier	-5	90
						Total SWL	112			Total SWL	
					Max SWL^[4]	112			Max SWL^[4]		100
Building S1 - Stationary Plant for North Vent Shaft Structure	Concrete Mixer/ Bentonite Mixer/ Grout Mixer	20	-7	1	CNP045	96	89		Barrier	-10	79
	Air Compressor	70	-2	4	CNP003	104	108	93	Barrier	-5	92
	Generator	20	-7	2	CNP103	95	91	87	Barrier	-5	78
						Total SWL	109			Total SWL	
Building S2 - Stationary Plant for Entrance A	Concrete Mixer/ Bentonite Mixer/ Grout Mixer	20	-7	1	CNP045	96	89		Barrier	-10	79
	Air Compressor	70	-2	2	CNP003	104	105	93	Barrier	-5	89
	Generator	20	-7	1	CNP103	95	88	87	Barrier	-5	75
						Total SWL	106			Total SWL	

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licenses/guidance/OtherSWL.pdf
- [4] The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.

**Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) - Vent Shaft Structures and Entrances**

TCW Station - Vent Shaft Structures and Entrances - North Vent Shaft Structure Structural Works

Works Area/Activity	PME	% Operating Time ^[1]	Time Correction dB(A)	Units	PME Reference	Unmitigated		Mitigated	
						Single Unit PME dB(A)	Total SWL dB(A)	Single Unit QPME dB(A)	Total SWL dB(A)
North Vent Shaft Structure Structural Works (Construction of Mezzanine (Base) Slab)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	101	101
	Lorry	50	-3	1	CNP141	112	109	105	105
	Vibratory Poker	60	-2	2	CNP170	113	114	102	102
						Total SWL	116	Total SWL	100
North Vent Shaft Structure Structural Works (Construction of Walls at Mezzanine Slab Level and Plenum Level + Remove Sirts)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	101	101
	Lorry	50	-3	1	CNP141	112	109	105	105
	Vibratory Poker	60	-2	2	CNP170	113	114	102	102
						Total SWL	116	Total SWL	100
North Vent Shaft Structure Structural Works (Construction of Station Box Roof Level Slab)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	101	101
	Lorry	50	-3	1	CNP141	112	109	105	105
	Vibratory Poker	60	-2	2	CNP170	113	114	102	102
						Total SWL	116	Total SWL	100
North Vent Shaft Structure Structural Works (Construction of Walls at Station Box Roof Slab Level)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	101	101
	Lorry	50	-3	1	CNP141	112	109	105	105
	Vibratory Poker	60	-2	2	CNP170	113	114	102	102
						Total SWL	116	Total SWL	100
North Vent Shaft Structure Structural Works (Construction of Ground Level Slab)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	101	101
	Lorry	50	-3	1	CNP141	112	109	105	105
	Vibratory Poker	60	-2	2	CNP170	113	114	102	102
						Total SWL	116	Total SWL	100
North Vent Shaft Structure Structural Works (Construction of Walls at Ground Slab Level)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	101	101
	Lorry	50	-3	1	CNP141	112	109	105	105
	Vibratory Poker	60	-2	2	CNP170	113	114	102	102
						Total SWL	116	Total SWL	100
North Vent Shaft Structure Structural Works (Construction of 1st Level Slab)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	101	101
	Lorry	50	-3	1	CNP141	112	109	105	105
	Vibratory Poker	60	-2	2	CNP170	113	114	102	102
						Total SWL	116	Total SWL	100
North Vent Shaft Structure Structural Works (Construction of Wall at 1st Slab Level)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	101	101
	Lorry	50	-3	1	CNP141	112	109	105	105
	Vibratory Poker	60	-2	2	CNP170	113	114	102	102
						Total SWL	116	Total SWL	100
North Vent Shaft Structure Structural Works (Construction of Roof Slab)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	101	101
	Lorry	50	-3	1	CNP141	112	109	105	105
	Vibratory Poker	60	-2	2	CNP170	113	114	102	102
						Total SWL	116	Total SWL	100
North Vent Shaft Structure Structural Works (Construction of Planrooms)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	101	101
	Lorry	50	-3	1	CNP141	112	109	105	105
	Vibratory Poker	60	-2	2	CNP170	113	114	102	102
						Total SWL	116	Total SWL	100
						Max SWL^[4]	116	Max SWL^[4]	100
Building S1 - Stationary Plant for North Vent Shaft Structure	Generator	90	0	1	CNP103	95	95	87	87
	Bar Bender and Cutter	70	-2	1	CNP021	90	88	80	80
	Air Compressor	20	-7	1	CNP003	104	97	93	93
	Concrete Lorry/Mixer/ Concrete Truck	50	-3	1	CNP044	109	106	101	101
	Concrete Pump/ Electric Bentonite Circulation Pump	50	-3	1	CNP047	109	106	101	101
	Saw, Circular, Wood	50	-3	2	CNP201	108	108	101	101
	Electric drill/ Rock drill	60	-2	2	CNP064	103	104	99	99
						Total SWL	112	Total SWL	104
						Max SWL^[4]	116	Max SWL^[4]	100

Note:
 [1] Percentage on time within 30 minutes.
 [2] PME with code "EPD-XXXX" are equipment with SWLs extracted from EPD's QPME inventory.
 [3] The plant with code "CPME#F" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/english/application_for_licences/guidance/files/OtherSWL_e.pdf
 [4] The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.

**Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) - Vent Shaft Structures and Entrances**

TCW Station - Vent Shaft Structures and Entrances - Entrance A Structural Works													
Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction ^[1] dB(A)	Units	PME Reference	Unmitigated			Mitigated				
						Single Unit PME dB(A)	Total SWL dB(A)	Correction dB(A)	Single Unit OPME dB(A)	Total SWL dB(A)	Correction dB(A)		
Entrance A Structural Works (Construction of Concourse (Base) Slab)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116						100	
Entrance A Structural Works (Construction of Walls at Concourse (Base) Slab Level + Remove Struts)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116						100	
Entrance A Structural Works (Construction of Mezzanine Level Slab)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116						100	
Entrance A Structural Works (Construction of Mezzanine Slab Level + Remove Struts)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116						100	
Entrance A Structural Works (Construction of Station Box Roof Level Slab, Permanent Struts & Walkers)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116						100	
Entrance A Structural Works (Construction of Walls at Roof Slab Level)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116						100	
Entrance A Structural Works (Construction of Ground Level Slab)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116						100	
Entrance A Structural Works (Construction of Roof Support)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116						100	
Entrance A Structural Works (Construction of Entrance Roof)	Mobile Crane/ Service Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116						100	
	Max SWL^[1]					116						100	
Building S2 - Stationary Plant for Entrance A	Generator	90	0	1	CNP103	95	95	-5	87	87	-5	82	
	Bar Bender and Cutter	70	-2	1	CNP021	90	88	-10	78	78	-10	78	
	Air Compressor	20	-7	1	CNP003	104	97	-5	93	93	-5	81	
	Concrete Lorry/Mixer/ Concrete Truck	50	-3	1	CNP044	109	106	-5	101	101	-5	101	
	Concrete Pump/ Electric Bentonite Circulation Pump	50	-3	1	CNP047	109	106	-15	91	91	-15	91	
	Saw, Circular, Wood	50	-3	2	CNP201	108	108	-10	98	98	-10	88	
	Electric drill/ Rock driller	60	-2	2	CNP064	103	104	-5	99	99	-5	95	
		Total SWL					112						104
		Max SWL^[1]					112						104

Note:

[1] Percentage on time within 30 minutes.

[2] PME with code "EPD-XXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.

[3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licenses/guidance/files/OtherSWL_e.pdf

[4] The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: TCW (Modified Base Scheme - 18 Nov 2020 Program) - Vent Shaft Structures and Entrances

TCW Station - Vent Shaft Structures and Entrances - Entrance B Structural Works													
Works Area/ Activity	PME	% Operating Time ⁽¹⁾	Time Correction ⁽²⁾	Units	PME Reference	Unmitigated			Mitigated				
						Single Unit PME dB(A)	Total SWL dB(A)	Correction dB(A)	Single Unit QPME dB(A)	Total SWL dB(A)	Correction dB(A)		
Entrance B Structural Works (Construction of Walls at Station Box Roof Level)	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116				Total SWL		100	
Entrance B Structural Works (Construction of Ground Level Slab)	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116				Total SWL		100	
Entrance B Structural Works (Construction of Roof Support)	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116				Total SWL		100	
Entrance B Structural Works (Construction of Entrance Roof)	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	-5	101	101	-5	94	
	Lorry	50	-3	1	CNP141	112	109	-5	105	105	-5	97	
	Vibratory Poker	60	-2	2	CNP170	113	114	-10	102	102	-10	93	
	Total SWL					116				Total SWL		100	
	Max SWL⁽⁴⁾					116				Max SWL⁽⁴⁾		100	
Building S1 - Stationary Plant for Entrance B	Generator	90	0	1	CNP103	95	95	-5	87	87	-5	82	
	Bar Bender and Cutter	70	-2	1	CNP021	90	88	-10	87	87	-10	78	
	Air Compressor	20	-7	1	CNP003	104	97	-5	93	93	-5	81	
	Concrete Lorry Mixer/ Concrete Truck	50	-3	1	CNP044	109	106	-5	101	101	-5	91	
	Concrete Pump/ Electric Bentonite Circulation Pump	50	-3	1	CNP047	109	106	-15	91	91	-15	76	
	Saw Circular Wood	50	-3	1	CNP201	108	105	-10	95	95	-10	85	
	Electric drill/ Rock driller	60	-2	1	CNP064	103	101	-5	99	99	-5	92	
		Total SWL					111				Total SWL		103

Note:
 [1] Percentage on time within 30 minutes.
 [2] PME with code "EPD-XXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
 [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf
 [4] The activities of constructions are carried out in phases, i.e. will not happen at the same time at the same workfront.

**Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW Station - Plant Inventory (Modified Base Scheme)- Site Reinstatement**

Works Area/ Activity		Unmitigated				Mitigated					
PME	% Operating Time ^[1]	Time Correction ^[2]	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference ^{[2],[3]}	Single Unit OPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
TCW Site Reinstatement Retaining wall construction and backfilling for site formation	Excavator	-2	4	CNP081	112	116	EPD-07150	90	Barrier	-5	89
	Roller, Vibratory	-2	2	CNP186	108	109	EPD-06997	94	Barrier	-5	90
	Mobile Crane/ Service Crane/ Lifting crane	-2	2	CNP048	112	113	EPD-09130	101	Barrier	-5	97
	Lorry	-2	2	CNP141	112	113	CPME#	105	Barrier	-5	101
	Dump Truck	-3	3	CPME#	105	107			Barrier	-5	102
	Concrete Lorry Mixer/ Concrete Truck	-3	3	CNP044	109	111			Barrier	-5	106
	Saw Circular Wood	-2	1	CNP201	108	106			Barrier	-10	96
	Concrete Pump/ Electric Bentonite Circulation Pump	-2	1	CNP047	109	107			Enclosure	-15	92
	Vibratory Poker	-2	2	CNP170	113	114	CPME#	102	Barrier	-10	93
					Total SWL	122				Total SWL	
TCW Site Reinstatement Utilities laying, Road and drainage construction	Excavator	-2	4	CNP081	112	116	EPD-07150	90	Barrier	-5	89
	Mobile Crane/ Service Crane/ Lifting crane	-2	2	CNP048	112	113	EPD-09130	101	Barrier	-5	97
	Lorry	-2	2	CNP141	112	113	CPME#	105	Barrier	-5	101
	Concrete Lorry Mixer/ Concrete Truck	-2	4	CNP044	109	113			Barrier	-5	108
	Vibratory Poker	-2	2	CNP170	113	114	CPME#	102	Barrier	-10	93
	Power Rammer (Petrol)	-2	1	CNP169	108	106			Barrier	-10	96
					Total SWL	122				Total SWL	
TCW Site Reinstatement Compensatory tree planting & landscape works	Mobile Crane/ Service Crane/ Lifting crane	-2	2	CNP048	112	113	EPD-09130	101	Barrier	-5	97
	Lorry	-2	2	CNP141	112	113	CPME#	105	Barrier	-5	101
	Excavator	-2	1	CNP081	112	110	EPD-07150	90	Barrier	-5	83
				Total SWL	117				Total SWL		103
TCW Site Reinstatement Boundary fencing erection	Lorry	-2	2	CNP141	112	113	CPME#	105	Barrier	-5	101
	Concrete Lorry Mixer/ Concrete Truck	-2	2	CNP044	109	110			Barrier	-5	105
	Excavator	-2	1	CNP081	112	110	EPD-07150	90	Barrier	-5	83
				Total SWL	116				Total SWL		107
				Max SWL^[4]	122				Max SWL^[4]		110

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWLLe.pdf
- [4] The above construction activities are carried out in phases, i.e. will not happen at the same time at the same workfront.

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: TCW Station - Plant Inventory (Modified Base Scheme)- Demolition of Footbridge

Footbridge Demolition		Unmitigated					Mitigated					
Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction ^[1] dB(A)	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference ^{[2], [3]}	Single Unit OPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
FB-A Footbridge Demolition	Breaker, excavator mounted/ Hydraulic breaker	30	-5	1	CNP028	122	117			Barrier	-10	107
	Dump Truck, with grab, 5.5 tonne < gross vehicle weight, ≤ 38 tonne	50	-3	1	CPME#	105	102					102
	Excavator	70	-2	1	CNP081	112	110	EPD-13043	104	Barrier	-5	97
	Concrete Crusher, excavator mounted	70	-2	1	CPME#	103	101					101
						Total SWL	118				Total SWL	109

Note:
 [1] Percentage on time within 30 minutes.
 [2] PME with code "EPD-XXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
 [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licenses/guidance/files/OtherSWLs.pdf

PME Inventory for EAP / EEP
and Launching Shaft

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: Plant Inventory EAP / EEP

Works Area/ Activity	Unmitigated										Mitigated			
	PME	% Operating Time ^[1]	Time Correction ^[1] dB(A)	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPME Reference ^{[2], [3]}	Single Unit QPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)		
EAP-A - Installation of Pipe Piles	Drill Rig/ DTH Drilling Machine	90	0	2	CPME#	110	113			Barrier	-10	103		
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	30	-5	1	CNP048	112	107	EPD-09130	101	Barrier	-5	91		
	Excavator	10	-10	1	CNP081	112	102	EPD-07150	90	Barrier	-5	75		
	Air Compressor	90	0	4	CNP003	104	110	EPD-09607	93	Barrier	-5	94		
	Lorry	20	-7	1	CNP141	112	105	CPME#	105	Barrier	-5	93		
	Generator	50	-3	2	CNP103	95	95	EPD-10735	87	Barrier	-5	82		
						Total SWL	116				Total SWL	104		

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: Plant Inventory EAP / EEP

EAP / EEP Site Formation Works - Slope Excavation		Unmitigated										Mitigated			
Works Area/ Activity	PME	% Operating Time (1)	Time Correction (2)	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPME Reference (2),(3)	Single Unit QPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)			
EAP-B - Slope Excavation	Breaker, excavator mounted	90	0	1	CNP028	122	122			Barrier	-5	117			
	Electric drill/ Rock driller	30	-5	1	CNP064	103	98	EPD-08781	99	Barrier	-5	89			
	Excavator	50	-3	1	CNP081	112	109	EPD-07150	90	Barrier	-5	82			
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	30	-5	1	CNP048	112	107	EPD-09130	101	Barrier	-5	91			
	Dump Truck	50	-3	1	CPME#	105	102			Barrier	-5	97			
	Generator	90	0	1	CNP101	108	108	EPD-10735	87	Barrier	-5	82			
	Water pump	20	-7	1	CNP281	88	81			Barrier	-10	71			
					Total SWL	122					Total SWL	117			
EAP-B - Installation of Tie Back Anchor	Drill Rig/ DTH Drilling Machine	90	0	2	CPME#	110	113			Barrier	-10	103			
	Air Compressor	90	0	4	CNP003	104	110	EPD-09607	93	Barrier	-5	94			
	Generator	50	-3	2	CNP103	95	95	EPD-10735	87	Barrier	-5	82			
					Total SWL	114					Total SWL	103			
EAP-B - Installation of Strut and Walling	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94			
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97			
					Total SWL	112	113				Total SWL	99			

Note:

[1] Percentage on time within 30 minutes.

[2] PME with code "EPD-XXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.

[3] The plant with code "CPME#" are referenced from EPD's guidance 'Sound Power Level of Other Commonly Used PME' from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: Plant Inventory EAP / EEP

EAP / EEP - Foundation and Shaft Excavation Works		Unmitigated					Mitigated					
Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction ^[1] dB(A)	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPME Reference ^{[2],[3]}	Single Unit QPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
EAP-B - Installation of Pre-bored H-piles	Drill Rig/ DTH Drilling Machine	90	0	1	CPME#	110	110			Barrier	-10	100
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	30	-5	1	CNP048	112	107	EPD-09130	101	Barrier	-5	91
	Air Compressor	90	0	2	CNP003	104	107	EPD-09607	93	Barrier	-5	91
	Lorry	10	-10	1	CNP141	112	102	CPME#	105	Barrier	-5	90
	Generator	50	-3	2	CNP101	108	108	EPD-10735	87	Barrier	-5	82
	Concrete Mixer/ Bentonite Mixer/ Grout Mixer	20	-7	1	CNP045	96	89			Barrier	-5	84
						Total SWL	114					Total SWL
EAP-A - Hard Excavation (Shaft Zone)	Breaker, excavator mounted	90	0	1	CNP028	0	0					0
	Rock Drill	50	-3	1	CNP182	0	0					0
	Excavator	50	-3	1	CNP081	112	109	EPD-07150	90	Barrier	-5	82
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	30	-5	1	CNP048	112	107	EPD-09130	101	Barrier	-5	91
	Dump Truck	30	-5	1	CNP068	105	100			Barrier	-5	95
	Generator	90	0	1	CNP103	95	95	EPD-10735	87	Barrier	-5	82
	Water pump	50	-3	1	CNP281	88	85			Barrier	-10	75
Ventilation Fan	90	0	1	CNP241	108	108			Barrier	-10	98	
					Total SWL	113					Total SWL	100

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf
- [4] The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: Plant Inventory EAP / EEP

Works Area/ Activity		Unmitigated				Mitigated							
Works Area/ Activity	PME	% Operating Time [1]	Time Correction [2]	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPME Reference [2],[3]	Single Unit QPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)	
													dB(A)
EAP-A - Construction of EAP/EEP Building (Aboveground)	Mobile Crane/Service Crane/ Crawler Crane/ Lifting crane	50	-3	2	CNP048	112	112	EPD-09130	101	Barrier	-5	96	
	Air Compressor	90	0	2	CNP003	104	107			Barrier	-5	102	
	Lorry	50	-3	1	CNP141	112	109			Barrier	-5	104	
	Water pump	50	-3	1	CNP281	88	85			Barrier	-10	75	
	Generator	80	-1	2	CNP101	108	110	EPD-10735	87	Barrier	-5	84	
	Vibratory Poker	50	-3	4	CNP170	113	116	CPME#	102	Barrier	-10	95	
	Saw, Circular, Wood	50	-3	1	CNP201	108	105			Barrier	-10	95	
	Electric drill/ Rock driller	50	-3	2	CNP064	103	103	EPD-08781	99	Barrier	-5	94	
						Total SWL	119					Total SWL	107
EAP-A - Construction of Shaft Structure and Staircases	Mobile Crane/Service Crane/ Crawler Crane/ Lifting crane	50	-3	2	CNP048	112	112	EPD-09130	101	Barrier	-5	96	
	Air Compressor	90	0	2	CNP003	104	107	EPD-09607	93	Barrier	-5	91	
	Lorry	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97	
	Water pump	50	-3	1	CNP281	88	85			Barrier	-10	75	
	Generator	80	-1	2	CNP101	108	110	EPD-10735	87	Barrier	-5	84	
	Vibratory Poker	50	-3	4	CNP170	113	116	CPME#	102	Barrier	-10	95	
	Saw, Circular, Wood	90	0	1	CNP201	108	108			Barrier	-10	98	
	Electric drill/ Rock driller	50	-3	2	CNP064	103	103	EPD-08781	99	Barrier	-5	94	
	Ventilation Fan	90	0	2	CNP241	108	111			Barrier	-10	101	
	Bar Bender and Cutter	50	-3	1	CNP021	90	87			Barrier	-10	77	
					Total SWL	120					Total SWL	105	

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: Plant Inventory (Launching Shaft and C&C Tunnel) - Foundation Works

Launching Shaft - Foundation Work		Unmitigated						Mitigated					
Works Area/ Activity	PME	% Operating Time ⁽¹⁾	Time Correction ⁽²⁾	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPME Reference ^{(2), (3)}	Single Unit QPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)	
LSA - Construction of Diaphragm Wall at TCC	Trench Cutter	90	0	1	CNP164	115	115			Barrier	-10	105	
	Concrete Mixer/ Bentonite Mixer/ Grout Mixer	30	-5	1	CNP045	96	91			Barrier	-5	86	
	Concrete Pump/ Electric Bentonite Circulation Pump	50	-3	1	CNP047	109	106			Barrier	-10	96	
	Piling, diaphragm wall, bentonite filtering plant/ STP- Slurry Treatment Plant/ Filter Press Machine	70	-2	1	CNP162	105	103			Barrier	-10	93	
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94	
	Excavator	50	-3	1	CNP081	112	109	EPD-07150	90	Barrier	-5	82	
	Dump Truck	50	-3	1	CPME#	105	102			Barrier	-5	97	
	Concrete Lorry Mixer/ Concrete Truck	40	-4	1	CNP044	109	105			Barrier	-5	100	
	Generator	90	0	1	CNP103	95	95	EPD-10735	87	Barrier	-5	82	
						Total SWL	118					Total SWL	107
LSA - Installation of Pre-bored H-piles at TCC	Drill Rig/ DTH Drilling Machine	90	0	2	CPME#	110	113			Barrier	-10	103	
	Air Compressor	90	0	4	CNP003	104	110	EPD-09607	93	Barrier	-5	94	
	Lorry	30	-5	1	CNP141	112	107	CPME#	105	Barrier	-5	95	
	Generator	50	-3	2	CNP103	95	95	EPD-10735	87	Barrier	-5	82	
	Concrete Mixer/ Bentonite Mixer/ Grout Mixer	20	-7	1	CNP045	96	89			Barrier	-5	84	
					Total SWL	115					Total SWL	104	
LSA - Installation of Pipe Piles at TCC	Drill Rig/ DTH Drilling Machine	90	0	2	CPME#	110	113			Barrier	-10	103	
	Air Compressor	90	0	4	CNP003	104	110	EPD-09607	93	Barrier	-5	94	
	Generator	50	-3	2	CNP103	95	95	EPD-10735	87	Barrier	-5	82	
					Total SWL	114					Total SWL	103	

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL.e.pdf

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: Plant Inventory (Launching Shaft and C&C Tunnel) - Excavation Works

Launching Shaft - Excavation Work		Unmitigated										Mitigated			
Works Area/ Activity	PME	% Operating Time ⁽¹⁾	Time Correction ⁽²⁾ dB(A)	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPM# Reference ^{(2), (3)}	Single Unit QPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)			
LS-A - Excavation Works (Soft & Installation of Struts) for Launching Shaft	Dump Truck	50	-3	1	CPME#	105	102			Barrier	-5	97			
	Excavator	80	-1	2	CNP081	112	114	EPD-07150	90	Barrier	-5	87			
	Breaker, excavator mounted	20	-7	1	CNP028	122	115			Enclosure	-15	100			
	Water Pump (petrol)	90	0	2	CNP282	103	106			Barrier	-10	96			
	Generator	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85			
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94			
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	20	-7	1	CNP048	112	105	EPD-09130	101	Barrier	-5	89			
	Lorry	20	-7	1	CNP141	112	105	CPME#	105	Barrier	-5	93			
	Ventilation Fan	90	0	1	CNP241	108	108			Barrier	-10	98			
						Total SWL	119						Total SWL	105	
LS-A - Excavation Works (Rock & Installation of Struts) for Launching Shaft	Dump Truck	50	-3	1	CPME#	105	102			Barrier	-5	97			
	Excavator	80	-3	1	CNP081	112	109	EPD-07150	90	Barrier	-5	82			
	Breaker, excavator mounted	20	-1	3	CNP028	122	126			Enclosure	-15	111			
	Water Pump, Submersible	90	0	2	CNP283	85	88			Barrier	-10	78			
	Generator	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85			
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94			
	Ventilation Fan	90	0	1	CNP241	108	108			Barrier	-10	98			
	Rock Drill	30	-5	1	CNP182	123	118			Barrier	-10	108			
	Lorry	20	-7	1	CNP141	112	105	CPME#	105	Barrier	-5	93			
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	20	-7	1	CNP048	112	105	EPD-09130	101	Barrier	-5	89			
					Total SWL	127						Total SWL	113		
LS-A - Excavation Works (Soft & Installation of Struts) for C&C Tunnel	Dump Truck	50	-3	1	CPME#	105	102			Barrier	-5	97			
	Excavator	80	-1	2	CNP081	112	114	EPD-07150	90	Barrier	-5	87			
	Breaker, excavator mounted	20	-7	1	CNP028	122	115			Enclosure	-15	100			
	Water Pump (petrol)	90	0	2	CNP282	103	106			Barrier	-10	96			
	Generator	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85			
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94			
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	20	-7	1	CNP048	112	105	EPD-09130	101	Barrier	-5	89			
	Lorry	20	-7	1	CNP141	112	105	CPME#	105	Barrier	-5	93			
	Ventilation Fan	90	0	1	CNP241	108	108			Barrier	-10	98			
						Total SWL	119						Total SWL	105	
LS-A - Excavation Works (Rock & Installation of Struts) for C&C Tunnel	Dump Truck	50	-3	1	CPME#	105	102			Barrier	-5	97			
	Excavator	80	-3	1	CNP081	112	109	EPD-07150	90	Barrier	-5	82			
	Breaker, excavator mounted	20	-1	3	CNP028	122	126			Enclosure	-15	111			
	Water Pump, Submersible	90	0	2	CNP283	85	88			Barrier	-10	78			
	Generator	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85			
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94			
	Ventilation Fan	90	0	1	CNP241	108	108			Barrier	-10	98			
	Rock Drill	30	-5	1	CNP182	123	118			Barrier	-10	108			
	Lorry	20	-7	1	CNP141	112	105	CPME#	105	Barrier	-5	93			
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	20	-7	1	CNP048	112	105	EPD-09130	101	Barrier	-5	89			
					Total SWL	127						Total SWL	113		

Note:

[1] Percentage on time within 30 minutes.

[2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.

[3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

[4] Breaker, excavator mounted (CNP028) will adopt enclosure with -15dB(A) at Launching Shaft.

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: Plant Inventory (TBM Operation)

TBM Operation		Unmitigated						Mitigated				
Works Area/ Activity	PME	% Operating Time ⁽¹⁾	Time Correction ⁽¹⁾ dB(A)	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	QPME Reference ^{(2), (3)}	Single Unit QPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
LS-A - TBM Operation	Ventilation Fan	100	0	2	CNP241	108	111			Barrier	-10	101
	Chiller Plant	100	0	1	--	88	88					88
	Crawler Crane/ Gantry Crane	60	-2	1	CNP049	95	93			Barrier	-5	88
	Concrete Pump/ Electric Bentonite Circulation Pump	100	0	1	CNP047	109	109			Barrier	-10	99
	Air Compressor	90	0	4	CNP002	102	108			Barrier	-5	103
	Lorry	30	-5	1	CNP141	112	107	CPME#	105	Barrier	-5	95
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	30	-5	1	CNP048	112	107	EPD-09130	101	Barrier	-5	91
	Total SWL					116					Total SWL	106
LS-C - TBM Operation	STP - Slurry Treatment Plant	100	0	1	CNP162	105	105			Barrier	-10	95
	Filter Press Machine	90	0	1	CNP162	105	105			Barrier	-10	95
	Grout Batch Plant	100	0	1	CNP162	105	105			Barrier	-10	95
	Total SWL					110					Total SWL	100

Note:

[1] Percentage on time within 30 minutes.

[2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.

[3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: EAP/EEP - Site Clearance

Site Clearance at EAP/EEP												
Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction dB(A)	Units	PME Reference	Unmitigated			Mitigated			
						Single Unit dB(A)	Total SWL dB(A)	OPME Reference [2],[3]	Single Unit dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
EAP-B - EAP/EEP Site Clearance	Excavator	90	0	2	CNPO81	112	115	EPD-07150	90	Barrier	-5	88
	Breaker, excavator mounted	30	-5	1	CNPO28	122	117			Barrier	-5	112
	Dump Truck	90	0	2	CPME#	105	108			Barrier	-5	103
						Total SWL	119				Total SWL	112

Note:
 [1] Percentage on time within 30 minutes.
 [2] PME with code "EPD-XXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.
 [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: EAPIEEP - Site Reinstatement

Site Reinstatement at EAPIEEP											
Works Area/ Activity	PME	% Operating Time ⁽¹⁾	Time Connection	Units	PME Reference	Unmitigated			Mitigated		
						dB(A)	Single Unit PME	Total SWL	dB(A)	Single Unit QPME	Total SWL
EAP-B: EAPIEEP: Slope Reinstatement	Excavator	90	0	2	CNP081	112	112	115	90	Barrier	88
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	90	0	1	CNP048	112	112	112	101	Barrier	96
	Lorry	90	0	1	CNP141	112	112	105	105	Barrier	100
						Total SWL	118			Total SWL	101
EAP-B: Compensatory tree planting & landscape works	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	90	0	2	CNP048	112	112	115	101	Barrier	99
	Lorry	90	0	2	CNP141	112	112	105	105	Barrier	103
	Excavator	90	0	1	CNP081	112	112	90	90	Barrier	85
						Total SWL	119			Total SWL	104
EAP-B: Boundary fencing erection	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	90	0	1	CNP048	112	112	112	101	Barrier	96
	Lorry	90	0	1	CNP141	112	112	105	105	Barrier	100
	Concrete Lorry Mixer/ Concrete Truck	90	0	2	CNP044	109	112	112	105	Barrier	107
						Total SWL	116			Total SWL	108
						Max SWL⁽⁴⁾	119			Max SWL⁽⁴⁾	108

Note:
 [1] Percentage on time within 30 minutes.
 [2] PME with code "EPD-XXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.
 [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL_e.pdf
 [4] The above construction activities are carried out in phases, i.e. will not happen at the same time at the same workfront.

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: Shun Tung Road - Site Clearance

Site Clearance at Shun Tung Road		Unmitigated				Mitigated						
Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction dB(A)	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference ^{[2],[3]}	Single Unit OPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)
LS-C: Shun Tung Road Site Clearance	Excavator	90	0	2	CNP081	112	115	EPD-07150	90	Barrier	-5	88
	Breaker, excavator mounted	30	-5	1	CNP028	122	117			Barrier	-10	107
	Roller, Vibratory	90	0	1	CNP186	108	108	EPD-06997	94	Barrier	-5	89
	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	90	0	1	CNP048	112	112	EPD-09130	101	Barrier	-5	96
	Lorry	90	0	1	CNP141	112	112	CPME#	105	Barrier	-5	100
	Dump Truck	90	0	1	CNP068	105	105			Barrier	-5	100
	Concrete Lorry Mixer/ Concrete Truck	90	0	1	CNP044	109	109			Barrier	-5	104
	Vibratory Packer	90	0	1	CNP170	113	113	CPME#	102	Barrier	-10	92
	Power Rammer (Petrol)	90	0	1	CNP169	108	108			Barrier	-10	98
						Total SWL	122				Total SWL	110

Note:

[1] Percentage on time within 30 minutes.

[2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.

[3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL.e.pdf

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: Shun Tung Road - Site Reinstatement

Site Reinstatement at Shun Tung Road

Works Area/Activity	PME	% Operating Time ⁽¹⁾	Time Correction dB(A)	Units	Unmitigated			Mitigated				
					PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference ^{(2), (3)}	Single Unit OPME dB(A)	Total SWL dB(A)	Correction dB(A)	Total SWL dB(A)
LS-C: Shun Tung Road Utilities, Road and Drainage Reconstruction	Excavator	90	0	4	CNP081	112	118	EPD-07150	90	Barrier	-5	91
	Roller, Vibratory	90	0	2	CNP186	108	111	EPD-06937	94	Barrier	-5	92
	Mobile Crane/Service Crane/ Crawler Crane/ Lifting crane	90	0	1	CNP048	112	112	EPD-09130	101	Barrier	-5	96
	Lorry	90	0	2	CNP141	112	115	CPME#	105	Barrier	-5	103
	Dump Truck	90	0	2	CPME#	105	108			Barrier	-5	103
	Concrete Lorry Mixer/ Concrete Truck	90	0	2	CNP044	109	112			Barrier	-5	107
	Vibratory Poker	90	0	2	CNP170	113	116	CPME#	102	Barrier	-10	95
	Power Rammer (Petrol)	90	0	1	CNP169	108	108			Barrier	-10	98
						Total SWL	122				Total SWL	110

Note:

[1] Percentage on time within 30 minutes.

[2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.

[3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL.e.pdf

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: Tung Chung Crescent - Site Clearance

Site Clearance at Tung Chung Crescent													
Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction ^[1]	Units	Unmitigated			Mitigated					
					PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference ^{[2], [3]}	Single Unit OPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)	
LS-A: Tung Chung Crescent Site Clearance	Excavator	90	0	2	CNP081	112	115	EPD-07150	90	Barrier	-5	88	
	Breaker, excavator mounted	30	-5	1	CNP028	122	117			Barrier	-10	107	
	Dump Truck	90	0	2	CPME#	105	108			Barrier	-5	103	
					Total SWL	119	119					Total SWL	108

Note:

- [1] Percentage on time within 30 minutes.
- [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.
- [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWLs.pdf

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: TBM Launching Shaft at Tung Chung Crescent - Site Reinstatement

Site Reinstatement at TBM Launching Shaft at Tung Chung Crescent

Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction ^[1]	Units	PMIE Reference	Unmitigated		Mitigated		Total SWL ^[a]	Max SWL ^[a]
						Single Unit PMIE ^[2]	Total SWL ^[2]	Single Unit CPME ^[3]	Total SWL ^[3]		
LS-A: TBM Launching Shaft - Backfilling Shaft	Excavator	90	0	2	CNP081	112	115	90	88	115	107
	Roller, Vibratory	90	0	1	CNP086	108	108	94	89	108	100
	Mobile Crane/ Service Crane/ Lifting crane	90	0	1	CNP048	112	112	101	96	112	100
	Lorry	90	0	1	CNP141	112	112	105	100	112	100
	Dump Truck	90	0	4	CPME#	105	111			105	106
	Total SWL					119				Total SWL	107
LS-A: TBM Launching Shaft - Amenity Area Re-provisioning	Excavator	90	0	2	CNP081	112	115	90	88	115	107
	Mobile Crane/ Service Crane/ Lifting crane	90	0	1	CNP048	112	112	101	96	112	100
	Lorry	90	0	1	CNP141	112	112	105	100	112	100
	Dump Truck	90	0	2	CPME#	105	108			105	103
	Concrete Lorry/Mixer/ Concrete Truck	90	0	2	CNP044	109	112			109	107
	Total SWL					119				Total SWL	109
LS-A: TBM Launching Shaft - Compensatory tree planting & landscape works	Mobile Crane/ Service Crane/ Lifting crane	90	0	1	CNP048	112	112	101	96	112	100
	Lorry	90	0	1	CNP141	112	112	105	100	112	100
							Total SWL			Total SWL	101
						119				Max SWL^[a]	109

Note:

[1] Percentage on time within 30 minutes.

[2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's QPME inventory.

[3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWLs.pdf

[4] The above construction activities are carried out in phases, i.e. will not happen at the same time at the same workfront.

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: Launching Shaft and Cut & Cover Tunnel (Underground) - Structural Works

Structural Works at Cut & Cover Tunnel		Unmitigated				Mitigated							
Works Area/ Activity	PME	% Operating Time ^[1]	Time Correction ^[2]	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference ^[3]	Single Unit OPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)	
C&C Tunnel - C&C Tunnel Base Slab + Drill & Fix Connection to Existing Overrun Tunnels	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	50	-3	2	CNP048	112	112	EPD-09130	101	Barrier	-5	96	
	Lorry	30	-5	2	CNP141	112	110	CPME#	105	Barrier	-5	98	
	Generator	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85	
	Air Compressor	20	-7	1	CNP003	104	97	EPD-09607	93	Barrier	-5	81	
	Bar Bender and Cutter	70	-2	2	CNP021	90	88			Barrier	-10	78	
	Ventilation Fan	90	0	2	CNP241	108	111			Barrier	-10	101	
	Concrete Lorry Mixer/ Concrete Truck	80	-1	1	CNP044	109	108			Barrier	-5	103	
	Concrete Pump/ Electric Bentonite Circulation Pump	80	-1	1	CNP047	109	108			Barrier	-10	98	
	Saw, Circular, Wood	50	-3	2	CNP201	0	0				-	0	
	Electric drill/ Rock driller	60	-2	2	CNP064	0	0				-	0	
	Vibratory Poker	60	-2	3	CNP170	0	0				-	0	
	Water Pump, Submersible	50	-3	2	CNP283	0	0				-	0	
	Total SWL						117						107
	C&C Tunnel - C&C Tunnel Side Walls + Drill & Fix Connection to Existing Overrun Tunnels + Remove Struts	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	50	-3	2	CNP048	112	112	EPD-09130	101	Barrier	-5	96
Lorry		30	-5	2	CNP141	112	110	CPME#	105	Barrier	-5	98	
Generator		90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85	
Air Compressor		20	-7	1	CNP003	104	97	EPD-09607	93	Barrier	-5	81	
Bar Bender and Cutter		70	-2	2	CNP021	90	88			Barrier	-10	78	
Ventilation Fan		90	0	2	CNP241	108	111			Barrier	-10	101	
Concrete Lorry Mixer/ Concrete Truck		80	-1	1	CNP044	109	108			Barrier	-5	103	
Concrete Pump/ Electric Bentonite Circulation Pump		80	-1	1	CNP047	109	108			Barrier	-10	98	
Saw, Circular, Wood		50	-3	2	CNP201	0	0				-	0	
Electric drill/ Rock driller		60	-2	2	CNP064	0	0				-	0	
Vibratory Poker		60	-2	3	CNP170	0	0				-	0	
Water Pump, Submersible		50	-3	2	CNP283	0	0				-	0	
Total SWL							117						107
C&C Tunnel - C&C Tunnel Roof Slabs + Drill & Fix Connection to Existing Overrun Tunnels + Remove Struts		Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	50	-3	2	CNP048	112	112	EPD-09130	101	Barrier	-5	96
	Lorry	30	-5	2	CNP141	112	110	CPME#	105	Barrier	-5	98	
	Generator	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85	
	Air Compressor	20	-7	1	CNP003	104	97	EPD-09607	93	Barrier	-5	81	
	Bar Bender and Cutter	70	-2	2	CNP021	90	88			Barrier	-10	78	
	Ventilation Fan	90	0	2	CNP241	108	111			Barrier	-10	101	
	Concrete Lorry Mixer/ Concrete Truck	80	-1	1	CNP044	109	108			Barrier	-5	103	
	Concrete Pump/ Electric Bentonite Circulation Pump	80	-1	1	CNP047	109	108			Barrier	-10	98	
	Saw, Circular, Wood	50	-3	2	CNP201	0	0				-	0	
	Electric drill/ Rock driller	60	-2	2	CNP064	0	0				-	0	
	Vibratory Poker	60	-2	3	CNP170	0	0				-	0	
	Water Pump, Submersible	50	-3	2	CNP283	0	0				-	0	
	Total SWL						117						107

Note:
 [1] Percentage on time within 30 minutes
 [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory.
 [3] The plant with code "CPME#F" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWLs.pdf
 [4] The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A).

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: Launching Shaft and Cut & Cover Tunnel (Underground) - Structural Works

Works Area/ Activity		PME	% Operating Time ⁽¹⁾	Time Correction ⁽²⁾ dB(A)	Units	PME Reference	Single Unit PME dB(A)	Total SWL dB(A)	OPME Reference ^{(2),(3)} dB(A)	Single Unit OPME dB(A)	Mitigation Measures	Correction dB(A)	Total SWL dB(A)	
LS-D - Construction of Launching Shaft Base Slab	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	1	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94	
	Lorry	1	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97	
	Generator	2	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85	
	Air Compressor	2	20	-7	1	CNP003	104	97	EPD-09607	93	Barrier	-5	81	
	Bar Bender and Cutter	2	70	-2	1	CNP021	90	88			Barrier	-10	78	
	Ventilation Fan	1	90	0	1	CNP241	108	108			Barrier	-10	98	
	Concrete Lorry Mixer/ Concrete Truck	1	80	-1	1	CNP044	109	108			Barrier	-5	103	
	Concrete Pump/ Electric Bentonite Circulation Pump	1	80	-1	1	CNP047	109	108			Barrier	-10	98	
	Saw, Circular, Wood	2	50	-3	2	CNP201	0	0				-	0	
	Electric drill/ Rock driller	2	60	-2	2	CNP064	0	0				-	0	
	Vibratory Poker	3	60	-2	3	CNP170	0	0				-	0	
	Water Pump, Submersible	2	50	-3	2	CNP283	0	0				-	0	
	Total SWL						116						Total SWL	106
	LS-D - Construction of Launching Shaft Side Walls + Remove Struts	Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	1	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
Lorry		1	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97	
Generator		2	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85	
Air Compressor		2	20	-7	1	CNP003	104	97	EPD-09607	93	Barrier	-5	81	
Bar Bender and Cutter		2	70	-2	1	CNP021	90	88			Barrier	-10	78	
Ventilation Fan		1	90	0	1	CNP241	108	108			Barrier	-10	98	
Concrete Lorry Mixer/ Concrete Truck		1	80	-1	1	CNP044	109	108			Barrier	-5	103	
Concrete Pump/ Electric Bentonite Circulation Pump		1	80	-1	1	CNP047	109	108			Barrier	-10	98	
Saw, Circular, Wood		2	50	-3	2	CNP201	0	0				-	0	
Electric drill/ Rock driller		2	60	-2	2	CNP064	0	0				-	0	
Vibratory Poker		3	60	-2	3	CNP170	0	0				-	0	
Water Pump, Submersible		2	50	-3	2	CNP283	0	0				-	0	
Total SWL							116					Total SWL	106	
LS-D - Construction of Launching Shaft Roof Slab + Remove Struts		Mobile Crane/ Service Crane/ Crawler Crane/ Lifting crane	1	70	-2	1	CNP048	112	110	EPD-09130	101	Barrier	-5	94
	Lorry	1	50	-3	1	CNP141	112	109	CPME#	105	Barrier	-5	97	
	Generator	2	90	0	2	CNP103	95	98	EPD-10735	87	Barrier	-5	85	
	Air Compressor	2	20	-7	1	CNP003	104	97	EPD-09607	93	Barrier	-5	81	
	Bar Bender and Cutter	2	70	-2	1	CNP021	90	88			Barrier	-10	78	
	Ventilation Fan	1	90	0	1	CNP241	108	108			Barrier	-10	98	
	Concrete Lorry Mixer/ Concrete Truck	1	80	-1	1	CNP044	109	108			Barrier	-5	103	
	Concrete Pump/ Electric Bentonite Circulation Pump	1	80	-1	1	CNP047	109	108			Barrier	-10	98	
	Saw, Circular, Wood	2	50	-3	2	CNP201	0	0				-	0	
	Electric drill/ Rock driller	2	60	-2	2	CNP064	0	0				-	0	
	Vibratory Poker	3	60	-2	3	CNP170	0	0				-	0	
	Water Pump, Submersible	2	50	-3	2	CNP283	0	0				-	0	
	Total SWL						116					Total SWL	106	

Note:
 [1] Percentage on time within 30 minutes
 [2] PME with code "EPD-XXXXX" are quiet equipment with SWLs extracted from EPD's OPME inventory
 [3] The plant with code "CPME#" are referenced from EPD's guidance "Sound Power Level of Other Commonly Used PME" from https://www.epd.gov.hk/epd/sites/default/files/epd/english/application_for_licences/guidance/files/OtherSWL.e.pdf
 [4] The PME working underground is shaded in grey and the SWL is assumed as 0 dB(A)

PME Inventory for Bargaining Point

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title : Bargaining Point - Plant Inventory

Source	SWL /Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)
<u>Construction of Bargaining Point Facilities</u>				
Generator	95	1	100%	95
Mobile Crane	112	1	100%	112
Excavator	112	1	100%	112
Electric Drill	103	2	100%	106
Vibratory Poker	113	2	100%	116
Flat-top Barge Bargaining Point 1	104	1	100%	104
Tug Boat Bargaining Point 1	110	1	100%	110
Flat-top Barge Bargaining Point 2	104	1	100%	104
Tug Boat Bargaining Point 2	110	1	100%	110
<u>Site Clearance</u>				
Generator	95	1	100%	95
Mobile Crane	112	1	100%	112
Excavator	112	1	100%	112
<u>Bargaining Point Operation</u>				
Generator	95	2	100%	98
Flat-top Barge at Bargaining Point 1	104	1	100%	104
Barge at Bargaining Point 1	104	2	100%	107
Tug Boat at Bargaining Point 1	110	1	100%	110
Flat-top Barge at Bargaining Point 2	104	1	100%	104
Barge at Bargaining Point 2	104	2	100%	107
Tug Boat at Bargaining Point 2	110	1	100%	110
<u>Bargaining Point Operation (Dump truck - Haul Road)</u>				
Dump Truck - Daytime only	105	132	100%	126
<u>Demolition of Bargaining Point Facilities</u>				
Generator	95	1	100%	95
Mobile Crane	112	1	100%	112
Excavator	112	1	100%	112
Electric Drill	103	2	100%	106
Tug Boat at Bargaining Point 1	110	1	100%	110
<u>Site Reinstatement</u>				
Generator	95	1	100%	95
Mobile Crane	112	1	100%	112
Excavator	112	1	100%	112
Electric Drill	103	2	100%	106

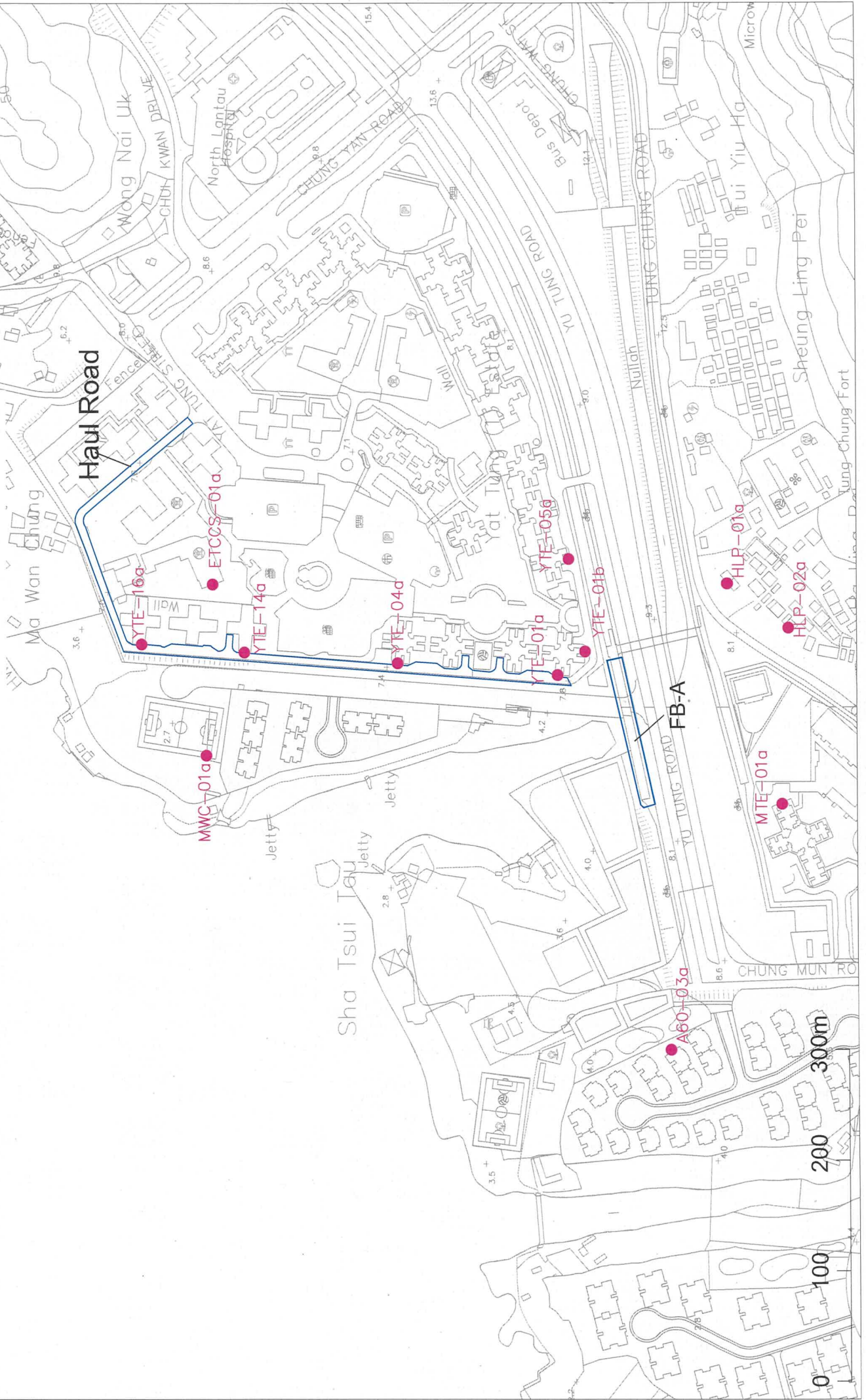
Appendix 3.5

Locations of Workfronts for Construction

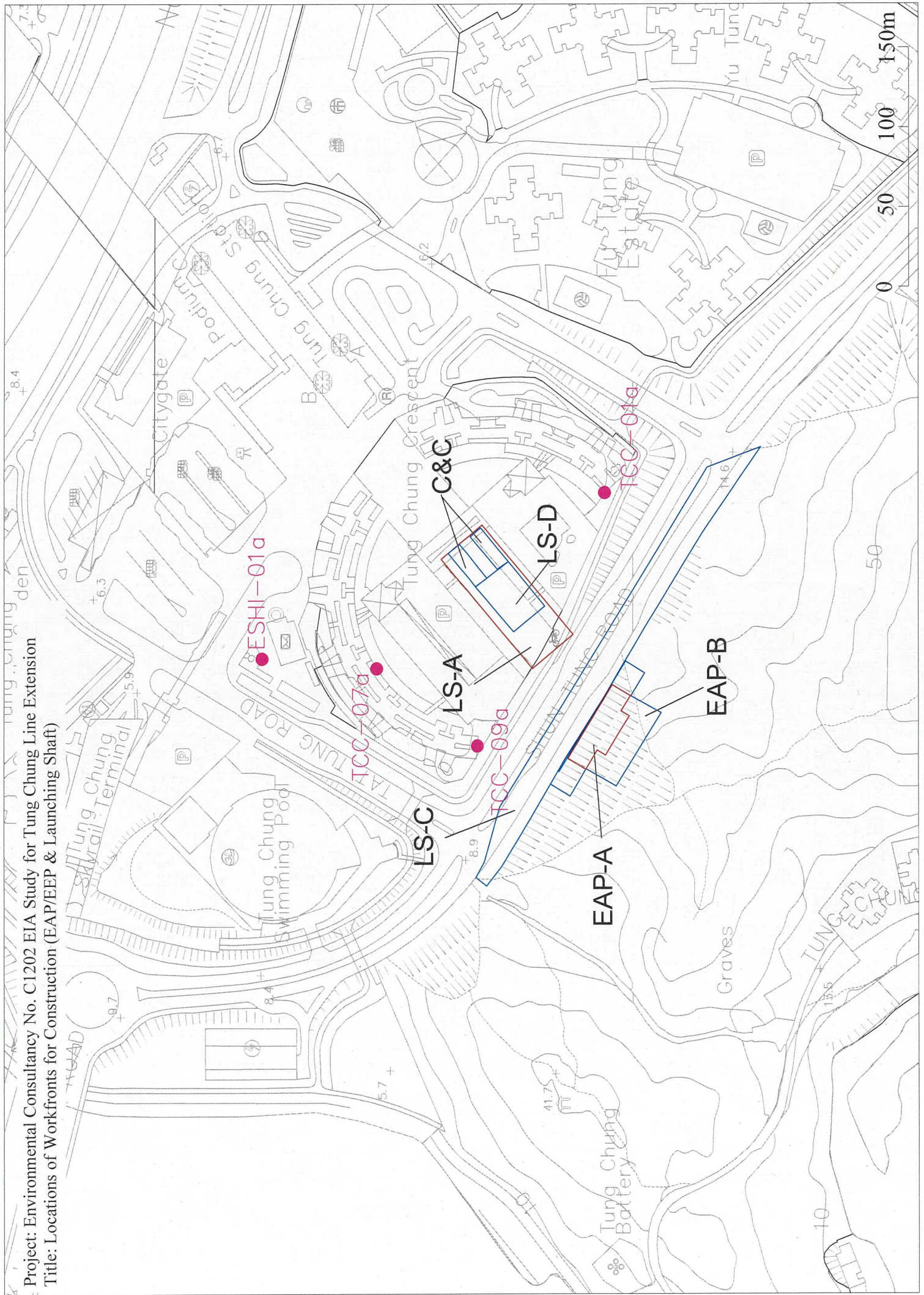
Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: Location of Workfronts for Construction (Tung Chung West)
 Construction Activities: Excavation Works and Structural Works

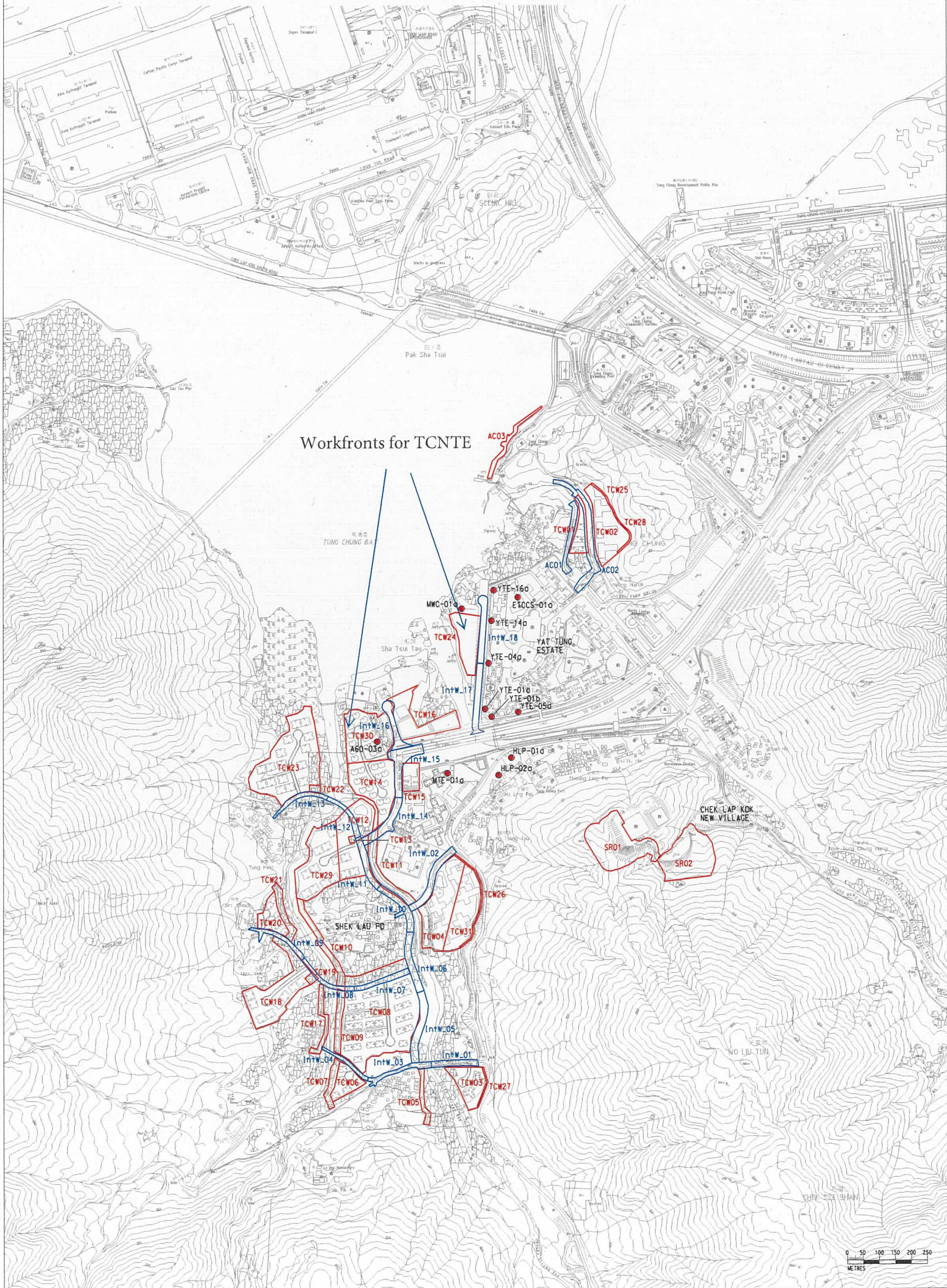


Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: Location of Workfronts for Construction (Tung Chung West)
Construction Activities: Demolition of Footbridge and Haul Road



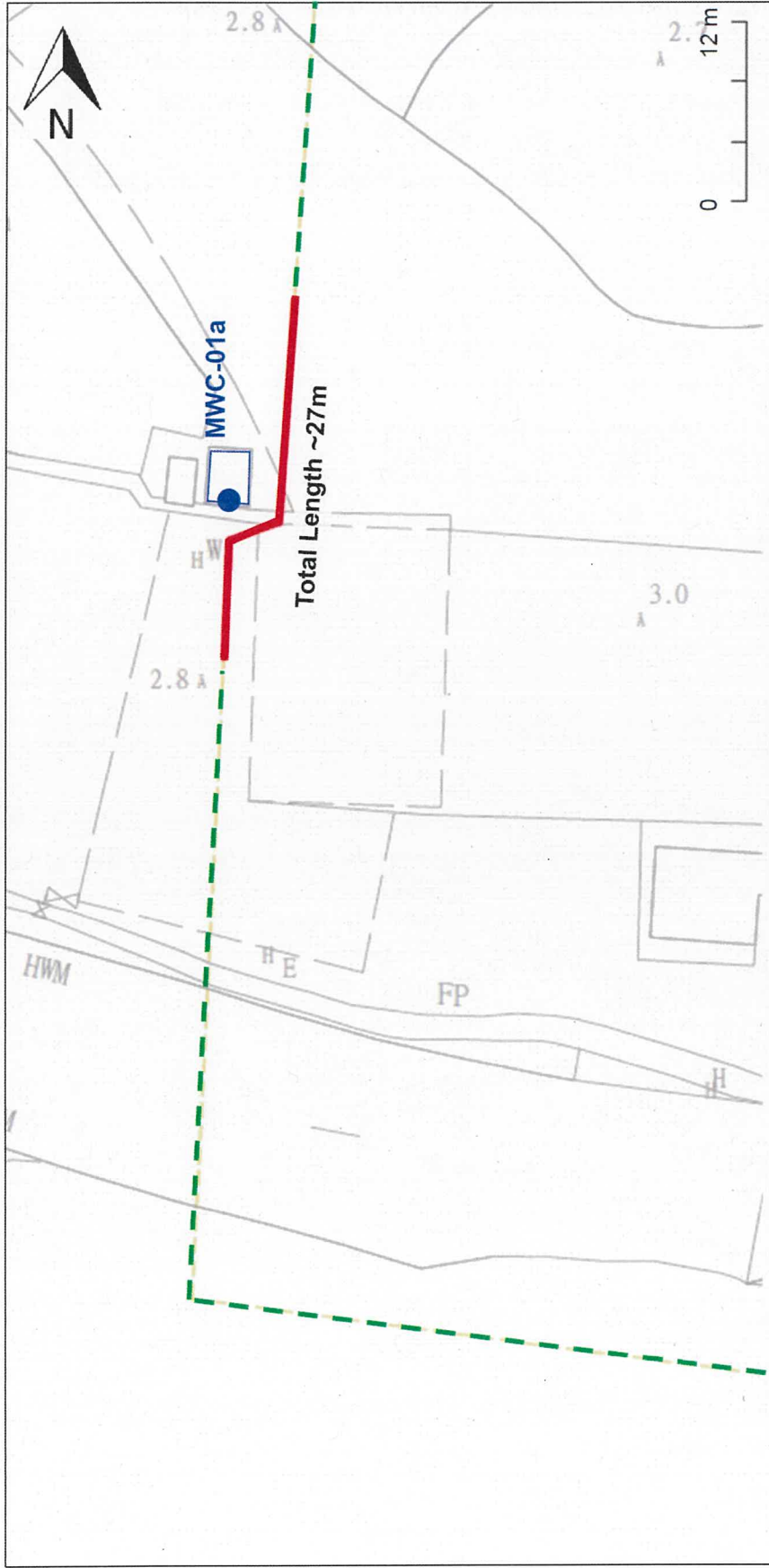
Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title: Locations of Workfronts for Construction (EAP/EEP & Launching Shaft)





Appendix 3.6

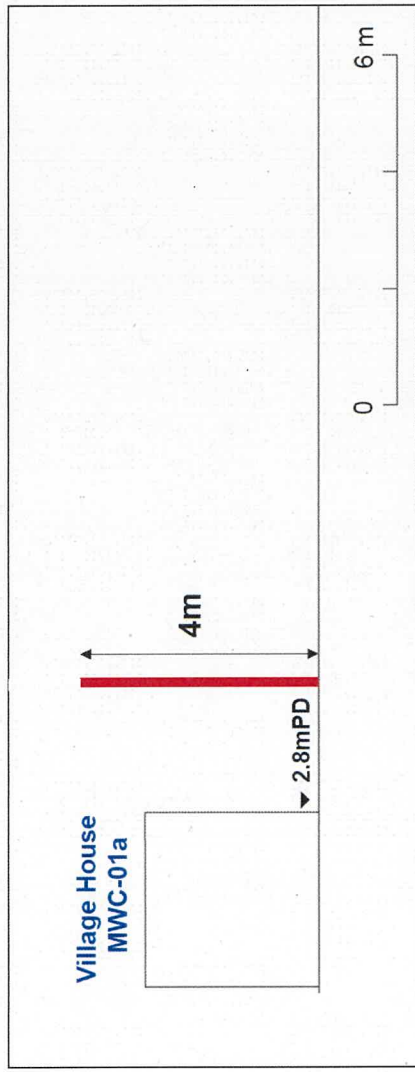
Locations of Noise Barrier at Ma Wan Chung (Extracted from AEIAR-235/2022)



- Design of the Proposed Barrier:**
- Gaps and openings at joints should be avoided;
 - The length of the barrier should be about 27m while the height should be about 4m; and
 - Surface density of the barrier no less than 7kg/m².

Legend

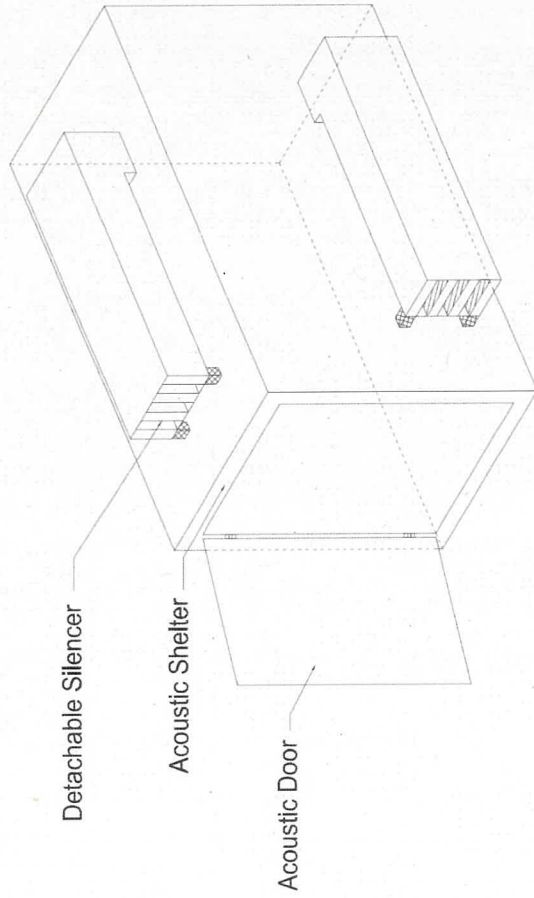
- Noise Assessment Point (NAP)
- Proposed Barrier along the boundary
- - - Boundary of the Workfront at TCW Station



ARUP Ove Arup & Partners Hong Kong Limited		MTTR MTR Corporation Limited	
TITLE: LOCATION OF THE NOISE BARRIER AT MA WAN CHUNG			
PROJECT: C1202 - EIA for Tung Chung Line Extension			
DRAWN CHECKED APPROVED DATE: 16/08/2021	GL GL EL FC	ORIGINAL	FIGURE REF.: FIGURE 4.4.1.A.dgn
GL FC DATE: 16/08/2021	FC DATE: 16/08/2021	APPROVED BY:	REV. A
DESCRIPTION:	OCCUPATION:	DATE:	REV. A

Appendix 3.7

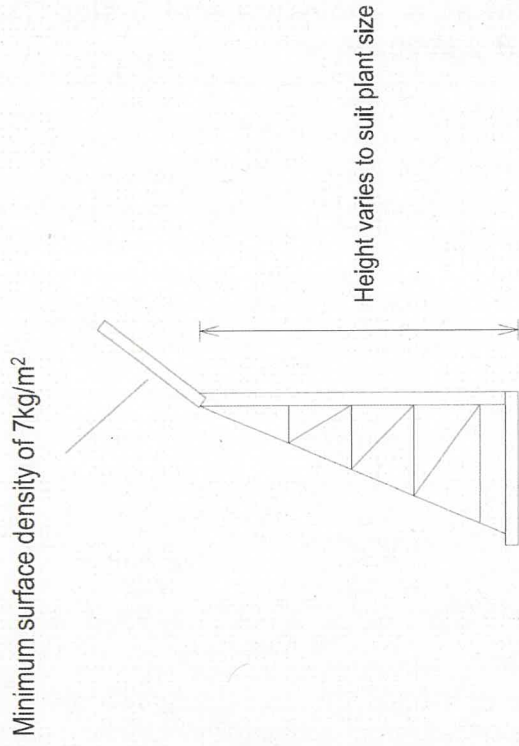
Sketch of Typical Temporary Noise Barrier & Enclosure and 3-side Temporary Movable Enclosure (Extracted from AEIAR-235/2022)



Acoustic Shelter Enclosure System
 (Demountable Type)

Note: Adequate ventilation will be provided as appropriate with necessary noise mitigation to achieve 15 dB(A) noise reduction. The noise enclosure shall be constructed in accordance with relevant safety and legislative requirements in Hong Kong for normal operation. Discharges from any diesel engine within the enclosure should be ducted to the discharge outlets. The ducting is vital for the discharge of combustion exhaust, as it could avoid development of stagnant toxic gas within the enclosure, besides for ensuring proper air circulations.

Section of Typical Temporary Noise Enclosure

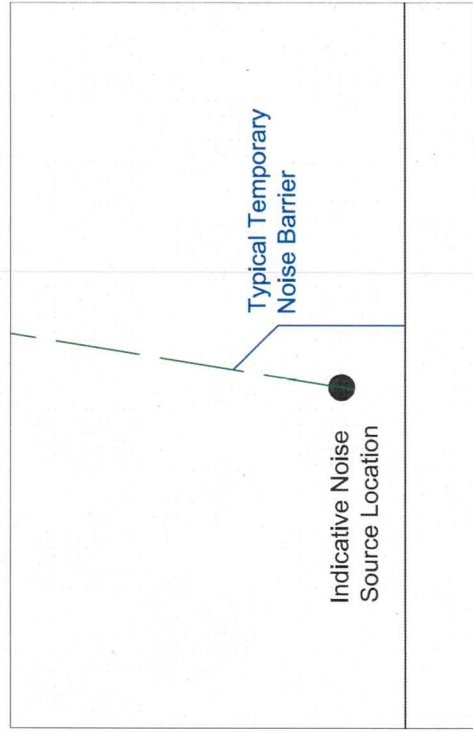
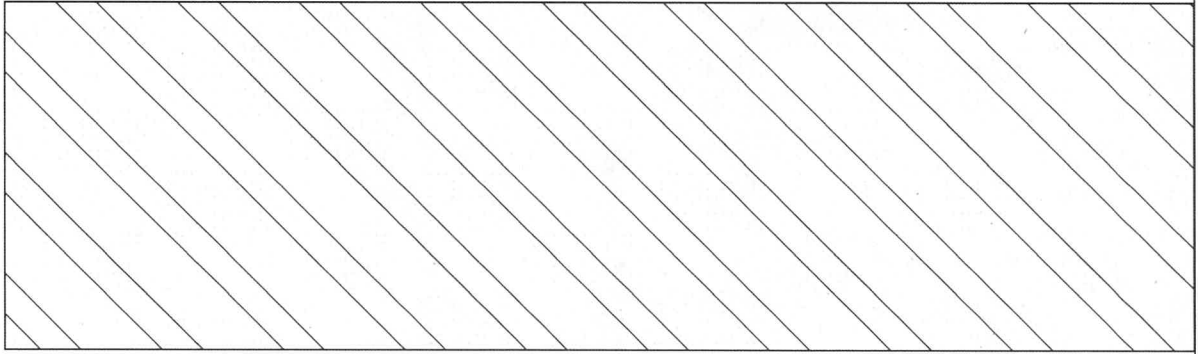


Typical Section of Temporary Movable Noise Barrier
 (2-4m tall)

Section of Typical Temporary Noise Barrier

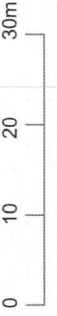
Indicative Section Drawing of the Use of Typical Temporary Noise Barrier at Yat Tung Estate

Yat Tung Estate
Fuk Yat House



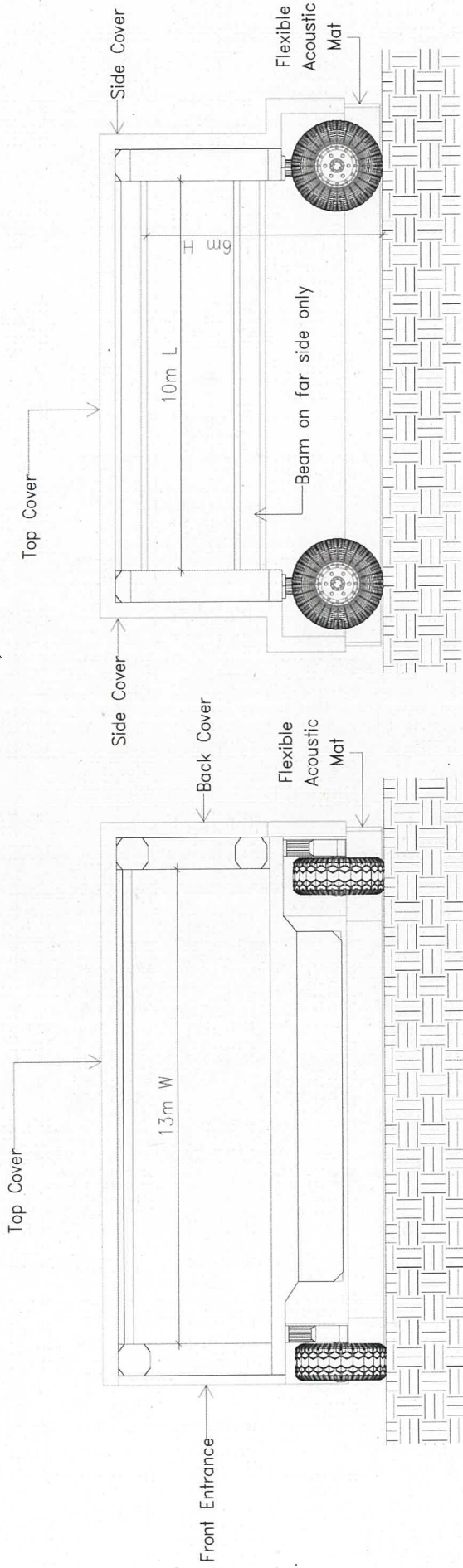
Indicative
Noise Source
Location

Typical Temporary
Noise Barrier



Note: The section drawing is for indicative purpose and for reference only.

Project: Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title: Sketch of Typical Temporary Noise Barrier & Enclosure and 3-side temporary movable enclosure



1 Side Profile
 NTS

2 Front Entrance
 NTS

Section of 3-side Temporary Movable Enclosure

Note

This figure of movable noise enclosure is for indicative purpose and the design including dimensions is subject to further review. For reference, the approximate dimensions of the low headroom trench cutter that was adopted in construction of Tuen Ma Line was : 5m(W) x 11m(L) x 5m (H).

Appendix 3.8

Predicted Construction Noise Impacts with Implementation of Noise Mitigated Measures

Mitigated Construction Noise for TCW

Project : Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title : Construction Noise Calculation
 Scenario : Mitigated Scenario

Activity	2023			2024												2025					
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Site Clearance at LCW																					
TOW Site Clearance	108	108	108	108	108																
Construction of Diaphragm Wall on Station East Side																					
E- Zone A Construction of Diaphragm Wall	100					100	100														
E- Zone A Installation of Mini-piles	100					100	100														
E- Zone B Construction of Diaphragm Wall	100					100	100														
E- Zone B Installation of Mini-piles	100					100	100														
E- Zone C Construction of Diaphragm Wall	100					100	100														
E- Zone C Installation of Mini-piles	99					99	99														
E- Zone D Construction of Diaphragm Wall	100					100	100														
E- Zone D Installation of Mini-piles	99					99	99														
E- Zone E Construction of Diaphragm Wall	99					99	99														
E- Zone E Installation of Mini-piles	100					100	100														
Construction of Diaphragm Wall on Station West Side																					
W- Zone A Construction of Diaphragm Wall	101																				
W- Zone A Installation of Mini-piles	100																				
W- Zone B Construction of Diaphragm Wall	100																				
W- Zone B Installation of Mini-piles	101																				
W- Zone C Construction of Diaphragm Wall	100																				
W- Zone C Installation of Mini-piles	101																				
W- Zone D Construction of Diaphragm Wall	100																				
W- Zone D Installation of Mini-piles	100																				
W- Zone E Construction of Diaphragm Wall	101																				
W- Zone E Installation of Mini-piles	100																				
Construction of Diaphragm Wall on Station East Side & West Side - Stationary Plants																					
Dwell S1 Diaphragm Wall Construction - Supporting Stationary Plants	98																				
Dwell S2 Diaphragm Wall Construction - Supporting Stationary Plants	96																				
Dwell S3 Diaphragm Wall Construction - Supporting Stationary Plants	94																				
Dwell S4 Diaphragm Wall Construction - Supporting Stationary Plants	97																				
Dwell S5 Diaphragm Wall Construction - Supporting Stationary Plants	98																				
Dwell S6 Diaphragm Wall Construction - Supporting Stationary Plants	80																				
Dwell S7 Mini-piles Installation (Zone A) - Supporting Stationary Plants	90																				
Dwell S8 Mini-piles Installation (Zone B) - Supporting Stationary Plants	90																				
Dwell S9 Mini-piles Installation (Zone C) - Supporting Stationary Plants	90																				
Dwell S10 Mini-piles Installation (Zone D) - Supporting Stationary Plants	90																				
Dwell S11 Mini-piles Installation (Zone E) - Supporting Stationary Plants	90																				
Works Area WA W02 for D-wall Steel Case Rebar Fixing Works																					
WA W02 - D-wall Steel Case Rebar Fixing Works	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	
LCW Excavation																					
Mucking out Opening A1 - Excavation Works	101																				
Excavation S1 - Stationary Plant for Excavation Zone A	85																				
Mucking out Opening B1 - Excavation Works	99																				
Mucking out Opening B2 - Excavation Works	100																				
Excavation S1 - Stationary Plant for Excavation Zone B	85																				
Mucking out Opening C1 - Excavation Works	98																				
Mucking out Opening C2 - Excavation Works	100																				
Excavation S2 - Stationary Plant for Excavation Zone C	85																				
Mucking out Opening D1 - Excavation Works	98																				
Mucking out Opening D2 - Excavation Works	100																				
Excavation S2 - Stationary Plant for Excavation Zone D	85																				
Mucking out Opening E1 - Excavation Works	101																				
Excavation S3 - Stationary Plant for Excavation Zone E	82																				

Project : Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title : Construction Noise Calculation
 Scenario : Mitigated Scenario

Site Clearance at TCW	2020												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
TCW Site Clearance	100												
Construction of Diaphragm Wall on Station East Side													
E-Zone A Construction of Diaphragm Wall	100												
E-Zone B Installation of Mini-piles	100												
E-Zone C Construction of Diaphragm Wall	100												
E-Zone D Installation of Mini-piles	100												
E-Zone E Construction of Diaphragm Wall	99												
E-Zone F Installation of Mini-piles	100												
E-Zone G Construction of Diaphragm Wall	99												
E-Zone H Installation of Mini-piles	100												
Construction of Diaphragm Wall on Station West Side													
W-Zone A Construction of Diaphragm Wall	101												
W-Zone B Installation of Mini-piles	100												
W-Zone C Construction of Diaphragm Wall	101												
W-Zone D Installation of Mini-piles	100												
W-Zone E Construction of Diaphragm Wall	101												
W-Zone F Installation of Mini-piles	100												
W-Zone G Construction of Diaphragm Wall	101												
W-Zone H Installation of Mini-piles	100												
Construction of Diaphragm Wall on Station East Side & West Side - Stationary Plants													
Dwell S1 Diaphragm Wall Construction - Supporting Stationary Plants	98												
Dwell S2 Diaphragm Wall Construction - Supporting Stationary Plants	96												
Dwell S3 Diaphragm Wall Construction - Supporting Stationary Plants	94												
Dwell S4 Diaphragm Wall Construction - Supporting Stationary Plants	97												
Dwell S5 Diaphragm Wall Construction - Supporting Stationary Plants	96												
Dwell S6 Diaphragm Wall Construction - Supporting Stationary Plants	80												
Dwell S7 Mini-piles Installation (Zone A) - Supporting Stationary Plants	90												
Dwell S8 Mini-piles Installation (Zone B) - Supporting Stationary Plants	90												
Dwell S9 Mini-piles Installation (Zone C) - Supporting Stationary Plants	90												
Dwell S10 Mini-piles Installation (Zone D) - Supporting Stationary Plants	90												
Dwell S11 Mini-piles Installation (Zone E) - Supporting Stationary Plants	90												
Works Area WA W02 for D-wall Steel Cage Rebar Fixing Works													
WA W02 - D-wall Steel Cage Rebar Fixing Works	103												
TCW Excavation													
Mucking out Opening A1 - Excavation Works	101												
Excavation S1 - Stationary Plant for Excavation Zone A	85												
Mucking out Opening B1 - Excavation Works	99												
Mucking out Opening B2 - Excavation Works	100												
Excavation S1 - Stationary Plant for Excavation Zone B	85												
Mucking out Opening C1 - Excavation Works	98												
Mucking out Opening C2 - Excavation Works	100												
Excavation S2 - Stationary Plant for Excavation Zone C	85												
Mucking out Opening D1 - Excavation Works	98												
Mucking out Opening D2 - Excavation Works	100												
Excavation S3 - Stationary Plant for Excavation Zone D	85												
Mucking out Opening E1 - Excavation Works	101												
Excavation S3 - Stationary Plant for Excavation Zone E	82												

Project : Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension

Title : Construction Noise Calculation

Scenario : Mitigated Scenario

	2023			2024			2025			Nov	Dec
	Jun	Jul	Aug	Jun	Jul	Aug	Jun	Jul	Aug		
TCW Structural Works											
Mucking out Opening A1 - Structural Works (Roof Slab)											
Mucking out Opening A1 - Structural Works (Other Than Roof Slab)											
Structural S1 - Stationary Plant for Structural Zone A											
Mucking out Opening B1 - Structural Works (Roof Slab)											
Mucking out Opening B1 - Structural Works (Other Than Roof Slab)											
Mucking out Opening B2 - Structural Works (Roof Slab)											
Mucking out Opening B2 - Structural Works (Other Than Roof Slab)											
Structural S1 - Stationary Plant for Structural Zone B											
Mucking out Opening C1 - Structural Works (Roof Slab)											
Mucking out Opening C1 - Structural Works (Other Than Roof Slab)											
Mucking out Opening C2 - Structural Works (Roof Slab)											
Mucking out Opening C2 - Structural Works (Other Than Roof Slab)											
Structural S2 - Stationary Plant for Structural Zone C											
Mucking out Opening D1 - Structural Works (Roof Slab)											
Mucking out Opening D1 - Structural Works (Other Than Roof Slab)											
Mucking out Opening D2 - Structural Works (Roof Slab)											
Mucking out Opening D2 - Structural Works (Other Than Roof Slab)											
Structural S2 - Stationary Plant for Structural Zone D											
Mucking out Opening E1 - Structural Works (Roof Slab)											
Mucking out Opening E1 - Structural Works (Other Than Roof Slab)											
Structural S2 - Stationary Plant for Structural Zone E											
TCW Vent Shaft Structure and Entrances - Foundation Works											
North Vent Shaft Structure - Foundation Works											
Building S1 - Stationary Plant for North Vent Shaft Structure Foundation Works											
Entrance A - Foundation Works											
Building S2 - Stationary Plant for Entrance A - Foundation Works											
TCW Vent Shaft Structure and Entrances - Excavation Works											
North Vent Shaft Structure - Excavation Works											
Building S1 - Stationary Plant for North Vent Shaft Structure Excavation Works											
Entrance A - Excavation Works											
Building S2 - Stationary Plant for Entrance A - Excavation Works											
TCW Vent Shaft Structure and Entrances - Structural Works											
South Vent Shaft Structure - Structural Works											
Building S2 - Stationary Plant for South Vent Shaft Structure Structural Works											
North Vent Shaft Structure - Structural Works											
Building S1 - Stationary Plant for North Vent Shaft Structure Structural Works											
Entrance A - Structural Works											
Building S2 - Stationary Plant for Entrance A Structural Works											
Entrance B - Structural Works											
Building S1 - Stationary Plant for Entrance B Structural Works											
Site Reinstatement											
TCW Site Reinstatement											
Footbridge Modification											
Footbridge Demolition											

Project : Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
Title : Construction Noise Calculation
Scenario : Mitigated Scenario

	2026												2027												2028												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
TCW Structural Works																																					
Mucking out Opening A1 - Structural Works (Roof Slab)																																					
Mucking out Opening A1 - Structural Works (Other Than Roof Slab)																																					
Structural S1 - Stationary Plant for Structural Zone A																																					
Mucking out Opening B1 - Structural Works (Roof Slab)																																					
Mucking out Opening B1 - Structural Works (Other Than Roof Slab)																																					
Mucking out Opening B2 - Structural Works (Roof Slab)																																					
Mucking out Opening B2 - Structural Works (Other Than Roof Slab)																																					
Structural S1 - Stationary Plant for Structural Zone B																																					
Mucking out Opening C1 - Structural Works (Roof Slab)																																					
Mucking out Opening C1 - Structural Works (Other Than Roof Slab)																																					
Mucking out Opening C2 - Structural Works (Roof Slab)																																					
Mucking out Opening C2 - Structural Works (Other Than Roof Slab)																																					
Structural S2 - Stationary Plant for Structural Zone C																																					
Mucking out Opening D1 - Structural Works (Roof Slab)																																					
Mucking out Opening D1 - Structural Works (Other Than Roof Slab)																																					
Mucking out Opening D2 - Structural Works (Roof Slab)																																					
Mucking out Opening D2 - Structural Works (Other Than Roof Slab)																																					
Structural S2 - Stationary Plant for Structural Zone D																																					
Mucking out Opening E1 - Structural Works (Roof Slab)																																					
Mucking out Opening E1 - Structural Works (Other Than Roof Slab)																																					
Structural S2 - Stationary Plant for Structural Zone E																																					
TCW Vent Shaft Structure and Entrances - Foundation Works																																					
North Vent Shaft Structure - Foundation Works																																					
Building S1 - Stationary Plant for North Vent Shaft Structure Foundation Works																																					
Entrance A - Foundation Works																																					
Building S2 - Stationary Plant for Entrance A - Foundation Works																																					
TCW Vent Shaft Structure and Entrances - Excavation Works																																					
North Vent Shaft Structure - Excavation Works																																					
Building S1 - Stationary Plant for North Vent Shaft Structure Excavation Works																																					
Entrance A - Excavation Works																																					
Building S2 - Stationary Plant for Entrance A - Excavation Works																																					
TCW Vent Shaft Structure and Entrances - Structural Works																																					
South Vent Shaft Structure - Structural Works																																					
Building S2 - Stationary Plant for South Vent Shaft Structure Structural Works																																					
North Vent Shaft Structure - Structural Works																																					
Building S1 - Stationary Plant for North Vent Shaft Structure Structural Works																																					
Entrance A - Structural Works																																					
Building S2 - Stationary Plant for Entrance A - Structural Works																																					
Entrance B - Structural Works																																					
Building S1 - Stationary Plant for Entrance B - Structural Works																																					
Site Reinstatement																																					
TCW Site Reinstatement																																					
Facilities Modification																																					
Footbridge Demolition																																					

Project : Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title : Construction Noise Calculation
 Scenario : Mitigated Scenario

	2020												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug					
TCW Structural Works													
Mucking out Opening A1 - Structural Works (Roof Slab)													102
Mucking out Opening A1 - Structural Works (Other Than Roof Slab)													99
Structural S1 - Stationary Plant for Structural Zone A													104
Mucking out Opening B1 - Structural Works (Roof Slab)													102
Mucking out Opening B1 - Structural Works (Other Than Roof Slab)													100
Mucking out Opening B2 - Structural Works (Roof Slab)													102
Mucking out Opening B2 - Structural Works (Other Than Roof Slab)													100
Structural S1 - Stationary Plant for Structural Zone B													104
Mucking out Opening C1 - Structural Works (Roof Slab)													102
Mucking out Opening C1 - Structural Works (Other Than Roof Slab)													100
Mucking out Opening C2 - Structural Works (Roof Slab)													102
Mucking out Opening C2 - Structural Works (Other Than Roof Slab)													100
Structural S2 - Stationary Plant for Structural Zone C													104
Mucking out Opening D1 - Structural Works (Roof Slab)													102
Mucking out Opening D1 - Structural Works (Other Than Roof Slab)													100
Mucking out Opening D2 - Structural Works (Roof Slab)													102
Mucking out Opening D2 - Structural Works (Other Than Roof Slab)													100
Structural S2 - Stationary Plant for Structural Zone D													106
Mucking out Opening E1 - Structural Works (Roof Slab)													102
Mucking out Opening E1 - Structural Works (Other Than Roof Slab)													99
Structural S2 - Stationary Plant for Structural Zone E													104
TCW Vent Shaft Structure and Entrances - Foundation Works													
North Vent Shaft Structure - Foundation Works													103
Building S1 - Stationary Plant for North Vent Shaft Structure Foundation Works													93
Entrance A - Foundation Works													100
Building S2 - Stationary Plant for Entrance A - Foundation Works													90
TCW Vent Shaft Structure and Entrances - Excavation Works													
North Vent Shaft Structure - Excavation Works													99
Building S1 - Stationary Plant for North Vent Shaft Structure Excavation Works													82
Entrance A - Excavation Works													99
Building S2 - Stationary Plant for Entrance A - Excavation Works													82
TCW Vent Shaft Structure and Entrances - Structural Works													
South Vent Shaft Structure - Structural Works													100
Building S2 - Stationary Plant for South Vent Shaft Structure Structural Works													103
North Vent Shaft Structure - Structural Works													100
Building S1 - Stationary Plant for North Vent Shaft Structure Structural Works													104
Entrance A - Structural Works													100
Building S2 - Stationary Plant for Entrance A Structural Works													104
Entrance B - Structural Works													100
Building S1 - Stationary Plant for Entrance B Structural Works													103
Site Reinstatement													
TCW Site Reinstatement													110
Footbridge Modification													
Footbridge Demolition													109

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			Mitigated	SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Lorry with Crane	II	105	2	100%	108	6	5	180	-8	3	-7	-5 (Barrier)	58
Noise Impacts from Haul Road, dB(A)													
58													

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			Mitigated	SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Lorry with Crane	II	105	2	100%	108	6	5	180	-8	3	-7	-5 (Barrier)	58
Noise Impacts from Haul Road, dB(A)													
58													

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			Mitigated	SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Lorry with Crane	II	105	2	100%	108	6	5	180	-8	3	-7	-5 (Barrier)	58
Noise Impacts from Haul Road, dB(A)													
58													

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			Mitigated	SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Lorry with Crane	II	105	2	100%	108	7	5	180	-8	3	-7	-5 (Barrier)	58
Noise Impacts from Haul Road, dB(A)													
58													

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			Mitigated	SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Lorry with Crane	II	105	2	100%	108	170	5	180	-22	3	-7	-5 (Barrier)	43
Noise Impacts from Haul Road, dB(A)													
43													

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			Mitigated	SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Lorry with Crane	II	105	2	100%	108	205	5	180	-23	3	-7	-5 (Barrier)	42
Noise Impacts from Haul Road, dB(A)													
42													

Project : EIA for Tung Chung Line Extension
 Title : Preliminary Noise Assessment from TCW Haul Road
 Subtitle : Construction of Haul Road at Yat Tung Estate (Mitigated)

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			Mitigated	SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Lorry with Crane	II - vehicle / hr - Daytime only	105	2	100%	108	220	5	180	-23	3	-7	0	42
Noise Impacts from Haul Road, dB(A)													
42													

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			Mitigated	SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Lorry with Crane	II - vehicle / hr - Daytime only	105	2	100%	108	70	5	180	-18	3	-7	0	47
Noise Impacts from Haul Road, dB(A)													
47													

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			Mitigated	SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Lorry with Crane	II - vehicle / hr - Daytime only	105	2	100%	108	N/A [3]	5	N/A [3]	N/A [3]	3	-7	N/A [3]	N/A [3]
Noise Impacts from Haul Road, dB(A)													
N/A [3]													

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			Mitigated	SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Lorry with Crane	II - vehicle / hr - Daytime only	105	2	100%	108	N/A [3]	5	N/A [3]	N/A [3]	3	-7	N/A [3]	N/A [3]
Noise Impacts from Haul Road, dB(A)													
N/A [3]													

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			Mitigated	SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Lorry with Crane	II - vehicle / hr - Daytime only	105	2	100%	108	90	5	180	-20	3	-7	0	46
Noise Impacts from Haul Road, dB(A)													
46													

Note:
 I - Daytime, evening and night-time operation
 II - Daytime operation only
 III - Evening operation only

[1] : Based on BS 5228 Pt 1: 1997 D3.5.2 Method for mobile plant using a regular well defined route (haul road)
 $L_{eq} = L_w - 33 + 10 \log(Qty) - 10 \log(speed) - 10 \log(dist) + 10 \log(angle/180) + C_{facade}$

[2] : A view angle of 180 deg has been assumed for conservative assessment

[3] : The view angle of the receiver will not include the haul road.

Project : Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title : Construction Noise Calculation
 Scenario : Mitigated Scenario

NSR	2023												2024												2025											
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec					
	Max	65	65	65	65	65	69	69	69	63	63	63	63	63	63	63	63	63	69	69	69	73	72	69	69	70	67	67	70	68	66					
YTE-16a	73	68	68	68	68	70	70	70	70	70	70	70	70	70	70	70	70	69	69	69	70	70	70	70	70	70	70	70	70	70	70					
YTE-14a	73	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	72	72	72	72	72	72	72	72	72	72	72	71	68	69					
YTE-04a	75	70	70	70	70	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	72	71	71						
HLP-01a	63	63	63	63	63	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58						
HLP-02a	63	63	63	63	63	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61						
MTE-01a	68	68	68	68	68	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67						
ETCCS-01a	64	58	58	58	58	60	60	60	60	59	59	59	59	59	59	59	59	60	60	60	61	63	63	62	62	61	61	62	61	61						
YTE-01b	71	71	71	71	71	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65						
YTE-05a	66	64	64	64	64	64	64	64	64	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58						
A60-03a	59																																			
MWC-01a	73	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61						

Predicted Construction Noise of the Haul Road at Yat Tung Estate, dB(A)		
NSR	Max	NSR
YTE-16a	58	58
YTE-14a	58	58
YTE-04a	58	58
YTE-01a	58	58
HLP-01a	43	43
HLP-02a	42	42
MTE-01a	47	47
ETCCS-01a	0	0
YTE-01b	0	0
YTE-05a	0	0
A60-03a	46	46
MWC-01a	46	46

Predicted Construction Noise from the Project, dB(A)		
NSR	Max	NSR
YTE-16a	66	66
YTE-14a	69	69
YTE-04a	72	72
YTE-01a	70	70
HLP-01a	63	63
HLP-02a	63	63
MTE-01a	68	68
ETCCS-01a	64	58
YTE-01b	71	71
YTE-05a	66	64
A60-03a	61	61
MWC-01a	73	61

Note:
 1. As a worst case scenario, the predicted construction noise is calculated using the distance between the notional centre of the workforce to the closest NSR.
 2. Text in red in shaded cell denotes exceedance of relevant criterion.
 3. Cell with shaded area denotes the unoccupancy of the NSR (i.e. before the population intake).

Project : Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension

Title : Construction Noise Calculation

Scenario : Mitigated Scenario

Predicted Construction Noise of the Project (without Haul Road), dB(A)	2020												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Max				
NSR	67	67	67	67	67	67	67	67	67	67	67	67	67
YTE-16a	73	70	70	70	70	70	70	70	70	70	70	70	70
YTE-14a	73	73	73	73	73	73	73	73	73	73	73	73	73
YTE-04a	75	67	67	67	67	67	67	67	67	67	67	67	67
HLP-01a	63	55	55	55	55	55	55	55	55	55	55	55	55
HLP-02a	63	55	55	55	55	55	55	55	55	55	55	55	55
MTE-01a	68	55	55	55	55	55	55	55	55	55	55	55	55
ETCCS-01a	64	56	56	56	56	56	56	56	56	56	56	56	56
YTE-01b	71	61	61	61	61	61	61	61	61	61	61	61	61
YTE-05a	66	58	58	58	58	58	58	58	58	58	58	58	58
AGD-03a	59	56	56	56	56	56	56	56	56	56	56	56	56
MWC-01a	73	69	69	69	69	69	69	69	69	69	69	69	69

Predicted Construction Noise of the Haul Road at Yat Tung Estate, dB(A)

NSR	Max												
YTE-16a	58	0	0	0	0	0	0	0	0	0	0	0	0
YTE-14a	58	0	0	0	0	0	0	0	0	0	0	0	0
YTE-04a	58	0	0	0	0	0	0	0	0	0	0	0	0
HLP-01a	43	0	0	0	0	0	0	0	0	0	0	0	0
HLP-02a	42	0	0	0	0	0	0	0	0	0	0	0	0
MTE-01a	42	0	0	0	0	0	0	0	0	0	0	0	0
ETCCS-01a	47	0	0	0	0	0	0	0	0	0	0	0	0
YTE-01b	0	0	0	0	0	0	0	0	0	0	0	0	0
YTE-05a	0	0	0	0	0	0	0	0	0	0	0	0	0
AGD-03a	0	0	0	0	0	0	0	0	0	0	0	0	0
MWC-01a	46	0	0	0	0	0	0	0	0	0	0	0	0

Predicted Construction Noise from the Project, dB(A)

NSR	Max												
YTE-16a	73	67	67	67	67	67	67	67	67	67	67	67	67
YTE-14a	73	70	70	70	70	70	70	70	70	70	70	70	70
YTE-04a	74	73	73	73	73	73	73	73	73	73	73	73	73
HLP-01a	75	67	67	67	67	67	67	67	67	67	67	67	67
HLP-02a	63	55	55	55	55	55	55	55	55	55	55	55	55
MTE-01a	68	55	55	55	55	55	55	55	55	55	55	55	55
ETCCS-01a	64	56	56	56	56	56	56	56	56	56	56	56	56
YTE-01b	71	61	61	61	61	61	61	61	61	61	61	61	61
YTE-05a	66	58	58	58	58	58	58	58	58	58	58	58	58
AGD-03a	59	56	56	56	56	56	56	56	56	56	56	56	56
MWC-01a	73	69	69	69	69	69	69	69	69	69	69	69	69

- Note:
1. As a worst case scenario, the predicted construction noise is calculated using the distance between the national centre of the workfront to the closest NSR.
 2. Text in red in shaded cell denotes exceedance of relevant criterion.
 3. Cell with shaded area denotes the unoccupancy of the NSR (i.e. before the population intake).

Title : Construction Noise Calculation for TCNTE
Scenario : Mitigated Scenario

Activities	2029												
	Jan	Feb	March	Apr	May	June	July	Aug					
AC01													
AC02													
AC03													
SR01													
A2 - Site Formation (Soil and Rock)													
Service Reservoir Structure													
Landscaping													
SR02													
A2 - Site Formation (Soil and Rock)													
Service Reservoir Structure													
Landscaping													
TCW01 (Area 48)													
B1 - High PR Residential Foundations													
B2 - High PR Residential Foundations and High PR Residential Superstructure													
B3 - High PR Residential Superstructure													
TCW02 (Area 23)													
A2 - Site Formation (Soil and Rock)													
B1 - High PR Residential Foundations													
B2 - High PR Residential Foundations and High PR Residential Superstructure													
B3 - High PR Residential Superstructure													
TCW03 (Area 46)													
A1 - Site Formation (Soil)													
B1 - High PR Residential Foundations													
B2 - High PR Residential Foundations and High PR Residential Superstructure													
B3 - High PR Residential Superstructure													
TCW04 (Area 42)													
A1 - Site Formation (Soil)													
B1 - High PR Residential Foundations													
B2 - High PR Residential Foundations and High PR Residential Superstructure													
B3 - High PR Residential Superstructure													
TCW05													
D1 - Filler Formation													
TCW06 (Area 71B)													
C1 - Medium PR Residential / GIC Foundations													
C2 - Medium PR Residential / GIC Foundations and Medium PR Residential / GIC Superstructure													
C3 - Medium PR Residential / GIC Superstructure													

Title : Construction Noise Calculation for TCNTE
 Scenario : Mitigated Scenario

Activities	2026												2027												2028												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
TCW07																																					
D1 - Folder Formation																																					
TCW08 (Area 71A)																																					
C1 - Medium PR Residential/ GIC Foundations																																					
C2 - Medium PR Residential/ GIC Foundations and Medium PR Residential/ GIC Superstructure																																					
C3 - Medium PR Residential GIC Superstructure																																					
TCW09																																					
D1 - Folder Formation																																					
TCW10																																					
D1 - Folder Formation																																					
TCW12																																					
C1 - Medium PR Residential/ GIC Foundations																																					
C2 - Medium PR Residential/ GIC Foundations and Medium PR Residential/ GIC Superstructure																																					
C3 - Medium PR Residential/ GIC Superstructure																																					
TCW13																																					
F1 - SPS Foundations																																					
F2 - SPS Foundations and Superstructure																																					
F3 - SPS Superstructure																																					
TCW14																																					
C1 - Medium PR Residential/ GIC Foundations																																					
C2 - Medium PR Residential/ GIC Foundations and Medium PR Residential/ GIC Superstructure																																					
C3 - Medium PR Residential/ GIC Superstructure																																					
TCW15																																					
F1 - SPS Foundations																																					
F2 - SPS Foundations and Superstructure																																					
F3 - SPS Superstructure																																					
TCW16																																					
B1 - High PR Residential Foundations																																					
B2 - High PR Residential Foundations and High PR Residential Superstructure																																					
B3 - High PR Residential Superstructure																																					
TCW17																																					
D1 - Folder Formation																																					
TCW18																																					
C1 - Medium PR Residential/ GIC Foundations																																					
C2 - Medium PR Residential/ GIC Foundations and Medium PR Residential/ GIC Superstructure																																					
C3 - Medium PR Residential/ GIC Superstructure																																					

Title: Construction Noise Calculation for TCNTE
Scenario: Mitigated Scenario

Activities	2029												
	Jan	Feb	March	Apr	May	June	July	Aug					
TOW7													
D1 - Folder Formation													
TOW8 (Area 71A)													
G1 - Medium PR Residential / GIC Foundations													
C2 - Medium PR Residential / GIC Foundations and Medium PR Residential / GIC Superstructure													
C3 - Medium PR Residential / GIC Superstructure													
TOW9													
D1 - Folder Formation													
TOW10													
D1 - Folder Formation													
TOW12													
C1 - Medium PR Residential / GIC Foundations													
C2 - Medium PR Residential / GIC Foundations and Medium PR Residential / GIC Superstructure													
C3 - Medium PR Residential / GIC Superstructure													
TOW13													
F1 - SPS Foundations													
F2 - SPS Foundations and Superstructure													
F3 - SPS Superstructure													
TOW14													
C1 - Medium PR Residential / GIC Foundations													
C2 - Medium PR Residential / GIC Foundations and Medium PR Residential / GIC Superstructure													
C3 - Medium PR Residential / GIC Superstructure													
TOW15													
F1 - SPS Foundations													
F2 - SPS Foundations and Superstructure													
F3 - SPS Superstructure													
TOW16													
B1 - High PR Residential Foundations													
B2 - High PR Residential Foundations and High PR Residential Superstructure													
B3 - High PR Residential Superstructure													
TOW17													
D1 - Folder Formation													
TOW18													
C1 - Medium PR Residential / GIC Foundations													
C2 - Medium PR Residential / GIC Foundations and Medium PR Residential / GIC Superstructure													
C3 - Medium PR Residential / GIC Superstructure													

Title : Construction Noise Calculation for TCNTE
 Scenario : Mitigated Scenario

Activities	2026												2027												2028											
	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
TOW19																																				
F1 - SPS Foundations	102	102	102	102																																
F2 - SPS Foundations and Superstructure					96	96	96	96	96	96																										
F3 - SPS Superstructure											104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	
TOW20																																				
C1 - Medium PR Residential / GIC Foundations	108	108	108	108																																
C2 - Medium PR Residential / GIC Foundations and Medium PR Residential / GIC Superstructure					108	108	108	108	108	108																										
C3 - Medium PR											106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106		
TOW21																																				
D1 - Folder Formation					105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105		
TOW22																																				
F1 - SPS Foundations	102	102	102	102																																
F2 - SPS Foundations and Superstructure					96	96	96	96	96	96																										
F3 - SPS											104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104		
TOW23																																				
C1 - Medium PR Residential / GIC Foundations	108	108	108	108																																
C2 - Medium PR Residential / GIC Foundations and Medium PR Residential / GIC Superstructure					108	108	108	108	108	108																										
C3 - Medium PR Residential / GIC Superstructure											105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105		
TOW25																																				
A2 - Site Formation (Soil and Rock) Drill																																				
TOW26																																				
A1 - Site Formation (Soil) Drill																																				
TOW27																																				
A1 - Site Formation (Soil) Drill	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100		
TOW28																																				
A1 - Site Formation (Soil) Drill																																				
TOW29																																				
C1 - Medium PR Residential / GIC Foundations																																				
C2 - Medium PR Residential / GIC Foundations and Medium PR Residential / GIC Superstructure																																				
C3 - Medium PR Residential / GIC Superstructure																																				
TOW30																																				
C1 - Medium PR Residential / GIC Foundations	105	105	105	105																																
C2 - Medium PR Residential / GIC Foundations and Medium PR Residential / GIC Superstructure					105	105	105	105	105	105																										
C3 - Medium PR Residential / GIC Superstructure											103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103		
TOW31																																				
A1 - Site Formation (Soil)																																				
B1 - High PR Residential Foundations																																				
B2 - High PR Residential Foundations and High PR Residential Superstructure																																				
B3 - High PR Residential Superstructure	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106		

Title : Construction Noise Calculation for TCNTE
Scenario : Mitigated Scenario

Activities	2026												2027												2028												
	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
IntW_01 (Internal Road)																																					
IntW_02 (Internal Road)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
IntW_03 (Internal Road)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
IntW_04 (Internal Road)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
IntW_05 (Internal Road)																																					
IntW_06 (Internal Road)																																					
IntW_07 (Internal Road)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
IntW_08 (Internal Road)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
IntW_09 (Internal Road)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
IntW_10 (Internal Road)																																					
IntW_11 (Internal Road)																																					
IntW_12 (Internal Road)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
IntW_13 (Internal Road)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
IntW_14 (Internal Road)																																					
IntW_15 (Internal Road)																																					
IntW_16 (Internal Road)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
IntW_17 (Internal Road)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
IntW_18 (Internal Road)																																					
IntW_19 (Internal Road)																																					
IntW_20 (Internal Road)																																					
IntW_21 (Internal Road)																																					
IntW_22 (Internal Road)																																					
IntW_23 (Internal Road)																																					
IntW_24 (Internal Road)																																					
IntW_25 (Internal Road)																																					
IntW_26 (Internal Road)																																					
IntW_27 (Internal Road)																																					
IntW_28 (Internal Road)																																					
IntW_29 (Internal Road)																																					

Title : Construction Noise Calculation for TCNTE
 Scenario : Mitigated Scenario

Activities	2019												
	Jan	Feb	March	Apr	May	June	July	Aug					
intw_01 (Internal Road)													
intw_02 (Internal Road)													
intw_03 (Internal Road)													
intw_04 (Internal Road)													
intw_05 (Internal Road)													
intw_06 (Internal Road)													
intw_07 (Internal Road)													
intw_08 (Internal Road)													
intw_09 (Internal Road)													
intw_10 (Internal Road)													
intw_11 (Internal Road)													
intw_12 (Internal Road)													
intw_13 (Internal Road)													
intw_14 (Internal Road)													
intw_15 (Internal Road)													
intw_16 (Internal Road)													
intw_17 (Internal Road)													
intw_18 (Internal Road)													
intw_19 (Internal Road)													
intw_20 (Internal Road)													
intw_21 (Internal Road)													
intw_22 (Internal Road)													
intw_23 (Internal Road)													
intw_24 (Internal Road)													
intw_25 (Internal Road)													
intw_26 (Internal Road)													
intw_27 (Internal Road)													
intw_28 (Internal Road)													
intw_29 (Internal Road)													

Title : Construction Noise Calculation for TCNTE
Scenario : Mitigated Scenario

Activities	2029												
	Jan	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Predicted Construction Noise, d(B)A													
Max	52	0	0	0	0	0	0	0	0	0	0	0	0
YTE-16a	52	0	0	0	0	0	0	0	0	0	0	0	0
YTE-14a	55	0	0	0	0	0	0	0	0	0	0	0	0
YTE-14b	55	0	0	0	0	0	0	0	0	0	0	0	0
YTE-01a	61	0	0	0	0	0	0	0	0	0	0	0	0
YTE-01b	61	0	0	0	0	0	0	0	0	0	0	0	0
HLF-01a	62	0	0	0	0	0	0	0	0	0	0	0	0
HLF-02a	61	0	0	0	0	0	0	0	0	0	0	0	0
WTE-01a	61	0	0	0	0	0	0	0	0	0	0	0	0
WTE-01b	61	0	0	0	0	0	0	0	0	0	0	0	0
ETCS-01a	53	0	0	0	0	0	0	0	0	0	0	0	0
ETCS-01b	53	0	0	0	0	0	0	0	0	0	0	0	0
YTE-05a	52	0	0	0	0	0	0	0	0	0	0	0	0
YTE-05b	52	0	0	0	0	0	0	0	0	0	0	0	0
AGG-03a	56	0	0	0	0	0	0	0	0	0	0	0	0
MMWC-01a	57	50	50	50	50	50	50	50	50	50	50	50	50

[1] Cell with shaded area denotes the unoccupancy of the NSR (i.e. before the population intake).

Project : Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension

Title : Construction Noise Calculation

Scenario : Mitigated Scenario

Predicted Construction Noise from the Project, dB(A)	2029												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Max				
NSR	67	67	67	67	67	67	67	67	67	67	67	67	67
YTE-16a	73	70	70	70	70	70	70	70	70	70	70	70	70
YTE-14a	73	73	73	73	73	73	73	73	73	73	73	73	73
YTE-04a	75	67	67	67	67	67	67	67	67	67	67	67	67
YTE-01a	63	55	55	55	55	55	55	55	55	55	55	55	55
HLP-01a	63	55	55	55	55	55	55	55	55	55	55	55	55
HLP-02a	68	55	55	55	55	55	55	55	55	55	55	55	55
ETCCS-01a	64	56	56	56	56	56	56	56	56	56	56	56	56
MTE-01a	71	61	61	61	61	61	61	61	61	61	61	61	61
YTE-05a	66	58	58	58	58	58	58	58	58	58	58	58	58
AGD-03a	59	56	56	56	56	56	56	56	56	56	56	56	56
MWC-01a	73	69	69	69	69	69	69	69	69	69	69	69	69

TCNTE EIA (i) Predicted Construction Noise, dB(A)

NSR	Max												
YTE-16a	52	0	0	0	0	0	0	0	0	0	0	0	0
YTE-14a	55	0	0	0	0	0	0	0	0	0	0	0	0
YTE-04a	58	0	0	0	0	0	0	0	0	0	0	0	0
YTE-01a	61	0	0	0	0	0	0	0	0	0	0	0	0
HLP-01a	62	0	0	0	0	0	0	0	0	0	0	0	0
HLP-02a	61	0	0	0	0	0	0	0	0	0	0	0	0
MTE-01a	61	0	0	0	0	0	0	0	0	0	0	0	0
ETCCS-01a	53	0	0	0	0	0	0	0	0	0	0	0	0
YTE-01b	64	0	0	0	0	0	0	0	0	0	0	0	0
YTE-05a	52	0	0	0	0	0	0	0	0	0	0	0	0
AGD-03a	58	0	0	0	0	0	0	0	0	0	0	0	0
MWC-01a	57	50	50	50	50	50	50	50	50	50	50	50	50

Cumulative Predicted Construction Noise, dB(A)

NSR	Max												
YTE-16a	73	67	67	67	67	67	67	67	67	67	67	67	67
YTE-14a	73	70	70	70	70	70	70	70	70	70	70	70	70
YTE-04a	74	73	73	73	73	73	73	73	73	73	73	73	73
YTE-01a	75	67	67	67	67	67	67	67	67	67	67	67	67
HLP-01a	65	55	55	55	55	55	55	55	55	55	55	55	55
HLP-02a	69	55	55	55	55	55	55	55	55	55	55	55	55
MTE-01a	64	56	56	56	56	56	56	56	56	56	56	56	56
ETCCS-01a	72	61	61	61	61	61	61	61	61	61	61	61	61
YTE-01b	66	58	58	58	58	58	58	58	58	58	58	58	58
YTE-05a	62	56	56	56	56	56	56	56	56	56	56	56	56
AGD-03a	73	69	69	69	69	69	69	69	69	69	69	69	69

- Note:
1. As a worst case scenario, the predicted construction noise is calculated using the distance between the notional centre of the workforce to the closest NSR.
 2. Text in red in shaded cell denotes exceedance of relevant criterion.
 3. Cell with shaded area denotes the uncertainty of the NSR (i.e. before the population intake).
 4. The plant inventory for construction of TCNTE is retrieved from approved EIA report for TCNTE (AEIAR-18/2016).

Mitigated Construction Noise for EAP / EEP
and Launching Shaft

Activity	2026												2027												2028											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
EAP/EEP Site Formation Works - Temporary Wall																																				
EAP-A - Installation of Pipe Piles																																				
EAP/EEP Site Formation Works - Slope Excavation																																				
EAP-B - Slope Excavation																																				
EAP-B - Installation of Tie Back Anchor																																				
EAP-B - Installation of Strut and Walling																																				
EAP/EEP - Foundation and Shaft Excavation Works																																				
EAP-B - Installation of Pre-bored H-piles																																				
EAP-A - Hard Excavation (Shaft Zone)																																				
EAP/EEP - Building (Above Ground) and Shaft Zone (Underground)																																				
EAP-A - Construction of EAP/EEP Building (Aboveground)																																				
EAP-A - Construction of Shaft Structure and Shafts																																				
Launching Shaft - Foundation Work																																				
LS-A - Construction of Diaphragm Wall at TCC																																				
LS-A - Installation of Pre-bored H-piles at TCC																																				
LS-A - Installation of Pipe Piles at TCC																																				
Launching Shaft - Excavation Work																																				
LS-A - Excavation Works (Soft & Installation of Struts) for Launching Shaft																																				
LS-A - Excavation Works (Rock & Installation of Struts) for Launching Shaft																																				
LS-A - Excavation Works (Soft & Installation of Struts) for C&C Tunnel																																				
LS-A - Excavation Works (Rock & Installation of Struts) for C&C Tunnel																																				
TBM Operation																																				
LS-A - TBM Operation																																				
LS-C - TBM Operation																																				
Site Clearance & Site Reinforcement																																				
EAP-B - Site Clearance																																				
EAP-B - Site Reinforcement																																				
LS-C - Shun Tung Road Site Clearance																																				
LS-C - Shun Tung Rd Site Reinforcement																																				
LS-A - Site Clearance																																				
LS-A - Site Reinforcement																																				
C&C Tunnel - Structural Works																																				
C&C Tunnel - C&C Tunnel Base Slab + Drill & Fix Connection to Existing Overrun Tunnels																																				
C&C Tunnel - C&C Tunnel Side Walls + Drill & Fix Connection to Existing Overrun Tunnels + Remove																																				
C&C Tunnel - C&C Tunnel Roof Slabs + Drill & Fix Connection to Existing Overrun Tunnels + Remove																																				
Launching Shaft - Structural Works																																				
LS-D - Construction of Launching Shaft Base Slab																																				
LS-D - Construction of Launching Shaft Side Walls + Remove Struts																																				
LS-D - Construction of Launching Shaft Roof Slab + Remove Struts																																				

Predicted Construction Noise, dB(A)

NSR	Max	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CC-09a	67	68	67	67	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	
CC-09b	73	66	66	66	66	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	
ESCH-01a	65	60	61	60	60	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	
CC-07a	71	66	66	66	66	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	

Note:
 1. As a worst case scenario, the predicted construction noise is calculated using the distance between the national centre of the workforce to the closest NSR.
 2. Text in red in shaded cell denotes exceedance of relevant criterion.

Project : Environmental Consultancy No. C1202 EIA Study for Tung Chung Line Extension
 Title : Construction Noise Calculation
 Scenario : Mitigated Scenario

	2023												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug					
EAP/EEP Site Formation Works - Temporary Wall													
EAP-A - Installation of Pipe Piles													
EAP/EEP Site Formation Works - Slope Excavation													
EAP-B - Slope Excavation													
EAP-B - Installation of Tie Back Anchor	117												
EAP-B - Installation of Strut and Walling	103												
EAP-B - Installation of Strut and Walling	99												
EAP/EEP - Foundation and Shaft Excavation Works													
EAP-B - Installation of Pre-bored P-iles	101												
EAP-A - Hard Excavation (Shaft Zone)	100												
EAP/EEP - Buildings (Above Ground) and Shaft Zone (Underground)													
EAP-A - Construction of EAP/EEP Building (Aboveground)	107												
EAP-A - Construction of Shaft Structure and Staircases	105												
Launching Shaft - Foundation Work													
LS-A - Construction of Diaphragm Wall at TOC	107												
LS-A - Installation of Pre-bored H-piles at TOC	104												
LS-A - Installation of Pipe Piles at TOC	103												
Launching Shaft - Excavation Work													
LS-A - Excavation Works (Soft & Installation of Shuts) for Launching Shaft	105												
LS-A - Excavation Works (Rock & Installation of Shuts) for Launching Shaft	113												
LS-A - Excavation Works (Soft & Installation of Shuts) for C&C Tunnel	105												
LS-A - Excavation Works (Rock & Installation of Shuts) for C&C Tunnel	113												
TBM Operation													
LS-A - TBM Operation	106												
LS-C - TBM Operation	100												
Site Clearance & Site Reinstatement													
EAP-B - Site Clearance	112												
EAP-B - Site Reinstatement	108												
LS-C - Shun Tung Road Site Clearance	110												
LS-C - Shun Tung Rd Site Reinstatement	110	110	110	110	110	110							
LS-A - Site Clearance	108												
LS-A - Site Reinstatement	109	109	109	109	109	109	109	109	109	109	109	109	109
C&C Tunnel - Structural Works													
C&C Tunnel - C&C Tunnel Base Slab + Drill & Fix Connection to Existing Overrun Tunnels	107												
C&C Tunnel - C&C Tunnel Side Walls + Drill & Fix Connection to Existing Overrun Tunnels + Remove	107												
C&C Tunnel - C&C Tunnel Roof Slabs + Drill & Fix Connection to Existing Overrun Tunnels + Remove	107												
Launching Shaft - Structural Works													
LS-D - Construction of Launching Shaft Base Slab	106												
LS-D - Construction of Launching Shaft Side Walls + Remove Struts	106												
LS-D - Construction of Launching Shaft Roof Slab + Remove Struts	106												
Predicted Construction Noise, d(B(A))													
NSR													
Max													
TOC-01a	75	74	74	74	74	74	74	74	74	74	74	74	74
TOC-01b	73	72	72	72	72	72	72	72	72	72	72	72	72
ES-01a	65	65	65	65	65	65	65	65	65	65	65	65	65
TOC-01c	71	67	67	67	67	67	67	67	67	67	67	67	67

Note:
 1. As a worst case scenario, the predicted construction noise is calculated using the distance between the notional centre of the workfront to the closest NSR.
 2. Text in red in shaded cell denotes exceedance of relevant criterion.

Unmitigated Construction Noise for
Barging Facility

Project : EIA for Tung Chung Line Extension
Title : Preliminary Noise Assessment from Barging Point
Subtitle : Construction of Barging Point Facilities (Unmitigated) NSR : A54-01a

Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Correction		SPL Daytime dB(A)
						Dist dB(A)	Screen dB(A)	
<i>Daytime</i>								
Generator (CNP103) Barging Area	95	1	100%	95	160	-52	3	46
Mobile Crane (CNP048) Barging Area	112	1	100%	112	160	-52	3	63
Excavator (CNP081) Barging Area	112	1	100%	112	160	-52	3	63
Electric Drill (CNP064) Barging Area	103	2	100%	106	160	-52	3	57
Vibratory Poker(CNP170) Barging Area	113	2	100%	116	160	-52	3	67
Flat-top Barge (CNP061) Barging Point 1	104	1	100%	104	300	-58	3	49
Tug Boat (CNP221) Barging Point 1	110	1	100%	110	340	-59	3	54
Flat-top Barge (CNP061) Barging Point 2	104	1	100%	104	260	-56	3	51
Tug Boat (CNP221) Barging Point 2	110	1	100%	110	305	-58	3	55
Total Noise Impacts, dB(A)								70
Criterion, dB(A)								75
Exceedence, dB(A)								-

Project : EIA for Tung Chung Line Extension
Title : Preliminary Noise Assessment from Barging Point
Subtitle : Construction of Barging Point Facilities (Unmitigated) NSR : LED-06a

Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Dist dB(A)	Correction		Screen dB(A)	SPL	
							Facade dB(A)	Dist dB(A)		Daytime dB(A)	Screen dB(A)
<i>Daytime</i>											
Generator (CNP103) Barging Area	95	1	100%	95	160	-52	3	0	0	46	
Mobile Crane (CNP048) Barging Area	112	1	100%	112	160	-52	3	0	0	63	
Excavator (CNP081) Barging Area	112	1	100%	112	160	-52	3	0	0	63	
Electric Drill (CNP064) Barging Area	103	2	100%	106	160	-52	3	0	0	57	
Vibratory Poker(CNP170) Barging Area	113	2	100%	116	160	-52	3	0	0	67	
Flat-top Barge (CNP061) Barging Point 1	104	1	100%	104	200	-54	3	0	0	53	
Tug Boat (CNP221) Barging Point 1	110	1	100%	110	250	-56	3	0	0	57	
Flat-top Barge (CNP061) Barging Point 2	104	1	100%	104	235	-55	3	0	0	52	
Tug Boat (CNP221) Barging Point 2	110	1	100%	110	280	-57	3	0	0	56	
Total Noise Impacts, dB(A)										70	
Criterion, dB(A)										75	
Exceedence, dB(A)										-	

Project : EIA for Tung Chung Line Extension
Title : Preliminary Noise Assessment from Barging Point
Subtitle : Site Clearance (Unmitigated)

NSR : A54-01a

Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Correction		SPL	
						Dist dB(A)	Facade dB(A)	Screen dB(A)	Daytime dB(A)
Daytime Generator (CNP103) Barging Area Mobile Crane (CNP048) Barging Area Excavator (CNP081) Barging Area	95	1	100%	95	160	-52	3	0	46
	112	1	100%	112	160	-52	3	0	63
	112	1	100%	112	160	-52	3	0	63
Total Noise Impacts, dB(A)									66
Criterion, dB(A)									75
Exceedence, dB(A)									-

Project : EIA for Tung Chung Line Extension
 Title : Preliminary Noise Assessment from Barging Point
 Subtitle : Site Clearance (Unmitigated)

NSR : LED-06a

Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Correction		SPL Daytime dB(A)	
						Dist dB(A)	Screen dB(A)		
Daytime Generator (CNP103) Barging Area Mobile Crane (CNP048) Barging Area Excavator (CNP081) Barging Area	95	1	100%	95	160	-52	3	0	46
	112	1	100%	112	160	-52	3	0	63
	112	1	100%	112	160	-52	3	0	63
Total Noise Impacts, dB(A)								66	
Criterion, dB(A)								75	
Exceedence, dB(A)								-	

Project : EIA for Tung Chung Line Extension
Title : Preliminary Noise Assessment from Barging Point
Subtitle : Barging Point Operation (Unmitigated)

NSR : A54-01a

Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Correction		SPL Daytime dB(A)
						Dist dB(A)	Screen dB(A)	
Daytime Generator (CNP103) Barging Area	95	2	100%	98	160	-52	3	49
Dump Truck, vehicle / hr [1] Haul Road	104	1	100%	104	300	-58	3	65
Flat-top Barge (CNP061) Barging Point 1	104	2	100%	107	340	-59	3	49
Barge (CNP061) Barging Point 1	110	1	100%	110	340	-59	3	51
Tug Boat (CNP221) Barging Point 1	104	1	100%	104	260	-56	3	54
Flat-top Barge (CNP061) Barging Point 2	104	2	100%	107	305	-58	3	51
Barge (CNP061) Barging Point 2	110	1	100%	110	305	-58	3	52
Tug Boat (CNP221) Barging Point 2								55
Total Noise Impacts, dB(A)								67
Criterion, dB(A)								75
Exceedence, dB(A)								-

Note:
 [1] : See separate calculations for noise impacts from haul road

Project : EIA for Tung Chung Line Extension
Title : Preliminary Noise Assessment from Barging Point
Subtitle : Barging Point Operation (Unmitigated)

NSR : LED-06a

Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Correction		SPL Daytime dB(A)
						Dist dB(A)	Screen dB(A)	
<i>Daytime</i> Generator (CNP103) Barging Area	95	2	100%	98	130	-50	3	51
Dump Truck, vehicle / hr [1] Haul Road	104	1	100%	104	200	-54	3	62
Flat-top Barge (CNP061) Barging Point 1	104	2	100%	107	250	-56	3	53
Barge (CNP061) Barging Point 1	110	1	100%	110	250	-56	3	54
Tug Boat (CNP221) Barging Point 1	104	1	100%	104	235	-55	3	57
Flat-top Barge (CNP061) Barging Point 2	104	2	100%	107	280	-57	3	52
Barge (CNP061) Barging Point 2	110	1	100%	110	280	-57	3	53
Tug Boat (CNP221) Barging Point 2								56
Total Noise Impacts, dB(A)								65
Criterion, dB(A)								75
Exceedence, dB(A)								-

Note:
 [1] : See separate calculations for noise impacts from haul road

Project : EIA for Tung Chung Line Extension
 Title : Preliminary Noise Assessment from Barging Point
 Subtitle : Barging Point Operation (Unmitigated)

A54-01a

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			SPL Daytime dB(A)
									Dist dB(A)	Facade dB(A)	Speed dB(A)	
Dump Truck, vehicle / hr - Daytime only	II	105	132	100%	126	60	20	180	-18	3	-13	65
Noise Impacts from Haul Road, dB(A)												
65												

Note:

- I - Daytime, evening and night-time operation
- II - Daytime operation only
- III - Evening operation only

[1] : Based on BS 5228 Pt 1: 1997 D3.5.2 Method for mobile plant using a regular well defined route (haul road)
 $L_{eq} = L_w - 33 + 10 \log (Qty) - 10 \log (speed) - 10 \log (dist) + 10 \log (angle / 180) + C_{facade}$

[2] : A view angle of 180 deg has been assumed for conservative assessment

EIA for Tung Chung Line Extension
 Preliminary Noise Assessment from Barging Point
 Barging Point Operation (Unmitigated)

Project :
Title :
Subtitle :

LED-06a

Source	Period	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Speed kph	[2] Angle deg	Correction [1]			SPL Daytime dB(A)	
									Dist dB(A)	Facade dB(A)	Speed dB(A)		
Dump Truck, vehicle / hr - Daytime only	II	105	132	100%	126	130	20	180	-21	3	-13	0	62
Noise Impacts from Haul Road, dB(A)													
62													

Note:

- I - Daytime, evening and night-time operation
- II - Daytime operation only
- III - Evening operation only

[1] : Based on BS 5228 Pt 1: 1997 D3.5.2 Method for mobile plant using a regular well defined route (haul road)
 $L_{eq} = L_w - 33 + 10 \log(Qty) - 10 \log(speed) - 10 \log(dist) + 10 \log(angle/180) + C_{facade}$

[2] : A view angle of 180 deg has been assumed for conservative assessment

Project : EIA for Tung Chung Line Extension
Title : Preliminary Noise Assessment from Barging Point
Subtitle : Demolition of Barging Point Facilities (Unmitigated) NSR : A54-01a

Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Correction		SPL Daytime dB(A)
						Dist dB(A)	Screen dB(A)	
<i>Daytime</i> Generator (CNP103) Barging Area Mobile Crane (CNP048) Barging Area Excavator (CNP081) Barging Area Electric Drill (CNP064) Barging Area Tug Boat (CNP221) Barging Point 1	95	1	100%	95	160	-52	3	46
	112	1	100%	112	160	-52	3	63
	112	1	100%	112	160	-52	3	63
	103	2	100%	106	160	-52	3	57
	110	1	100%	110	340	-59	3	54
Total Noise Impacts, dB(A)								67
Criterion, dB(A)								75
Exceedence, dB(A)								-

Environmental Consultancy No. C1202 Environmental Impact Assessment Study for Tung Chung Line Extension

Project : EIA for Tung Chung Line Extension
Title : Preliminary Noise Assessment from Barging Point
Subtitle : Demolition of Barging Point Facilities (Unmitigated)

NSR : LED-06a

Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Correction		SPL Daytime dB(A)
						Dist dB(A)	Screen dB(A)	
Daytime								
Generator (CNP103) Barging Area	95	1	100%	95	160	-52	3	46
Mobile Crane (CNP048) Barging Area	112	1	100%	112	160	-52	3	63
Excavator (CNP081) Barging Area	112	1	100%	112	160	-52	3	63
Electric Drill (CNP064) Barging Area	103	2	100%	106	160	-52	3	57
Tug Boat (CNP221) Barging Point 1	110	1	100%	110	250	-56	3	57
Total Noise Impacts, dB(A)								67
Criterion, dB(A)								75
Exceedence, dB(A)								-

Project : EIA for Tung Chung Line Extension
Title : Preliminary Noise Assessment from Barging Point
Subtitle : Site Reinstatement (Unmitigated)

NSR : A54-01a

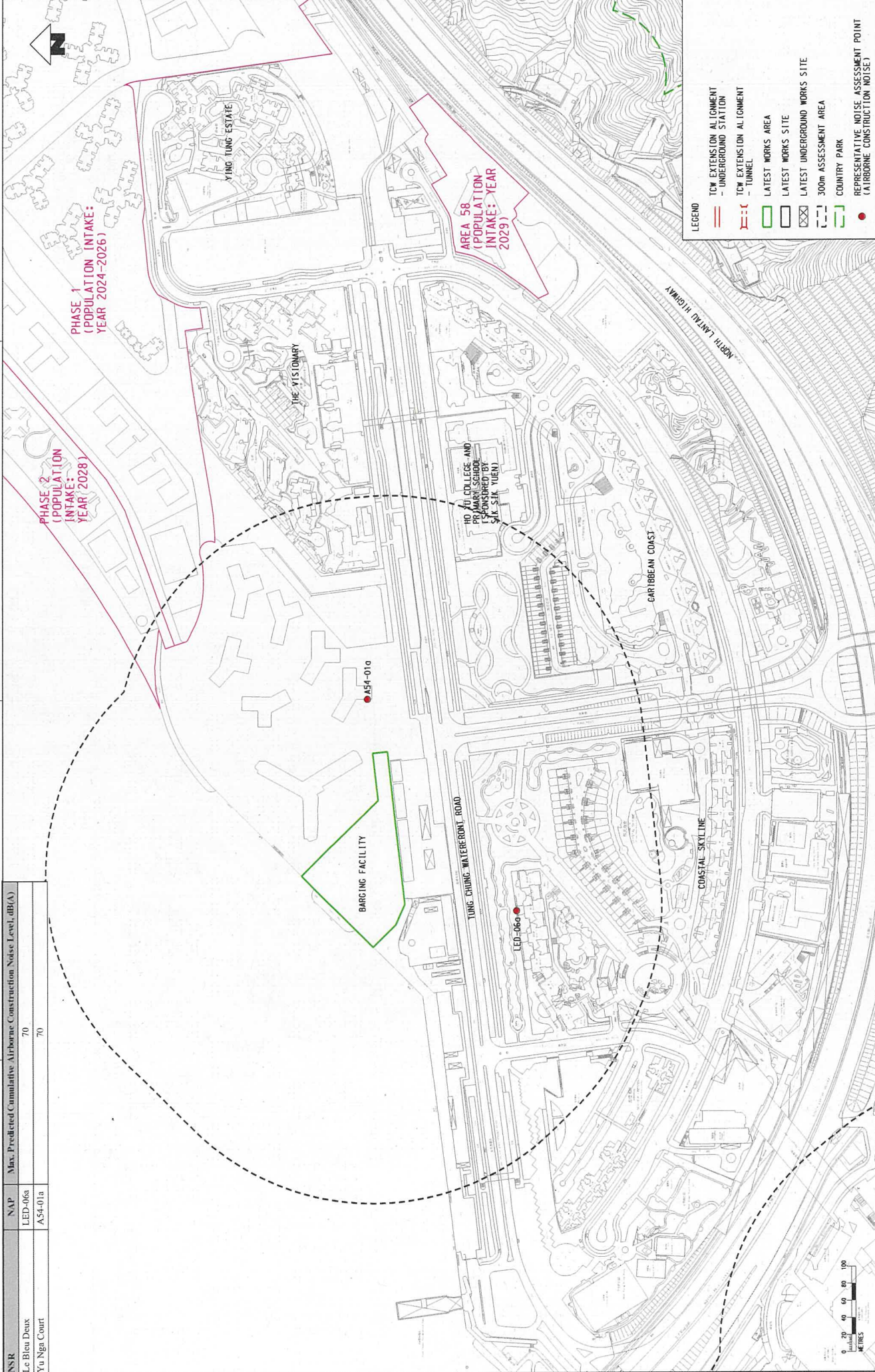
Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Correction		SPL Daytime dB(A)	
						Dist dB(A)	Facade dB(A)		Screen dB(A)
<i>Daytime</i> Generator (CNP103) Barging Area	95	1	100%	95	160	-52	3	0	46
Mobile Crane (CNP048) Barging Area	112	1	100%	112	160	-52	3	0	63
Excavator (CNP081) Barging Area	112	1	100%	112	160	-52	3	0	63
Electric Drill (CNP064) Barging Area	103	2	100%	106	160	-52	3	0	57
Total Noise Impacts, dB(A)								66	
Criterion, dB(A)								75	
Exceedence, dB(A)								-	

Project : EIA for Tung Chung Line Extension
Title : Preliminary Noise Assessment from Barging Point
Subtitle : Site Reinstatement (Unmitigated)

NSR : LED-06a

Source	SWL / Unit dB(A)	Qty Nos	% Util	Total SWL dB(A)	Dist m	Correction		SPL Daytime dB(A)
						Dist dB(A)	Screen dB(A)	
Daytime Generator (CNP103) Barging Area Mobile Crane (CNP048) Barging Area Excavator (CNP081) Barging Area Electric Drill (CNP064) Barging Area	95	1	100%	95	160	-52	3	46
	112	1	100%	112	160	-52	3	63
	112	1	100%	112	160	-52	3	63
	103	2	100%	106	160	-52	3	57
Total Noise Impacts, dB(A)								66
Criterion, dB(A)								75
Exceedence, dB(A)								-

NSR	NAP	Max. Predicted Cumulative Airborne Construction Noise Level, dB(A)
Le Bleu Deux	LED-06a	70
Yu Nga Court	A54-01a	70



REV	DATE	APPROVED	REV	DESCRIPTION
A	FIRST ISSUE			

CL	BY	DATE	APPROVED	FC
01/02/23				

DRWN	CL	DESCRIBED	EL	FC

DATE	APPROVED	FC
07/02/2023		

ORIGINATOR
C1202 - EIA for Tung Chung Line Extension

TITLE
PREDICTED NOISE LEVELS OF REPRESENTATIVE NOISE ASSESSMENT POINTS (AIRBORNE CONSTRUCTION NOISE)

SCALE	DRAWING NO.	REV.
1 : 4000 (A3)	APPENDIX 4.4.60	A

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Appendix 4.4.60.dgn

07/02/2023

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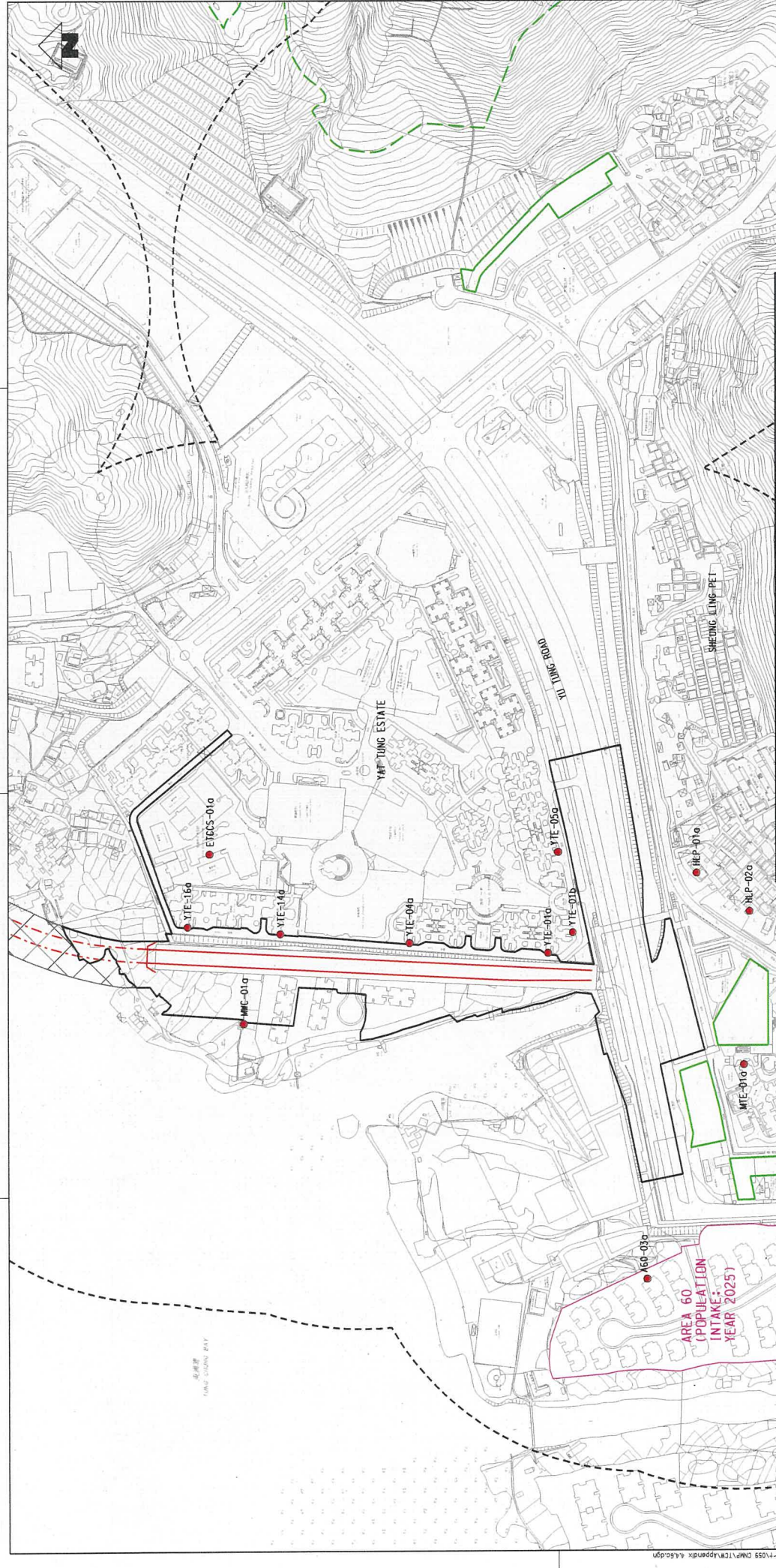
07/02/2023

C1202 - EIA for Tung Chung Line Extension

1 : 4000 (A3)

APPENDIX 4.4.60

A



LEGEND

- TCW EXTENSION ALIGNMENT - UNDERGROUND STATION
- TCW EXTENSION ALIGNMENT - TUNNEL
- LATEST WORKS AREA
- LATEST WORKS SITE
- LATEST UNDERGROUND WORKS SITE
- 300M ASSESSMENT AREA
- COUNTRY PARK
- REPRESENTATIVE NOISE ASSESSMENT POINT

NSR	NAP	Mx. Predicted Cumulative Airborne Construction Noise Level, dB(A)
Ma Wan Chung	MWC-01a	73
	YTE-01a	75
	YTE-01b	74
Yau Tung Estate	YTE-04a	74
	YTE-05a	75
	YTE-14a	73
	YTE-16a	73
Tung Chung Catholic School Primary Section	ETCCS-01a	64
Mun Tung Estate	MTE-01a	68
	HLP-01a	65
Iu Leng Pei	HLP-02a	65
Residential Premises in Tung Chung West	A60-03a	62

DRWNR	GL	DESIGNED	EL	FC

DATE: 07/02/2023

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	A		FIRST ISSUE

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Appendix 4.4.6c.dgn

SCALE: 1 : 4000 (A3)

REV: A

TITLE: C1202 - EIA for Tung Chung Line Extension

PROJECT: Predicted Noise Levels of Representative Noise Assessment Points (Airborne Construction Noise)

Appendix 3.9

Noise Mitigation Implementation Schedule

**Noise Mitigation Implementation Schedule
Tung Chung Line Extension**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase
<i>Construction Noise</i>						
S4.4.4.4	N1	<p>The following measures should be implemented:</p> <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; • plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers which available on construction equipment should be properly fitted and maintained during the construction works; • spoil transportation routes should be directed away from NSRs as far as practicable; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities; 	Control construction airborne noise	Contractor	All construction sites (Tung Chung West Station, Emergency Accessing Point/ Emergency Egress Point, Launching/ Retrieval Shaft and Barging Facility)	Construction phase

**Noise Mitigation Implementation Schedule
Tung Chung Line Extension**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase
S4.4.4.6	N2	<ul style="list-style-type: none"> noise monitoring at selected NSRs should be conducted as far as practicable; and provide designated unloading areas at barging point away from the NSR as far as possible. <p>Use of quiet plant which should be made reference to the Powered Mechanical Equipment (PME) listed in the Technical Memorandum or the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department (EPD) web pages as far as possible which includes the Sound Power Level (SWLs) for specific quiet PME (e.g. EPD-09607, EPD-10735).</p>	Reduce the noise levels from plant items	Contractor	All construction sites (Tung Chung West Station, Emergency Accessing Point/ Emergency Egress Point, Launching/ Retrieval Shaft and Barging Facility) where practicable	Construction phase
S4.4.4.7 – S4.4.4.10	N3	Install movable temporary noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m ² on a skid footing with 25mm thick internal sound absorptive lining), and full enclosure, screen the noisy plants including concrete pump etc.	Minimise the construction noise levels through screening	Contractor	All construction sites (Tung Chung West Station, Emergency Accessing Point/ Emergency Egress Point, Launching/ Retrieval Shaft and Barging Facility)	Construction phase
S4.4.4.11	N4	<p>Use of 3-side temporary movable enclosure to screen trench cutters and concrete lorry mixer near Yat Tung Estate. The design of the enclosure shall include the followings:</p> <ul style="list-style-type: none"> Gaps and openings at joints should be avoided; Enclose the equipment on three sides with cover; and Absorptive lining should be provided at the sides facing the PME as far as practicable. 	Minimise the construction noise levels through screening	Contractor	Construction of diaphragm wall near Yat Tung Estate	Construction phase

**Noise Mitigation Implementation Schedule
Tung Chung Line Extension**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Phase
S4.4.4.12	N5	<p>Installation of noise barrier along the western side of site boundary to screen noise for the village houses of Ma Wan Chung. The location of noise barrier is shown in the Figure 4.4.1 of the EIA report. The design of the noise barrier should include the followings:</p> <ul style="list-style-type: none"> • Gaps and openings at joints should be avoided; • The length of the barrier should be about 27m while the height should be about 4m; and • Surface density of the barrier no less than 7kg/m². 	Minimise the construction noise levels through screening	Contractor	Construction of TCW Station and associated above-ground structures	Construction phase
S4.4.4.4	N6	Implement an airborne construction noise monitoring under EM&A programme.	Monitor the airborne construction noise levels at the selected representative locations	Contractor	Selected noise monitoring stations ^[1]	Construction phase

Note:

[1] Refer to Figure 5.1 of EM&A Manual of the approved EIA for Tung Chung Line Extension (AEIAR-235/2022).