MTR Corporation Limited

Shatin to Central Link –
Hung Hom to Admiralty Section

Construction Noise Mitigation Measures Plan
(CNMMP)

(October 2019)

Verified by: Fredrick Leong

Position: Independent Environmental Checker

Date: 24.10.2019

MTR Corporation Limited

Shatin to Central Link –
Hung Hom to Admiralty Section

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(CNMMP)

(October 2019)

Verified by: Lisa Poon

Position: Environmental Team Leader

Date: 24. 10. 2019

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1 INTRODUCTION

1.1 Background

1.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai to Hung Hom via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH) and Stabling Sidings at Hung Hom Freight Yard (HHS); and (ii) The North-South Corridor which is an extension of the East Rail Line (EAL) at Hung Hom across the harbour to Admiralty Station (ADM).

1.1.2 Shatin to Central Link – Hung Hom to Admiralty Section [SCL (HUH – ADM)] (hereafter referred to as "the Project") is part of the SCL.

1.1.3 The Environmental Impact Assessment (EIA) Reports for SCL (HUH-ADM) (Register No.: AEIAR-166/2012) was approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an Environmental Permit (EP) (EP No.: EP-436/2012) was granted on 22 March 2012 for construction and operation. Variations of environmental permit (VEP) was subsequently applied for EP-436/2012 and the latest Environmental Permit (EP No: EP-436/2012/F) was issued by Director of Environmental Protection (DEP) on 23 January 2019.

1.1.4 As per Condition 2.7 of EP-436/2012/F, Construction Noise Mitigation Measures Plan (CNMMP) for the Project is required to be updated and submitted to EPD before commencement of the construction of the Project.

1.2 Purpose of this Construction Noise Mitigation Measures Plan

1.2.1 This CNMMP is submitted to fulfil the requirements under Condition 2.7 of EP-436/2012/F pertaining to further reduce the air-borne construction noise impacts on the noise sensitive receives (NSR) as predicted in the EIA Report (i.e. Causeway Centre, Block A) with exceedance after mitigation as predicted in the approved SCL (HUH-ADM) EIA Report.

1.2.2 To fulfil the requirements of above-mentioned EP Conditions, the following information has been included in the CNMMP for individual Contracts as prepared by the respective Contractors:

- Schedule of construction works to be carried out at the works areas of the Project within 300m from the NSR;
- Updated construction methodology of the construction works;
- Updated powered mechanical equipment (PME) list for the construction works;
- Updated proposal of air-borne construction mitigation measures for the NSR, including the provision of noise barriers and enclosures, if applicable; and
- Updated prediction of noise levels in accordance with the above updated information and mitigation proposals in place.

2 CONSTRUCTION NOISE MITIGATION MEASURES PLAN

2.1.1 The construction of SCL has been divided into different civil construction works contracts. The works area of SCL Works Contracts as listed in table below would be located within 300m from the NSR as mentioned in EP-436/2012/F Condition 2.7 (i.e. Causeway Centre, Block A). As such, updated CNMMP would be required to be prepared under these Works Contracts as per EP Condition.

Works Contract	Contract Title
1123	Exhibition Station and Western Approach Tunnel
1126	Reprovisioning of Harbour Road Sports Center and Wan Chai Swimming Pool

2.1.2 The updated CNMMP for Works Contract 1126 and 1123 have been prepared by the respective Contractor's ET based on updated construction methodology, powered mechanical equipment (PME) and construction programme, and is provided in **Appendix A** and **Appendix B**. **Table 2.1** summarises a comparison of the mitigated air-borne noise levels at the NSR mentioned in Condition 2.7 of EP-436/2012/F predicted in the updated CNMMP for individual Contracts with those predicted in the approved SCL (HUH-ADM) EIA Report.

2.1.3 According to the updated CNMMP, the noise mitigation measure proposed in the approved SCL (HUH-ADM) EIA Report remains valid. With the updated information, the mitigated air-borne construction noise impacts predicted in the CNMMP would be reduced, in terms of exceedance and duration, compared to those in the approved EIA Report.

Table 2.1 Summary of Updated Mitigation Air-borne Construction Noise Impact

				Air-borne Construction Noise Impact (Mitigated)			
				Updated CNMMP		SCL (HUH-ADM) EIA Report	
NSR ID	Description	Uses	Criteria / dB(A)	Predicted Max Noise Level / dB(A)	Exceedance Duration / Month	Predicted Max Noise Level / dB(A)	Exceedance Duration / Month
					1-4 dB(A)		1-4 dB(A)
Contract No. 1126 & 1123							
EX1	Causeway Centre, Block A	Residential	75	75	-	76	2

Appendix A

Construction Noise Mitigation Measures Plan for Contract No. 1126 – Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool

Kaden-Leader Joint Venture

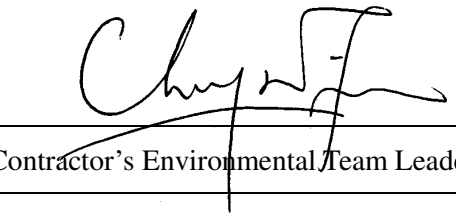
Shatin to Central Link –

Contract 1126
Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool

Construction Noise Mitigation Measures Plan

(Version 3.0)

March 2014

Approved By 

(Contractor's Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

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1 INTRODUCTION

Background

1.1 The Shatin to Central Link – Hung Hom to Admiralty Section (hereafter referred to as SCL (HUH-ADM)) is an approximately 6km extension of the East Rail Line including a rail harbor crossing from Hung Hom across the harbor to Admiralty on Hong Kong Island. It is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO).

1.2 The Environmental Impact Assessment (EIA) Report of the SCL (HUH-ADM) (Register No. AEIAR-166/2012) was approved by the Environmental Protection Department (EPD) under the EIAO on 17 February 2012. An Environmental Permit (EP-436/2012) has been issued on 22 March 2012.

1.3 The construction of the SCL (HUH-ADM) has been divided into a series of civil construction Works Contracts and this Works Contract 1126 comprises of the Demolition Works of Wan Chai Sports Ground (WCSG). This construction contract was awarded to Kaden-Leader Joint Venture (KLJV) in January 2014.

Purpose of this Construction Noise Mitigation Measures Plan

1.4 According to Condition 2.7 of the EP-436/2012, to further reduce the air-borne construction noise impacts on the Noise Sensitive Receivers (NSRs) with exceedance after mitigation as predicted in the SCL (HUH-ADM) EIA Report (Register No. AEIAR-166/2012), (i.e. Causeway Centre, Block A), the Permit Holder shall, no later than one month before the commencement of construction of the Project, submit to the Director of Environmental Protection (DEP) for approval four hard copies and one electronic copy of an updated Construction Noise Mitigation Measures Plan (CNMMP) and other initiatives proposed by the Permit Holder. The CNMMP shall include:

- a schedule of construction works to be carried out at the works areas of the Project within 300m from the NSRs;
- an updated construction methodology of the proposed construction works;
- an updated powered mechanical equipment (PME) list for the proposed construction works;
- an updated proposal of air–borne noise mitigation measures for the NSR, including the provision of noise barriers, enclosures, if applicable; and
- an updated prediction of noise levels in accordance with the above updated information and mitigation proposals in place.

1.5 Before submission to the DEP, the CNMMP will be certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC) as conforming to the relevant information and recommendations contained in the approved SCL (HUH-ADM) EIA Report (Register No. AEIAR-166/2012). All measures recommended in the approved CNMMP will be fully and properly implemented during construction.

1.6 The identified NSR with exceedance after mitigation as predicted in the EIA Report, (i.e. Causeway Centre, Block A), is relevant to Works Contract 1126. The location of

this NSR covered in this CNMMP is shown in **Appendix C**.

1.7 This CNMMP is prepared to comply with the above-mentioned requirements.

2 DESCRIPTION OF CONSTRUCTION WORKS IN THE STUDY AREA

Noise Sensitive Receivers

2.1 The predicted residual construction noise impact of the identified NSR is shown in **Table 2.1**. The location of this NSR, the layout plan of Works Contract 1126 worksites and the notional distance to the relevant works areas within the 300m study area are shown in **Appendix C**.

Table 2.1 NSRs with Predicted Residual Air-borne Construction Noise Impacts (Extracted from Table 9.20 of the SCL (HUH-ADM) EIA Report)

NSR ID	NSR Description	Uses[1]	Criterion dB(A)	Predicted Maximum Noise Level dB(A)	Predicted Residual Noise Impact dB(A)
EX1	Causeway Centre, Block A	R	75	76	1

Notes:
[1] R – Residential

Construction Methodology

2.2 The proposed construction methodology would generally follow those presented in Section 3 of the approved SCL (HUH-ADM) EIA Report. During construction of EXH, a portion of the grandstand at Wan Chai Sports Ground will be affected. Temporary reprovisioning of the grandstand and other facilities will be required during the construction period and possible full reinstatement subsequent to completion of railway development works.

2.3 A breakdown of the major construction activities in sequence to be carried out under the contract are provided in **Appendix A**.

Updated Preliminary Construction Programme

2.4 The updated preliminary construction programme prepared by KLJV has been used in this CNMMP and has been presented on a monthly basis for the duration of the construction works in corresponding worksites. The construction schedule has been updated based on the latest information submitted under the SCL(HUH-ADM) EP and adjusted such that to minimise concurrent construction works to be carried out in the vicinity as far as practicable. The updated preliminary construction programme for Works Contract 1126 is provided in **Appendix A**.

Updated Powered Mechanical Equipment List

2.5 The updated Powered Mechanical Equipment (PME) list for the construction works is provided in **Table 3.1**. The Sound Power Levels (SWL) for the PMEs have been adopted from EPD's Technical Memorandum on Noise from Construction Work Other than Percussive Piling (GW-TM), list of SWLs of other commonly used PME(1) or

British Standard BS 5228–1:2009(2). It should be noted that the PMEs proposed are commonly available in the Hong Kong market. The PMEs to be adopted for individual construction activities for Works Contract 1126 are provided in **Appendix B**.

(1) "Sound power levels of other commonly used PME" prepared by the Noise Control Authority (http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)
(2) British Standard BS 5228:2009, Part 1 - Noise and Vibration Control on Construction and Open Sites

3 NOISE ASSESSMENT AND PROPOSED MITIGATION MEASURES

Assessment Methodology and Assumptions

3.1 The construction noise assessment has been carried out in accordance with the methodology used in the approved SCL (HUH-ADM) EIA Report (Register No. AEIAR-166/2012). Demarcation of the sub-works areas and notional source distances adopted in the calculations mainly follows those presented in the SCL(HUH-ADM) EIA Report and updated based on latest engineering information, which are presented in **Appendix C**.

3.2 The percentage on-time for each PME has been estimated individually for each construction activity to ensure practicality.

3.3 KLJV has confirmed that both programme and plant inventory in approved EIA for SCL (HUH-ADM) are reasonable and practicable for completing the Works Contract 1126 within the scheduled timeframe.

3.4 Mitigation measures and their effectiveness proposed in the SCL (HUH-ADM) EIA Report including the use of temporary movable noise barrier and quiet plant have been considered in this CNMMP, as shown in **Table 3.1**. Details of proposed mitigation measures for this Project are presented in **Appendix B**.

Table 3.1 PME List with Proposed Mitigation Measures Adopted under Works Contract 1126 for Works at WCSG

PME	TM Ref. /Other Ref.(1) /BS5228 Ref.(2)	SWL/ Item, dB(A)	Mitigation Measures Proposed (3)	Barrier Correction, dB(A) (3)
Air Compressor	CNP002	102	Movable Barrier	-10
Asphalt paver	BS D8/24	101	Movable Barrier	-5
Breaker, hand-held, mass > 35 kg	CNP026	114	Movable Barrier	-5
Concrete Lorry Mixer	BS D6/33	96	/	0
Crane Mobile	BS D7/101	94	/	0
Drill, percussive, hand-held	CNP064	103	/	0
Dump Truck	BS D9/24	104	/	0
Excavator	BS D3/35	106	Movable Barrier	-5
Lorry	BS D9/19	102	/	0
Poker, Vibratory, Hand Held	BS D6/40	98	/	0
Roller, vibratory	BS D8/30	101	/	0
Saw, Concrete	CNP203	115	Movable Barrier	-10

(1) "Sound power levels of other commonly used PME" prepared by the Noise Control Authority (http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)
(2) British Standard BS 5228:2009, Part 1 - Noise and Vibration Control on Construction and Open Sites
(3) Table 9.17 - Noise Mitigation Measures for Certain PME during Construction Phase and Appendix 9.8, approved EIA for SCL (HUH-ADM).

Proposed Mitigation Strategy and Noise Assessment Results

3.5 The air-borne construction noise impacts for the construction activities under Works Contract 1126 have been assessed and summarized in **Table 3.2**. The detailed assessment result for Works Contract 1126 is presented in **Appendix B**. The proposed mitigation measures described above are included in the assessment and, as such, only the mitigated scenario has been presented.

3.6 With the implementation of quiet plant, temporary movable noise barrier for the PMEs, and scheduling of PMEs at worksite as far as possible, no exceedances of noise criteria at the identified NSR is predicted. Residual impact is therefore not expected to be anticipated.

Table 3.2 Updated Mitigated Construction Noise Impact at Identified NSR

NSR	Noise Criteria dB(A)	SCL (HUH-ADM) EIA Prediction[1]		CNMMP Prediction[2]	
		Max Noise Level, dB(A)	Exceedance Duration (Month)	Max Noise Level, dB(A)	Exceedance Duration (Month)
EX1	75	76	2	75	0

Notes:

(1) Extracted from Table 9.21 of SCL (HUH-ADM) EIA – Cumulative Residual Construction Noise Impact

(2) Cumulative impact arisen from other projects including WDII and CWB is considered.

4 CONCLUSION

4.1 With the implementation of the proposed noise mitigation measures, updated construction programme and PME list, construction noise impacts at the identified NSR would comply with the noise criterion of 75 dB(A) for residential premise..

4.2 Where necessary, further review and update will be performed during the construction phase and liaison with affected parties is recommended to minimise the construction noise impacts as far as practicable.

APPENDIX A
UPDATED PRELIMINARY CONSTRUCTION PROGRAMME OF WORKS CONTRACT 1126

Appendix A :SCL Contract 1126 - Preliminary Construction Programme

No.	Activity Description	2014												2015												2016												2017											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	Daytime Period																																															
	Work site 204a																																															
1	Hoarding Erection at Wan Chai Sports Ground				X	X																																									
2	Demolition of grandstand							X	X	X	X																																				
	Work site 204b																																														
3	Temporary Reprovisioning Works at Wan Chai Sports Ground						X	X	X	X																																					
	Work site 208																																														
4	Temporary PTI Construction								X	X	X	X	X																																		

Remark:

X - indicates construction works in progress

APPENDIX B
PROPOSED MITIGATION MEASURES AND DETAILED NOISE ASSESSMENT

Appendix B1 : SCL Contract 1126
Construction Plant Inventory (With Mitigation)

Work site 204a

No.	Activities	Name of PME (TM Ref./Other Ref.[1])	No. of PME	On Time %	SWL/ Item, dB(A)	SWL, dB(A)	Mitigation Measures Proposed [3]	Barrier correction [3]	Total SWL, dB(A) [2]
1	Hoarding Erection at Wan Chai Sports Ground	Breaker, hand-held, mass > 35 kg (CNP 026)	1	30	114	109	Movable Barrier	-5	**106**
		Crane lorry, mobile (BS D7/101)	1	50	94	91	/	0	
		Drump truck (BS D9/24)	1	30	104	99	/	0	
		Poker, vibrator, hand-held (BS D6/40)	2	30	98	96	/	0	
		Air Compressor (CNP 002)	1	30	102	97	Movable Barrier	-10	
		Concrete lorry mixer (BS D6/33)	1	30	96	91	/	0	
		Lorry (BS D9/19)	1	30	102	97	/	0	
2	Demolition of grandstand	Saw, concrete (CNP 203)	2	50	115	115	Movable Barrier	-10	**107**
		Excavator (BS D3/35)	1	50	106	103	Movable Barrier	-5	
		Dump Truck (BS D9/24)	1	30	104	99	/	0	

Work site 204b

No.	Activities	Name of PME (TM Ref./Other Ref.[1])	No. of PME	On Time %	SWL/ Item, dB(A)	SWL, dB(A)	Mitigation Measures Proposed	Barrier correction [3]	Total SWL, dB(A) [2]
3	Temporary Reprovisioning Works at Wan Chai Sports Ground	Drill, percussive, hand-held (CNP 064)	1	50	103	100	/	0	**103**
		Excavator (BS D3/35)	1	50	106	103	Movable Barrier	-5	
		Crane lorry, mobile (BS D7/101)	1	50	94	91	/	0	
		Lorry (BS D9/19)	1	30	102	97	/	0	

Note:
[1] BS - British Standard BS 5228:2009, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/)

[2] The figures are rounded-up to a whole number.

[3] With reference to the approved SCL(HUH-ADM) EIA Report (Register No. AEIAR-166/2012)

Appendix B1 : SCL Contract 1126
Construction Plant Inventory (With Mitigation)

Work site 208

No.	Activities	Name of PME (TM Ref./Other Ref.[1])	No. of PME	On Time %	SWL/ Item, dB(A)	SWL, dB(A)	Mitigation Measures Proposed [3]	Barrier correction [3]	Total SWL, dB(A) [2]
4	Temporary PTI Construction	Asphalt paver (BS D8/24)	1	60	101	99	Movable Barrier	-5	**101**
		Roller, vibratory (BS D8/30)	1	80	101	100	/	0	

Note:
[1] BS - British Standard BS 5228:2009, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/)

[2] The figures are rounded-up to a whole number.

[3] With reference to the approved SCL(HUH-ADM) EIA Report (Register No. AEIAR-166/2012)

Appendix B2 :Noise Contribution from Works Contract 1126

Table B2.1 - Noise Contribution from Works Contract 1126

No.	Activity Description	2014												2015												2016												2017											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	Daytime Period																																															
	Work site 204a																																															
1	Hoarding Erection at Wan Chai Sports Ground				106	106																																									
2	Demolition of grandstand							107	107	107	107																																					
	Total SWL from Work site 204a				106	106		107	107	107	107																																				
	Work site 204b																																															
3	Temporary Reprovisioning Works at Wan Chai Sports Ground						103	103	103	103																																						
	Total SWL from Work site 204b						103	103	103	103																																						
	Work site 208																																															
4	Temporary PTI Construction								101	101	101	101	101																																		
	Total SWL from Work site 208								101	101	101	101	101																																		

Remark:

X - indicates construction works in progress

X - indicates construction works in progress but not considered in the noise assessment

[1] - Noise source at more than 300 m from the sensitive receiver (Causeway Centre, Block A) are not considered in this noise assessment due to large distance attenuation effect.

Appendix B3 :Noise Contribution from Concurrent Contracts

Table B3.1 - Noise Contribution from Concurrent SCL Contract 1123

Activity Description	2014												2015												2016												2017											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Daytime Period																																															
Work site 201																																															
Site Hoarding Erection																																109																
Diaphragm Wall Construction																																	107	107	107	107	107											
Roof Slab Construction																																						105	105	105								
Total SWL from Work site 201																																109	107	107	107	107	107	105	105								
Work site 202																																						\									
Diaphragm Wall Construction													107	107	107	107	107	107	107																											
Roof Slab Construction																				105	105	105	105	105	105	105	105	105	105	105	105																	
Excavation																													115	115	115	115	115	115	115	115											
Construction of Internal Structures of Box Station																																					115	115	115	115	115						
Construction of Entrance and Vent Shafts																																								106	106	106	106					
Construction of Station Box Roof Slab																																										105	105	105	105			
Total SWL from Work site 202													107	107	107	107	107	107	107	105	105	105	105	105	105	105	105	105	105	115	115	115	115	115	115	115	115	115	115	116	116	109	109	105	105			
Work site 203																																															
Diaphragm Wall Construction																																					107	107	107	107								
Excavation																																								115	115	115	115	115				
Construction of Internal Structures of Box Station																																												115	115	115	
Construction of Station Box Roof Slab																																														105	
Construction of Entrance and Vent Shafts																																														
Backfilling and Reinstatement																																														
Total SWL from Work site 203																																					107	107	107	107	115	115	115	115	115	115	115	115
Work site 204a																																															
Diaphragm Wall Construction														102	102	102	102	102	102	102																											
King Post Construction																				108	108	108																											
Excavation																							113	113	113	113	113																						
Total SWL from Work site 204a														102	102	102	102	102	102	102	108	108	113	113	113	113	113																					
Work site 211																																															
Spoil Removal													111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111									
Total SWL from Work site 211													111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111									

Table B3.2 - Noise Contribution from Concurrent Works

Activity Description	2014												2015												2016												2017											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Daytime Period																																															
Work site 203																																															
Demolition of Harbour Road Sports Centre																							112	112	112																							
Installing Hoarding																																104																
Pile Removal																																					116	116										
Total SWL from Work site 203																							112	112								104					116	116										
Work site 205a																																															
ELS Works and Substructure for Wan Chai Swimming Pool		109	109	109	109	109																																								
Superstructure for Wan Chai Swimming Pool					104	104	104	104	104	104	104	104	104	104	104	104																															
Total SWL from Work site 205a		109	109	109	110	110	104	104	104	104	104	104	104	104	104	104																															
Work site 205b																																															
Site Hoarding Erection for Harbour Road Sports Centre																				106																												
Demolition of Wan Chai Swimming Pool and filtration plant room																					107	107	107	107																							
Piling works for Harbour Road Sports Centre																							109	109	109	109	109	109	109	109	109																
Superstructure for Harbour Road Sports Centre																													102	102	102	102	102	102	102	102	102	102								
Total SWL from Work site 205b																				106	107	107	107	111	109	109	109	109	109	110	110	102	102	102	102	102	102	102								

Remark:

X - indicates construction works in progress

Appendix B4 : Accumulated Noise Contribution from each Worksite from Works Contract 1126 + Contract 1123

Table B4.1 - Accumlated Noise Contribution from each Worksite from Works Contract 1126 + Contract 1123 + Concurrent Works

Works Area/Total SWL (dB(A))	2014												2015												2016												2017											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Worksite 201	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109	107	107	107	107	107	105	105	105	0	0	0	0	0	0	0	0
Worksite 202	0	0	0	0	0	0	0	0	0	0	0	0	107	107	107	107	107	107	107	105	105	105	105	105	105	105	105	105	115	115	115	115	115	115	115	115	115	115	115	116	116	109	109	105	105	0	0	0
Worksite 203	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112	112	0	0	0	0	0	0	104	0	0	0	0	117	117	107	107	115	115	115	115	115	115	115	115
Worksite 204a	0	0	0	106	106	0	107	107	107	107	0	0	0	102	102	102	102	102	102	102	108	108	108	113	113	113	113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Worksite 204b	0	0	0	0	0	103	103	103	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Worksite 205a	0	109	109	109	110	110	104	104	104	104	104	104	104	104	104	104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Worksite 205b	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	106	107	107	107	111	109	109	109	109	109	110	110	102	102	102	102	102	102	102	0	0	0	0	0	0	0	0	0	0
Worksite 208	0	0	0	0	0	0	0	101	101	101	101	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Worksite 211	0	0	0	0	0	0	0	0	0	0	0	0	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	0	0	0	0	0	0	0	0	0	0

Appendix B5 :Accumulated Noise Level on NSR

Table B5.1 Accumulated Noise Levels from Construction of Contract 1126 + Contract 1123 + Concurrent Works + WDII/CWB

NSR ID	NSR Description	Distance, m	Corr. for Distance, dB (A)	Facade Correction, dB(A)	Total Correction, dB(A)	2014												2015												2016												2017												Max. CNL, dB(A)
						1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
EX 1	**Causeway Centre, block A**																																																			
	Worksite 201	249	-55.9	3	-52.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	54	54	54	54	54	52	52	52	0	0	0	0	0	0	0	0	
	Worksite 202	126	-50.0	3	-47.0	0	0	0	0	0	0	0	0	0	0	0	0	60	60	60	60	60	60	58	58	58	58	58	58	58	58	58	68	68	68	68	68	68	68	68	68	68	68	69	69	62	62	58	58	0	0	0	
	Worksite 203	97	-47.7	3	-44.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	67	0	0	0	0	0	59	0	0	0	0	72	72	62	62	70	70	70	70	70	70	71		
	Worksite 204a	127	-50.1	3	-47.1	0	0	0	59	59	0	60	60	60	60	0	0	0	55	55	55	55	55	55	55	61	61	61	66	66	66	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Worksite 204b	202	-54.1	3	-51.1	0	0	0	0	0	52	52	52	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Worksite 205a	54	-42.6	3	-39.6	0	69	69	69	71	71	64	64	64	64	64	64	64	64	64	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Worksite 205b	77	-45.7	3	-42.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	64	64	64	68	66	66	66	66	66	67	67	59	59	59	59	59	59	59	0	0	0	0	0	0	0	0	0	0	
	Worksite 208	257	-56.2	3	-53.2	0	0	0	0	0	0	0	48	48	48	48	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Worksite 211	270	-56.6	3	-53.6	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	
	Works Area under WDII/CWB [1]					67	72	73	73	73	73	73	68	66	66	65	65	65	65	69	69	67	67	67	67	67	72	72	71	71	71	71	71	71	71	71	71	65	65	0	0	0	0	0	0	0	0	0	0	0	0	
	Predicted Noise Level at NSR (dB(A))					**67**	**74**	**75**	**75**	**75**	**75**	**74**	**70**	**69**	**69**	**68**	**68**	**69**	**69**	**71**	**71**	**68**	**68**	**68**	**69**	**70**	**73**	**73**	**75**	**74**	**73**	**73**	**73**	**74**	**74**	**74**	**73**	**73**	**70**	**70**	**69**	**74**	**74**	**69**	**70**	**73**	**71**	**71**	**71**	**71**	**70**	**70**	**71**	**75**

Note 1: Figure extracted from Appendix 9.11 of EIA Report (HUH-ADM)

Appendix B6 :Summary of Predicted Cumulative Noise Levels from Construction at NSR

Table B6.1 Predicted Cumulative Noise Levels from Construction of Contract 1126 + Contract 1123 + WDII/CWB

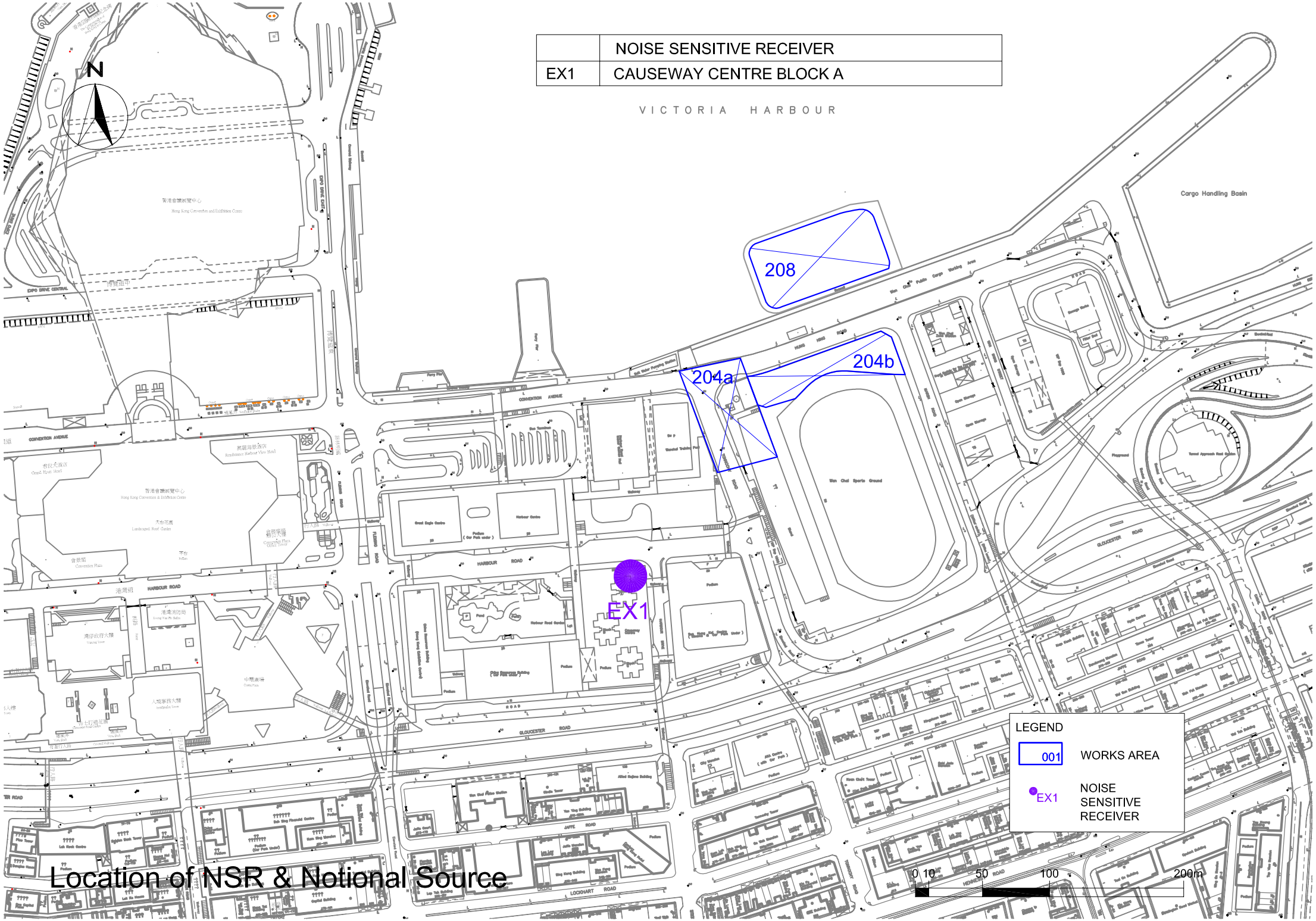
NSR Location [NSR ID]	EIAO-TM Noise Criteria, dB (A)	2014												2015												2016												2017											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Causeway Centre, block A [EX1]	75	67	74	75	75	75	75	74	70	69	69	68	68	69	69	71	71	68	68	68	69	70	73	73	75	74	73	73	73	74	74	74	73	73	70	70	69	74	74	69	70	73	71	71	71	71	70	70	71

APPENDIX C
LOCATION PLAN OF WORKSITES OF WORKS CONTRACT 1126 AND NOTIONAL DISTANCE FROM WORKS AREAS OF NSR EX1

Appendix C – Notional Distance from Works Areas of NSR

Notional Distance from Construction Sites to NSRs (in meter)

NSR/Work Site	SCL Works Contract 1126		
	204a	204b	208
Causeway Centre, Block A [EX1]	127	202	257



Location of NSR & Notional Source

Appendix B

Construction Noise Mitigation Measures Plan for Contract No. 1123 – Exhibition Station and Western Approach Tunnel

MTR Corporation Limited

Shatin to Central Link –
Hung Hom to Admiralty Section

Construction Noise Mitigation Measures Plan
(CNMMP)

(June 2018)

Verified by: Y W Fung

Position: Environmental Team Leader

Date: 1 June 2018

AECOM

Leighton – China State Joint Venture

Shatin to Central Link
Works Contract 1123
Exhibition Station and Western Approach Tunnel

Construction Noise Mitigation Measures Plan

June 2018

	Name	Signature
Prepared & Checked:	Joanne Tsoi	
Reviewed & Approved:	Y W Fung	

Version: F Date: 1 June 2018

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1 INTRODUCTION

1.1 Project Description

1.1.1 Shatin to Central (SCL) is 17 km of new urban railway line that stretches from Tai Wai to Admiralty, connecting several existing railway lines and passing through multiple districts in Hong Kong.

1.1.2 The Environmental Impact Assessment (EIA) Report for SCL – Hung Hom to Admiralty Section [SCL (HUH-ADM)] (Register No.: AEIAR-166/2012) was approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an Environmental Permit (EP) was granted on 22 March 2012 (EP No.: EP-436/2012) for the construction and operation. Variation of EP (VEP) (VEP-490/2016) was applied on 13 January 2016, and the latest EP (EP-436/2012/E) was issued by the Director of Environmental Protection (DEP) on 26 November 2016.

1.1.3 The construction of the SCL had been divided into different civil construction works contracts. Works Contract 1123 involves the construction of an underground station (Exhibition Station) and 300 m of cut and cover tunnel (Western Approach Tunnel) along Convention Avenue (hereafter referred to as "the Project"). This Works Contract was awarded to Leighton – China State Joint Venture (the Contractor).

1.1.4 As per EP Condition 2.7, a Construction Noise Mitigation Measures Plan (CNMMP) is required before the commencement of the Project.

1.2 Purpose of this Construction Noise Mitigation Plan

1.2.1 Condition 2.7 of EP No.: EP-436/2012/E for SCL(HUH-ADM) stipulated that to further reduce the air-borne construction noise impacts on the noise sensitive receiver (NSR) (i.e. Causeway Centre, Block A) with exceedance after mitigation as predicted in the approved SCL(HUH-ADM) EIA Report, the Permit Holder shall, no later than one month before the commencement of construction of the Project, submit to the Director for approval an updated CNMMP and other initiatives proposed by the Permit Holder. The plan shall include:

(a) a schedule of construction works to be carried out at the works areas of the Project within 300 m from the NSR;

(b) an updated construction methodology of the construction works;

(c) an updated powered mechanical equipment (PME) list for the construction works;

(d) an updated proposal of air-borne construction noise mitigation measures for the NSR, including the provision of noise barriers and enclosures, if applicable; and

(e) an updated prediction of noise levels in accordance with the above updated information and mitigation proposals in place.

1.2.2 AECOM Asia Co. Ltd. was commissioned by the Contractor, Leighton – China State Joint Venture, to prepare the CNMMP for the Project.

1.2.3 Works area of the Project and location of the NSR are shown in **Figure 1**.

2 CONSTRUCTION WORKS OF THE PROJECT

2.1 Construction Methodology

2.1.1 The proposed construction methodology for the Project generally follows those presented in the approved SCL (HUH-ADM) EIA Report and the Supporting Document for Application of Variation of Environmental Permit for Works Contract 1123 – EXH and Western Approach Tunnel Blasting Study for Zone 2 (Final) dated 1 Nov 2016 (the Supporting Document) as described below. **Table 2.1** summarises the major construction tasks and construction methods to be carried out under Works Contract 1123.

2.1.2 Exhibition Station (EXH) is proposed to be located within a site currently occupied by the Harbour Road Sports Centre and Wan Chai Swimming Pool (IGH/TP). The reprovisioning of the IGH/TP will be undertaken in sequence so that existing operations at IGH/TP will continue until the new IGH/TP is provided. Based on the EIA Report, cut and cover (C&C) construction sequences are proposed for the station which is expected to involve a repeated procedure of dewatering, excavation and strut installation until the final excavation level is reached. Temporary king posts will be cut off once the station structures are completed. By adopting this method, the G/F top slab of station where constructed first would act as a temporary shield/barrier to minimise construction noise and dust impacting on the surrounding environment during construction of the basement floors. Due to the constraints imposed by the existing structures above Zone 2 including Harbour Road Sports Centre ground investigation could not be conducted until all those buildings are demolished. Hence, the rock profile of Zone 2 is highly uncertain. Drill-and-blast combined with mechanical excavation was proposed at Zone 2 in the Supporting Document as an alternative construction method to C&C method in order to allow for more flexibilities for the construction team to streamline the construction programme. The proposed drill-and-blast combined with mechanical excavation involve two main types of construction activities, namely mechanical excavation and drill-and-blast. For the mechanical excavation part, the construction works involved would be the same as C&C method. The exact construction method, either C&C or drill-and-blast combined with mechanical excavation, to be adopted at Zone 2 would be subject to various considerations, including but not limited to site conditions in the future, etc. The construction noise levels for both options were considered in this CNMMP.

2.1.3 During construction of EXH, a portion of the grandstand at Wan Chai Sports Ground and other associated foot bridges will be affected. Temporary reprovisioning of the grandstand and other facilities will be required during the construction period and possible full reinstatement subsequent to completion of railway development works.

Table 2.1 Summary of Construction Tasks and Construction Method for the Works

Item	Construction Task	Construction Method	
		Approved EIA	Contract 1123
1	Construction of the underground EXH within the works area except Zone 2	C&C method	C&C method
2	Construction of the underground EXH at Zone 2	C&C method	Option 1: C&C method Option 2: Drill-and-blast combined with mechanical excavation
3	Construction of the Western Approach Tunnel (WAT) along Convention Avenue	C&C method	C&C method

2.2 Construction Programme

2.2.1 The construction works commenced in the second quarter of 2015 and are expected to complete in 2020. For the works at Zone 2, according to the Supporting Document, it is anticipated that the construction period for drill-and-blast combined with mechanical excavation

would be approximately 4-5 weeks less than the C&C method. Updated construction programmes for the Project prepared by Leighton – China State Joint Venture for both options are shown in **Appendices A1 and A2**. The construction programmes present the construction activities to be undertaken and the tentative timeframe for each construction activity in corresponding worksites.

2.3 Plant Inventory

2.3.1 As recommended in the approved EIA Reports, quiet Powered Mechanical Equipment (PME) should be adopted for the construction works to minimise the noise impact on the NSR. Based on the EIA Reports, a list of quiet Powered Mechanical Equipment (PME) to be adopted for the construction works of the Project are shown in **Table 3.3**.

2.3.2 According to the Supporting Document, and confirmed with the Construction Team and the engineer of the MTRCL, the plant inventory for construction activity in Zone 2 associated with the proposed drill-and-blast works combined with mechanical excavation would be similar to the C&C method. For at-grade construction activities, the type, number and percentage of operation time of PME would be the same for both methods. For the underground construction activities, the type of PME to be utilized would be the same for both methods. The number of rock drills required for C&C method would be 2 with on-time percentage of 50%, while for drill-and-blast works combined with mechanical excavation, the number of rock drills required would be 3 with on-time percentage of 60%. The number of breakers required for both methods would be the same, but the on-time percentage required would be 50% for C&C method and 30% for drill-and-blast works combined with mechanical excavation. For ventilation fans, the number required for both methods would be the same, but the on-time percentage required would be 50% for C&C method and 75% for drill-and-blast works combined with mechanical excavation. The comparison of the plant inventory for C&C method and drill-and-blast works combined with mechanical excavation at Zone 2 is summarized in **Table 2.2**.

Table 2.2 Comparison of Construction Plant Inventory Of (1) C&C Method, and (2) Drill-and-Blast Works Combined with Mechanical Excavation for Zone 2

PME	(1) C&C Method		(2) Drill-and-Blast Works Combined with Mechanical Excavation	
	No. of Items	On-time %	No. of Items	On- time %
At surface				
Crawler crane	2	50%	2	50%
Crane lorry	1	60%	1	60%
Dump truck	1	50%	1	50%
Excavator	1	50%	1	50%
Concrete mixing truck	1	50%	1	50%
Underground (partially covered by decking)				
Rock drill	2	50%	3	60%
Breaker, excavator mounted (hydraulic)	4	50%	4	30%
Welding set	2	60%	2	60%
Water Pump, submersible (electric)	2	100%	2	100%
Ventilation fans	2	50%	2	75%

2.3.3 Detailed plant inventories for individual construction activities for C&C method and drill-and-blast works combined with mechanical excavation at Zone 2 under Works Contract 1123 which has been confirmed to be reasonable and practicable by the Engineer and the Contractor are presented in **Appendices B1** and **B2**, respectively.

3 AIRBORNE CONSTRUCTION NOISE ASSESSMENT

3.1 Noise Sensitive Receiver

3.1.1 According to the EP (No.: EP-436/2012/E) for SCL (HUH-ADM), Causeway Centre, Block A (EX1) has been identified as the NSR for the purpose of this assessment. Location of the NSR is shown in **Figure 1.** Details of the NSR with the predicted noise results in the approved EIA Report are presented in **Table 3.1**.

Table 3.1 Summary of Predicted Cumulative Noise Level in the Approved SCL(HUH-ADM) EIA Report

NSR ID	NSR Description	Use	Noise Criterion, $L_{eq\ (30\text{-}min)}$, dB(A)	Predicted Noise Level, $L_{eq\ (30\text{-}min)}$, dB(A)[1]	Exceedance $L_{eq\ (30\text{-}min)}$, dB(A)	Duration of Exceedance, month
EX1	Causeway Centre, Block A	Residential	75	57 - **76**	1	2

Note:
[1] The bolded noise level exceeds the noise criterion.

3.2 Assessment Criteria

3.2.1 Noise impacts generated by the construction of this Project have been assessed in accordance with the criteria given in the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM). The construction noise standards are presented in **Table 3.2**.

Table 3.2 Daytime Construction Noise Criteria

Use	Noise Level in $L_{eq\ (30\text{-}min)}$, dB(A)
Residential	75
Educational Institute (examination period)	70 (65)

3.3 Assessment Methodology

3.3.1 The construction noise assessment has been conducted following the same methodology used in the approved EIA Report for SCL (HUH-ADM) based on the updated construction programme and plant inventory provided by Leighton – China State Joint Venture.

3.3.2 Noise impacts generated by the construction of this Project are assessed in accordance with the methodology given in the *Technical Memorandum on Noise from Construction Work Other Than Percussive Piling* (GW-TM) under the Noise Control Ordinance.

3.3.3 Sound power levels (SWLs) of the equipment have been made reference from Table 3 of GW-TM. Where no relevant SWL is found in the GW-TM, reference has been made to EPD's Quality Powered Mechanical Equipment (QPME) labels, *British Standard 5228: Part 1:2009 Noise Control on Construction and Open Sites*, SWL noise measurement reports and approved EIA Reports.

3.3.4 It is assumed that all PME items required for a particular construction activity would be located at the notional source position which is a position mid-way between the approximate geographical centre of each phase construction work site and its boundary nearest to the NSR.

3.3.5 To predict the noise level, PME items has been divided into groups required for each discrete construction task. The objective is to identify the worst case scenario representing those items of PME that would be in use concurrently at any given time. The sound pressure level (SPL) of each construction task at the NSR is calculated based on the number of plant and the notional distance from the noise assessment points. The notional distances of the works area to the NSR are presented in **Appendix C**. If there are concurrent construction tasks, the noise levels

at representative noise assessment points are predicted by adding up the SPL of all concurrent construction tasks.

3.3.6 A positive 3 dB(A) façade correction has been added to the predicted noise levels in order to account for the façade effect at each noise assessment point. Noise impact at the worst affected sensitive façade of the NSR to the noise source is assessed.

3.3.7 Based on latest information, the proposed works under Works Contract 1123 would be conducted concurrently with Wan Chai Development Phase II (WDII), and construction works in Works Site 205b (Construction of Harbour Road Sports Centre). Cumulative impact assessment has been conducted taken into account these concurrent projects/works within 300m Study Area of the NSR.

3.3.8 For the assessment of cumulative impact from WDII, the maximum mitigated noise level predicted at EX1 in the approved EIA Report for "Wan Chai Development Phase II and Central-Wan Chai Bypass" (WDII&CWB EIA Report) (Register No.: AEIAR-125/2008) was adopted as the worst case scenario. Based on the EM&A reports of WDII&CWB project, the construction works has been divided into various contracts, in which only two contracts, CEDD Contract Nos. HK/2009/01 and HK/2009/02 are partially within 300m Study Area of the NSR. According to the information on WDII&CWB project website, the major construction activities for CEDD Contract No. HK/2009/01 was substantially completed in May 2016, and the construction activities for CEDD Contract No. HK/2009/02 are estimated to be completed in the third quarter of 2018. Based on the programme of HK/2009/02, major noisy activities within 300m boundary of EX1 ended in May 2017, and the works till the third quarter of 2018 will include mainly minor works and landscaping / tree maintenance works only. The information is extracted from the latest available monthly EM&A report of WDII&CWB (September 2017) and appended in **Appendix D**.

3.3.9 Construction of Harbour Road Sports Centre is another concurrent works of Works Contract 1123. The construction noise impact from this construction activity was also taken into account in the CNMMP for Works Contract 1126 (1126 CNMMP) as a concurrent works. According to the project proponent of construction of Harbour Road Sports Centre, the construction noise predictions and programme for this activity presented in the 1126 CNMMP are still valid. For the purpose of the CNMMP for Works Contract 1123, the cumulative noise impact from these construction works has been assessed based on the information in 1126 CNMMP. The relevant information for these activities extracted from 1126 CNMMP is presented in **Appendix D**. According to Monthly EM&A Report No.11 of Works Contract 1126 (May 2015), all construction activities under Works Contract 1126 were completed in May 2015, such that no cumulative impact is anticipated from it.

3.3.10 The noise mitigation measures proposed in the approved EIA Report have been taken into account in this CNMMP, as shown in **Table 3.3** and **Table 3.4** below. Considering the noise reduction performance, other than conventional movable barrier and fabric, sound proof sheet is recommended for breaker, excavator mounted (hydraulic) for underground works without noise cover. According to the test report, the sound proof sheet can reduce up to 16 dB(A). As a conservative approach, only 10 dB(A) reduction is adopted in this assessment. The sound proof sheets should be placed at a position that completely block the line of sight between the breaker, excavator mounted (hydraulic) and the NSR. There should be no opening or gaps at the joints of the sound proof sheets. The details of the sound proof sheet is appended in **Appendix F**. Taking into account the latest construction programme and PME inventory provided by the Contractor as well as the quieter PME available in Hong Kong, the number of quieter PME proposed at this stage is reduced comparing to the Approved EIA Report. The reference code and SWL of some quieter PME adjusted in consideration of the type and SWL of quieter PME available in Hong Kong. The quieter PME as listed in **Table 3.3** could be found in Hong Kong.

Table 3.3 Quiet PME Recommended for Adoption during Construction Phase

Quiet PME Items	Reference	SWL, dB(A)
Concrete mixing truck	BS D6/33	96
Crane, mobile	EPD-01239	109

Quiet PME Items	Reference	SWL, dB(A)
Crawler crane	EPD-00467	102
Crawler crane with grab	EPD-00467	102
Crawler crane, mobile	EPD-00467	102
Excavator	EPD-02341	105
Rock drill	[1]	108

Note:
[1] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Table 3.4 Noise Mitigation Measures for Certain PME during Construction Phase

PME	Mitigation Measures Proposed	Noise Reduction, dB(A)[1]
Air compressor	Movable Barrier	10
Breaker, excavator mounted (hydraulic)	Sound Proof Sheet [2]	10
Concrete pump	Movable Barrier	10
Crane, mobile	Movable Barrier	5
Desander	Movable Barrier	10
Dump truck	Movable Barrier	5
Excavator	Movable Barrier	5
Filter Press	Movable Barrier	10
Generator	Movable Barrier	10
Hand held pneumatic breaker	Movable Barrier	5
Piling Rig	Fabric	10
Piling, large diameter bored, oscillator	Fabric	10
Rock drill	Movable Barrier	5
Rock drill - excavator mounted (pneumatic)	Movable Barrier	5
Saw, concrete	Movable Barrier	10
Welding set	Movable Barrier	10

Note:
[1] Noise level reduction of 5 dB(A) and 10 dB(A) was adopted for movable barrier for mobile plant and stationary plant respectively.
[2] Sound proof sheet is proposed for breaker, excavator mounted (hydraulic) for underground works only. It will be placed at and attached to the surface where breaking operation is carried out and the noise generating parts of the PME respectively to ensure no direct line of sight from nearby NSRs to the noise sources associated with the breaker.

3.3.11 The optional use of drill-and-blast combined with mechanical excavation construction method in Zone 2 only involves changing the construction method of Zone 2 without changing its design and will not significantly change the location and size of the excavation area. The blasting activities would be enclosed with construction deck (steel deck with approximately 15mm thickness) or noise panel to reduce noise nuisance. There would be openings at the top of the blasting area and these openings would be covered during blasting. The noise panel / construction deck should have minimum noise performance of 10dB(A) reduction. A preliminary schematic design drawing of the blasting area is shown in **Appendix G**.

3.4 Noise Assessment Results

3.4.1 The airborne construction noise impacts for the construction works under Works Contract 1123 have been assessed based on the updated construction programme and plant inventory and are summarised in **Table 3.5**. Detailed assessment results are provided in **Appendices E1** and **E2**, respectively for C&C method and drill-and-blast works combined with mechanical excavation at Zone 2**.** The proposed mitigation measures described in **Section 3.3** have been included in the assessment and hence only the mitigated scenario is presented.

Table 3.5 Summary of Noise Assessment Result (SCL1123 only)

NSR ID	NSR	Predicted Noise Level, Leq (30-min), dB(A)	Noise Criteria, Leq (30-min), dB(A)	Exceedance, Leq (30-min), dB(A)	Duration, month (Period of exceedance)
(1) C&C Method					
EX1	Causeway Centre, Block A	67 - 75	75	0	N/A
(2) Drill-and-Blast Works Combined with Mechanical Excavation					
EX1	Causeway Centre, Block A	67 - 75	75	0	N/A

Note:
N/A – Not applicable

3.4.2 **Table 3.6** presents the cumulative noise level at the identified NSR and details of the calculation are given in **Appendices E1** and **E2**, respectively for the two construction methods at Zone 2. After taking the cumulative impact from concurrent projects into account, no excessive residual impacts have been predicted at the NSR with the implementation of all above mentioned mitigation measures.

Table 3.6 Summary of Noise Assessment Result (Cumulative)

NSR ID	NSR	Predicted Noise Level, $L_{eq\ (30\text{-}min)}$, dB(A)[1]	Noise Criteria, $L_{eq\ (30\text{-}min)}$, dB(A)	Exceedance, $L_{eq\ (30\text{-}min)}$, dB(A)	Duration, month (Period of exceedance)
(1) C&C Method					
EX1	Causeway Centre, Block A	68 - 75	75	0	N/A
(3) Drill-and-Blast Works Combined with Mechanical Excavation					
EX1	Causeway Centre, Block A	67 - 75	75	0	N/A

Note:
N/A – Not applicable

3.4.3 Comparing to the SCL(HUH-ADM) EIA Report, the maximum predicted noise level at Causeway Centre, Block A reduces from 76 to 75 dB(A), for both construction methods at Zone 2. No exceedance is anticipated with the implementation of mitigation measures.

4 CONCLUSION

4.1.1 This CNMMP has predicted the construction noise impact from Works Contract 1123 to the identified NSR. This plan has taken into account the updated information on PMEs and works programme which would be adopted by the Contractor. With the implementation of mitigation measures in form of quiet plants, barriers and acoustic fabrics, the construction noise impact has been predicted to reduce from 76 dB(A) as the prediction in the EIA Report to 75 dB(A). No exceedance is anticipated throughout the construction period.

4.1.2 Where necessary, further review and update will be performed during the construction phase and liaison with affected parties is recommended to minimise the construction noise impacts as far as practicable.

FIGURES

835600 E
835800 E
836000 E
836200 E
836400 E
836600 E
816200 N
816000 N
815800 N
815600 N

LEGEND:

- PROPOSED SCL ALIGNMENT
- SCL SCHEME BOUNDARY
- EX1 — AIRBORNE NSR
- ZONE 1 — WORKS AREA

ABBREVIATIONS:

SCL	SHATIN TO CENTRAL LINK
EXH	EXHIBITION STATION

維多利亞港
VICTORIA HARBOUR

BARGING POINT

EXH

AREA B
AREA A
AREA C
AREA E

ZONE 1
ZONE 2
ZONE 3
ZONE 4

EX1

METRES
0 15 30 45 60 75
1 : 3000

PLOT DRV: P:\Projects\603366\03\CAD\ADMIN\PLOTDRIVER\A3_BW_COL_SYSTEM.PLT
MODEL NAME: Default PRINTED BY: LONGPAE 10:52:44
FILENAME: P:\Projects\603866\03\ADMIN\LENSKY\FIGURE 1.dgn 2015/4/1

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	NHP
DESIGNED	---
CHECKED	LCR
APPROVED	---
DATE	30/MAR/2015

MTR

SHATIN TO CENTRAL LINK

ORIGINATOR

AECOM

CADD REF. FIGURE 1.dgn

TITLE

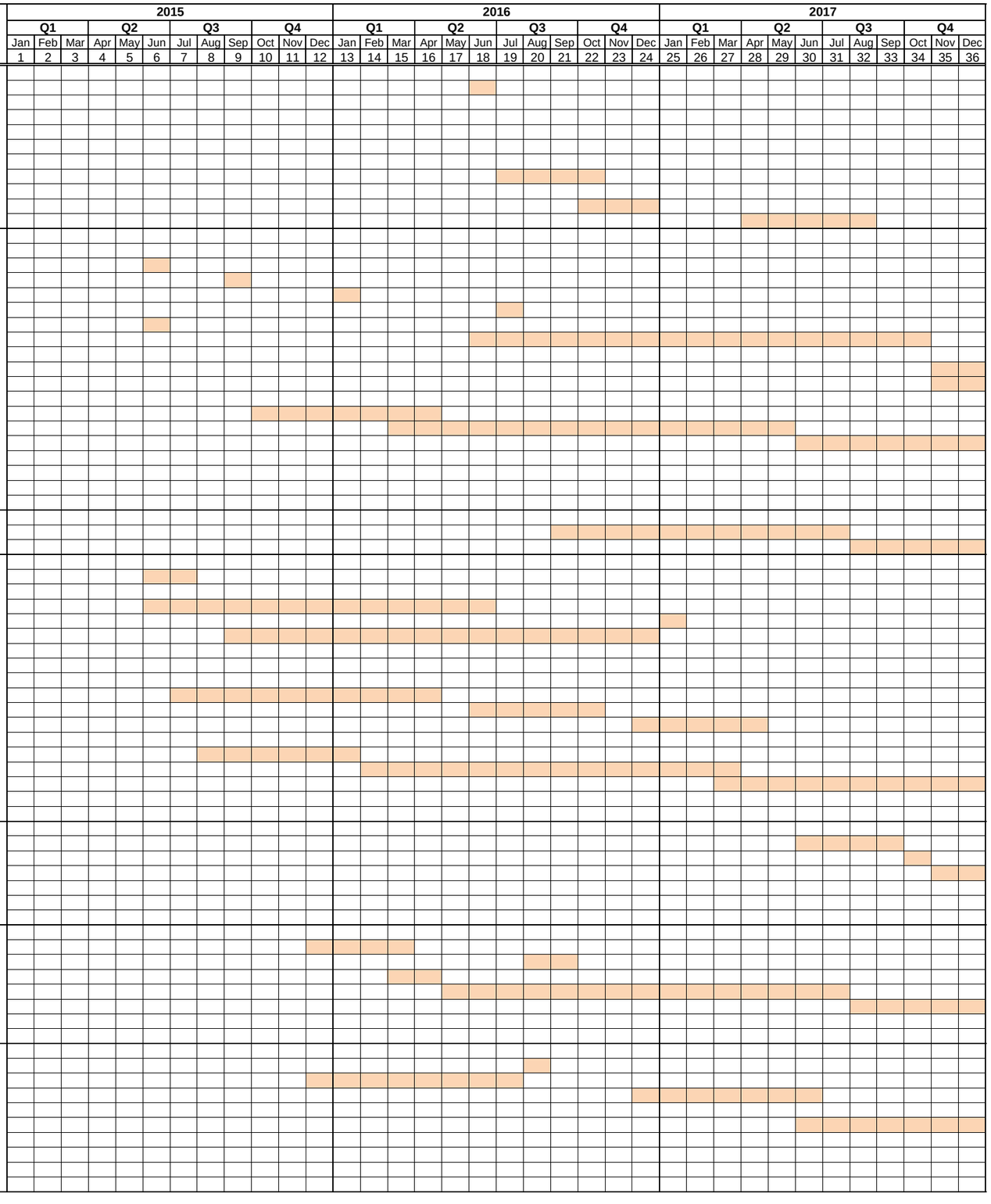
SHATIN TO CENTRAL LINK - CONTRACT 1123
EXHIBITION STATION AND TUNNELS
WORKS AREA AND LOCATION OF REPRESENTATIVE NOISE SENSITIVE RECEIVER

SCALE	FIGURE NO.	REV.
1 : 3000 (A3)	FIGURE 1	-

Appendix A1
Construction Programme for C&C Method at Zone 2

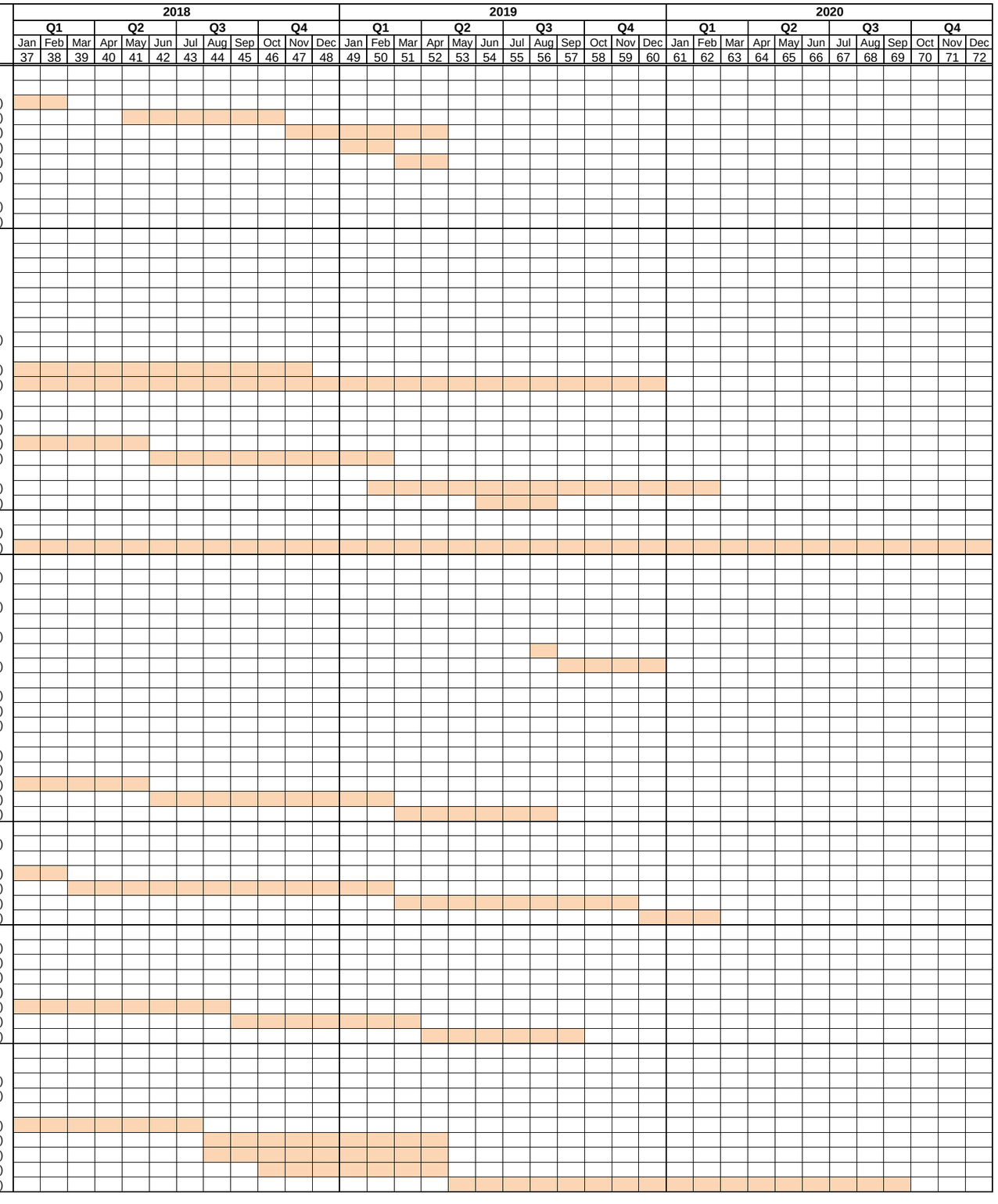
Appendix A1 - Construction Programme for C&C Method at Zone 2

Package	Area / Zone	Construction Activity	Construction Period
07 EXH		**EXH Structure**	
	Area E	(a) Site Hoarding Erection	(06/2016)
	Area E	(b) Roof Slab Construction	(01/2018 - 02/2018)
	Area E	(c) Excavation	(05/2018 - 10/2018)
	Area E	(d) Construction of Internal Structures of Box Station	(11/2018 - 04/2019)
	Area C	(e) Construction of Entrance and Vent Shafts	(01/2019 - 02/2019)
	Area C	(f) Construction of Station Box Roof Slab	(03/2019 - 04/2019)
	Area E	(h) Utility diversion	(07/2016 - 10/2016)
		(i) Pipe Pile Construction	
	Area E	> Stage 1	(10/2016 - 12/2016)
	Area E	> Stage 2	(04/2017 - 08/2017)
06 EXH to Shaft		**Tunnel at West to EXH**	
		(a) Site Formation	
	Areas A & B	> Areas A & B	(06/2015)
	Area A	> Areas A	(09/2015)
	Area C	> Area C - 1	(01/2016)
	Area C	> Area C - 2	(07/2016)
	Areas A & B	(b) Site Hoarding Erection	(06/2015)
	Areas A & B	(c) Excavation inside SCL tunnels protection works	(06/2016 - 10/2017)
		(d) Tunnel Box Structure Construction	
	Area A	> Area A	(11/2017 - 11/2018)
	Area B	> Area B	(11/2017 - 12/2019)
		(e) Diaphragm Wall Construction	
	Area A	> Area A	(10/2015 - 04/2016)
	Area C	> Area C	(03/2016 - 05/2017)
	Area C	(f) Excavation	(06/2017 - 05/2018)
	Area C	(g) Tunnel Box Structure Construction	(06/2018 - 02/2019)
		(h) Backfilling and Superstructure	
	Area C	> Stage 1	(02/2019 - 02/2020)
	Area C	> Stage 2	(06/2019 - 08/2019)
Barging Point	Barging Point	**Barging Point at Wan Chai Ex-PCWA**	
		Construction/Set up	(09/2016 - 07/2017)
		Spoil Disposal	(08/2017 - 12/2020)
	Zone 1	**Wan Chai PTI Area**	
		Site clearance, Site Hoarding Erection and utility diversion	(06/2015 - 07/2015)
		Demolition of existing Wan Chai Ferry Pier footbridge	
		> Stage 1	(06/2015 - 06/2016)
		> Stage 2	(01/2017)
		Construction of temporary Wan Chai Ferry Pier footbridge	(09/2015 - 12/2016)
		Construction of Permanent Wan Chai Ferry Pier footbridge (Superstructure)	(08/2019)
		Demolition of Temporary Wan Chai Ferry Pier footbridge	(09/2019 - 12/2019)
		Piling works (PPW and H-piles)	
		> Stage 1 (TTM Stage 2)	(07/2015 - 04/2016)
		> Stage 2 (TTM Stage 3a & 3b)	(06/2016 - 10/2016)
		> Stage 3 (TTM Stage 3C)	(12/2016 - 04/2017)
		Diaphragm wall construction	
		> Stage 1 (TTM Stage 2)	(08/2015 - 01/2016)
		> Stage 2 (TTM Stage 3a/3b/3c & 5)	(02/2016 - 03/2017)
		Excavation & ELS installation	(03/2017 - 05/2018)
		Construction of Internal Structure of Box Station	(06/2018 - 02/2019)
		Construction of Entrances and Structure	(03/2019 - 08/2019)
	Zone 2	**Harbour Road Sports Centre Area**	
		Demolition of Harbour Road Sports Centre (HRSC)	(06/2017 - 09/2017)
		Site Hoarding Erection & Pile Removal	(10/2017)
		Piling works (PPW and H-piles)	(11/2017 - 02/2018)
		Excavation & ELS installation (C&C Method)	(03/2018 - 02/2019)
		Construction of Internal Structure of Box Station	(03/2019 - 11/2019)
		Construction of Entrances and Ground structure	(12/2019 - 02/2020)
	Zone 3	**Wan Chai Swimming Pool Area**	
		Demolition of Wan Chai Swimming Pool	(12/2015 - 03/2016)
		Site Hoarding Erection & Pile Removal	(08/2016 - 09/2016)
		Piling works (H-piles)	(03/2016 - 04/2016)
		Diaphragm wall construction	(05/2016 - 07/2017)
		Excavation & ELS installation	(08/2017 - 08/2018)
		Construction of Internal Structure of Box Station	(09/2018 - 03/2019)
		Construction of Vent Shaft and Ground structure	(04/2019 - 09/2019)
	Zone 4	**Wan Chai Sports Ground Area**	
		Piling works (H-piles) - Wan Chai Sports Ground (WCSG)	(08/2016)
		Diaphragm wall construction - Phase 1 WCSG	(12/2015 - 07/2016)
		Piling works (PPW and H-piles) - Tonnochy Road	(12/2016 - 06/2017)
		Excavation & ELS installation	
		> Underground (no noise cover)	(06/2017 - 07/2018)
		> Underground (with full noise cover over Tonnochy Road)	(08/2018 - 04/2019)
		> At surface	(08/2018 - 04/2019)
		Construction of Internal Structure of Box Station	(10/2018 - 04/2019)
		Reprovision of WCSG grandstand	(05/2019 - 09/2020)



Appendix A1 - Construction Programme for C&C Method at Zone 2

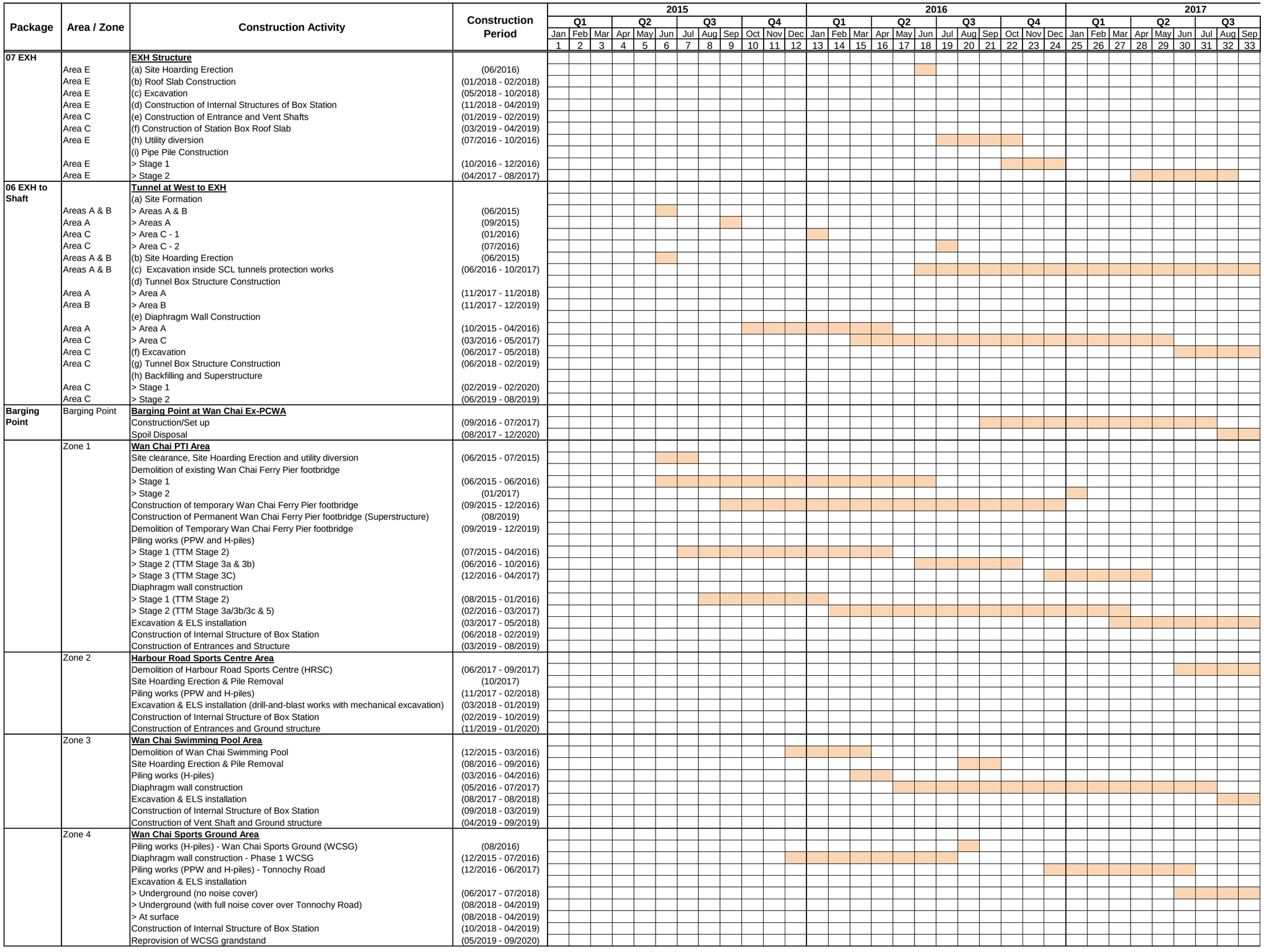
Package	Area / Zone	Construction Activity	Construction Period
07 EXH		**EXH Structure**	
	Area E	(a) Site Hoarding Erection	(06/2016)
	Area E	(b) Roof Slab Construction	(01/2018 - 02/2018)
	Area E	(c) Excavation	(05/2018 - 10/2018)
	Area E	(d) Construction of Internal Structures of Box Station	(11/2018 - 04/2019)
	Area C	(e) Construction of Entrance and Vent Shafts	(01/2019 - 02/2019)
	Area C	(f) Construction of Station Box Roof Slab	(03/2019 - 04/2019)
	Area E	(h) Utility diversion	(07/2016 - 10/2016)
		(i) Pipe Pile Construction	
	Area E	> Stage 1	(10/2016 - 12/2016)
	Area E	> Stage 2	(04/2017 - 08/2017)
06 EXH to Shaft		**Tunnel at West to EXH**	
		(a) Site Formation	
	Areas A & B	> Areas A & B	(06/2015)
	Area A	> Areas A	(09/2015)
	Area C	> Area C - 1	(01/2016)
	Area C	> Area C - 2	(07/2016)
	Areas A & B	(b) Site Hoarding Erection	(06/2015)
	Areas A & B	(c) Excavation inside SCL tunnels protection works	(06/2016 - 10/2017)
		(d) Tunnel Box Structure Construction	
	Area A	> Area A	(11/2017 - 11/2018)
	Area B	> Area B	(11/2017 - 12/2019)
		(e) Diaphragm Wall Construction	
	Area A	> Area A	(10/2015 - 04/2016)
	Area C	> Area C	(03/2016 - 05/2017)
	Area C	(f) Excavation	(06/2017 - 05/2018)
	Area C	(g) Tunnel Box Structure Construction	(06/2018 - 02/2019)
		(h) Backfilling and Superstructure	
	Area C	> Stage 1	(02/2019 - 02/2020)
	Area C	> Stage 2	(06/2019 - 08/2019)
Barging Point	Barging Point	**Barging Point at Wan Chai Ex-PCWA**	
		Construction/Set up	(09/2016 - 07/2017)
		Spoil Disposal	(08/2017 - 12/2020)
	Zone 1	**Wan Chai PTI Area**	
		Site clearance, Site Hoarding Erection and utility diversion	(06/2015 - 07/2015)
		Demolition of existing Wan Chai Ferry Pier footbridge	
		> Stage 1	(06/2015 - 06/2016)
		> Stage 2	(01/2017)
		Construction of temporary Wan Chai Ferry Pier footbridge	(09/2015 - 12/2016)
		Construction of Permanent Wan Chai Ferry Pier footbridge (Superstructure)	(08/2019)
		Demolition of Temporary Wan Chai Ferry Pier footbridge	(09/2019 - 12/2019)
		Piling works (PPW and H-piles)	
		> Stage 1 (TTM Stage 2)	(07/2015 - 04/2016)
		> Stage 2 (TTM Stage 3a & 3b)	(06/2016 - 10/2016)
		> Stage 3 (TTM Stage 3C)	(12/2016 - 04/2017)
		Diaphragm wall construction	
		> Stage 1 (TTM Stage 2)	(08/2015 - 01/2016)
		> Stage 2 (TTM Stage 3a/3b/3c & 5)	(02/2016 - 03/2017)
		Excavation & ELS installation	(03/2017 - 05/2018)
		Construction of Internal Structure of Box Station	(06/2018 - 02/2019)
		Construction of Entrances and Structure	(03/2019 - 08/2019)
	Zone 2	**Harbour Road Sports Centre Area**	
		Demolition of Harbour Road Sports Centre (HRSC)	(06/2017 - 09/2017)
		Site Hoarding Erection & Pile Removal	(10/2017)
		Piling works (PPW and H-piles)	(11/2017 - 02/2018)
		Excavation & ELS installation (C&C Method)	(03/2018 - 02/2019)
		Construction of Internal Structure of Box Station	(03/2019 - 11/2019)
		Construction of Entrances and Ground structure	(12/2019 - 02/2020)
	Zone 3	**Wan Chai Swimming Pool Area**	
		Demolition of Wan Chai Swimming Pool	(12/2015 - 03/2016)
		Site Hoarding Erection & Pile Removal	(08/2016 - 09/2016)
		Piling works (H-piles)	(03/2016 - 04/2016)
		Diaphragm wall construction	(05/2016 - 07/2017)
		Excavation & ELS installation	(08/2017 - 08/2018)
		Construction of Internal Structure of Box Station	(09/2018 - 03/2019)
		Construction of Vent Shaft and Ground structure	(04/2019 - 09/2019)
	Zone 4	**Wan Chai Sports Ground Area**	
		Piling works (H-piles) - Wan Chai Sports Ground (WCSG)	(08/2016)
		Diaphragm wall construction - Phase 1 WCSG	(12/2015 - 07/2016)
		Piling works (PPW and H-piles) - Tonnochy Road	(12/2016 - 06/2017)
		Excavation & ELS installation	
		> Underground (no noise cover)	(06/2017 - 07/2018)
		> Underground (with full noise cover over Tonnochy Road)	(08/2018 - 04/2019)
		> At surface	(08/2018 - 04/2019)
		Construction of Internal Structure of Box Station	(10/2018 - 04/2019)
		Reprovision of WCSG grandstand	(05/2019 - 09/2020)



Appendix A2
Construction Programme for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Appendix A2 - Construction Programme for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Package	Area / Zone	Construction Activity	Construction Period
07 EXH		**EXH Structure**	
	Area E	(a) Site Hoarding Erection	(06/2016)
	Area E	(b) Roof Slab Construction	(01/2018 - 02/2018)
	Area E	(c) Excavation	(05/2018 - 10/2018)
	Area E	(d) Construction of Internal Structures of Box Station	(11/2018 - 04/2019)
	Area C	(e) Construction of Entrance and Vent Shafts	(01/2019 - 02/2019)
	Area C	(f) Construction of Station Box Roof Slab	(03/2019 - 04/2019)
	Area E	(h) Utility diversion	(07/2016 - 10/2016)
		(i) Pipe Pile Construction	
	Area E	> Stage 1	(10/2016 - 12/2016)
	Area E	> Stage 2	(04/2017 - 08/2017)
06 EXH to Shaft		**Tunnel at West to EXH**	
		(a) Site Formation	
	Areas A & B	> Areas A & B	(06/2015)
	Area A	> Areas A	(09/2015)
	Area C	> Area C - 1	(01/2016)
	Area C	> Area C - 2	(07/2016)
	Areas A & B	(b) Site Hoarding Erection	(06/2015)
	Areas A & B	(c) Excavation inside SCL tunnels protection works	(06/2016 - 10/2017)
		(d) Tunnel Box Structure Construction	
	Area A	> Area A	(11/2017 - 11/2018)
	Area B	> Area B	(11/2017 - 12/2019)
		(e) Diaphragm Wall Construction	
	Area A	> Area A	(10/2015 - 04/2016)
	Area C	> Area C	(03/2016 - 05/2017)
	Area C	(f) Excavation	(06/2017 - 05/2018)
	Area C	(g) Tunnel Box Structure Construction	(06/2018 - 02/2019)
		(h) Backfilling and Superstructure	
	Area C	> Stage 1	(02/2019 - 02/2020)
	Area C	> Stage 2	(06/2019 - 08/2019)
Barging Point	Barging Point	**Barging Point at Wan Chai Ex-PCWA**	
		Construction/Set up	(09/2016 - 07/2017)
		Spoil Disposal	(08/2017 - 12/2020)
	Zone 1	**Wan Chai PTI Area**	
		Site clearance, Site Hoarding Erection and utility diversion	(06/2015 - 07/2015)
		Demolition of existing Wan Chai Ferry Pier footbridge	
		> Stage 1	(06/2015 - 06/2016)
		> Stage 2	(01/2017)
		Construction of temporary Wan Chai Ferry Pier footbridge	(09/2015 - 12/2016)
		Construction of Permanent Wan Chai Ferry Pier footbridge (Superstructure)	(08/2019)
		Demolition of Temporary Wan Chai Ferry Pier footbridge	(09/2019 - 12/2019)
		Piling works (PPW and H-piles)	
		> Stage 1 (TTM Stage 2)	(07/2015 - 04/2016)
		> Stage 2 (TTM Stage 3a & 3b)	(06/2016 - 10/2016)
		> Stage 3 (TTM Stage 3C)	(12/2016 - 04/2017)
		Diaphragm wall construction	
		> Stage 1 (TTM Stage 2)	(08/2015 - 01/2016)
		> Stage 2 (TTM Stage 3a/3b/3c & 5)	(02/2016 - 03/2017)
		Excavation & ELS installation	(03/2017 - 05/2018)
		Construction of Internal Structure of Box Station	(06/2018 - 02/2019)
		Construction of Entrances and Structure	(03/2019 - 08/2019)
	Zone 2	**Harbour Road Sports Centre Area**	
		Demolition of Harbour Road Sports Centre (HRSC)	(06/2017 - 09/2017)
		Site Hoarding Erection & Pile Removal	(10/2017)
		Piling works (PPW and H-piles)	(11/2017 - 02/2018)
		Excavation & ELS installation (drill-and-blast works with mechanical excavation)	(03/2018 - 01/2019)
		Construction of Internal Structure of Box Station	(02/2019 - 10/2019)
		Construction of Entrances and Ground structure	(11/2019 - 01/2020)
	Zone 3	**Wan Chai Swimming Pool Area**	
		Demolition of Wan Chai Swimming Pool	(12/2015 - 03/2016)
		Site Hoarding Erection & Pile Removal	(08/2016 - 09/2016)
		Piling works (H-piles)	(03/2016 - 04/2016)
		Diaphragm wall construction	(05/2016 - 07/2017)
		Excavation & ELS installation	(08/2017 - 08/2018)
		Construction of Internal Structure of Box Station	(09/2018 - 03/2019)
		Construction of Vent Shaft and Ground structure	(04/2019 - 09/2019)
	Zone 4	**Wan Chai Sports Ground Area**	
		Piling works (H-piles) - Wan Chai Sports Ground (WCSG)	(08/2016)
		Diaphragm wall construction - Phase 1 WCSG	(12/2015 - 07/2016)
		Piling works (PPW and H-piles) - Tonnochy Road	(12/2016 - 06/2017)
		Excavation & ELS installation	
		> Underground (no noise cover)	(06/2017 - 07/2018)
		> Underground (with full noise cover over Tonnochy Road)	(08/2018 - 04/2019)
		> At surface	(08/2018 - 04/2019)
		Construction of Internal Structure of Box Station	(10/2018 - 04/2019)
		Reprovision of WCSG grandstand	(05/2019 - 09/2020)



Appendix A2 - Construction Programme for Drill-and-Blast Works Combined with Mechanical Excavation at

Package	Area / Zone	Construction Activity	Construction Period	2018														2019												2020											
				Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4		
				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	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
				34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
07 EXH		**EXH Structure**																																							
	Area E	(a) Site Hoarding Erection	(06/2016)																																						
	Area E	(b) Roof Slab Construction	(01/2018 - 02/2018)																																						
	Area E	(c) Excavation	(05/2018 - 10/2018)																																						
	Area E	(d) Construction of Internal Structures of Box Station	(11/2018 - 04/2019)																																						
	Area C	(e) Construction of Entrance and Vent Shafts	(01/2019 - 02/2019)																																						
	Area C	(f) Construction of Station Box Roof Slab	(03/2019 - 04/2019)																																						
	Area E	(h) Utility diversion	(07/2016 - 10/2016)																																						
		(i) Pipe Pile Construction																																							
	Area E	> Stage 1	(10/2016 - 12/2016)																																						
	Area E	> Stage 2	(04/2017 - 08/2017)																																						
06 EXH to Shaft		**Tunnel at West to EXH**																																							
		(a) Site Formation																																							
	Areas A & B	> Areas A & B	(06/2015)																																						
	Area A	> Areas A	(09/2015)																																						
	Area C	> Area C - 1	(01/2016)																																						
	Area C	> Area C - 2	(07/2016)																																						
	Areas A & B	(b) Site Hoarding Erection	(06/2015)																																						
	Areas A & B	(c) Excavation inside SCL tunnels protection works	(06/2016 - 10/2017)																																						
		(d) Tunnel Box Structure Construction																																							
	Area A	> Area A	(11/2017 - 11/2018)																																						
	Area B	> Area B	(11/2017 - 12/2019)																																						
		(e) Diaphragm Wall Construction																																							
	Area A	> Area A	(10/2015 - 04/2016)																																						
	Area C	> Area C	(03/2016 - 05/2017)																																						
	Area C	(f) Excavation	(06/2017 - 05/2018)																																						
	Area C	(g) Tunnel Box Structure Construction	(06/2018 - 02/2019)																																						
		(h) Backfilling and Superstructure																																							
	Area C	> Stage 1	(02/2019 - 02/2020)																																						
	Area C	> Stage 2	(06/2019 - 08/2019)																																						
Barging Point	Barging Point	**Barging Point at Wan Chai Ex-PCWA**																																							
		Construction/Set up	(09/2016 - 07/2017)																																						
		Spoil Disposal	(08/2017 - 12/2020)																																						
	Zone 1	**Wan Chai PTI Area**																																							
		Site clearance, Site Hoarding Erection and utility diversion	(06/2015 - 07/2015)																																						
		Demolition of existing Wan Chai Ferry Pier footbridge																																							
		> Stage 1	(06/2015 - 06/2016)																																						
		> Stage 2	(01/2017)																																						
		Construction of temporary Wan Chai Ferry Pier footbridge	(09/2015 - 12/2016)																																						
		Construction of Permanent Wan Chai Ferry Pier footbridge (Superstructure)	(08/2019)																																						
		Demolition of Temporary Wan Chai Ferry Pier footbridge	(09/2019 - 12/2019)																																						
		Piling works (PPW and H-piles)																																							
		> Stage 1 (TTM Stage 2)	(07/2015 - 04/2016)																																						
		> Stage 2 (TTM Stage 3a & 3b)	(06/2016 - 10/2016)																																						
		> Stage 3 (TTM Stage 3C)	(12/2016 - 04/2017)																																						
		Diaphragm wall construction																																							
		> Stage 1 (TTM Stage 2)	(08/2015 - 01/2016)																																						
		> Stage 2 (TTM Stage 3a/3b/3c & 5)	(02/2016 - 03/2017)																																						
		Excavation & ELS installation	(03/2017 - 05/2018)																																						
		Construction of Internal Structure of Box Station	(06/2018 - 02/2019)																																						
		Construction of Entrances and Structure	(03/2019 - 08/2019)																																						
	Zone 2	**Harbour Road Sports Centre Area**																																							
		Demolition of Harbour Road Sports Centre (HRSC)	(06/2017 - 09/2017)																																						
		Site Hoarding Erection & Pile Removal	(10/2017)																																						
		Piling works (PPW and H-piles)	(11/2017 - 02/2018)																																						
		Excavation & ELS installation (drill-and-blast works with mechanical excavation)	(03/2018 - 01/2019)																																						
		Construction of Internal Structure of Box Station	(02/2019 - 10/2019)																																						
		Construction of Entrances and Ground structure	(11/2019 - 01/2020)																																						
	Zone 3	**Wan Chai Swimming Pool Area**																																							
		Demolition of Wan Chai Swimming Pool	(12/2015 - 03/2016)																																						
		Site Hoarding Erection & Pile Removal	(08/2016 - 09/2016)																																						
		Piling works (H-piles)	(03/2016 - 04/2016)																																						
		Diaphragm wall construction	(05/2016 - 07/2017)																																						
		Excavation & ELS installation	(08/2017 - 08/2018)																																						
		Construction of Internal Structure of Box Station	(09/2018 - 03/2019)																																						
		Construction of Vent Shaft and Ground structure	(04/2019 - 09/2019)																																						
	Zone 4	**Wan Chai Sports Ground Area**																																							
		Piling works (H-piles) - Wan Chai Sports Ground (WCSG)	(08/2016)																																						
		Diaphragm wall construction - Phase 1 WCSG	(12/2015 - 07/2016)																																						
		Piling works (PPW and H-piles) - Tonnochy Road	(12/2016 - 06/2017)																																						
		Excavation & ELS installation																																							
		> Underground (no noise cover)	(06/2017 - 07/2018)																																						
		> Underground (with full noise cover over Tonnochy Road)	(08/2018 - 04/2019)																																						
		> At surface	(08/2018 - 04/2019)																																						
		Construction of Internal Structure of Box Station	(10/2018 - 04/2019)																																						
		Reprovision of WCSG grandstand	(05/2019 - 09/2020)																																						

Appendix B1
Construction Plant Inventory for C&C Method at Zone 2

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Package: 07 EXH
EXH Structure

(a) Site Hoarding Erection (06/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Excavator	EPD-02341	1	105	100%	0	0	105
Drill, hand-held (electric)	CNP 065	1	98	100%	0	0	98
Generator	CNP 103	1	95	100%	0	0	95
Lorry with crane/grab	CNP 145	1	105	50%	0	0	102
Welding Set	CNP 107	2	100	30%	0	0	98
						Overall Noise Level, dB(A)	**108**

(b) Roof Slab Construction (01/2018 - 02/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Above Ground							
Generator	CNP 103	1	95	80%	0	0	94
Dump truck	CNP 068	1	105	30%	0	0	100
Crane lorry, mobile	CNP 145	1	105	50%	0	0	102
Poker, vibrator, hand-held	CNP 173	3	102	80%	0	0	106
Air Compressor	CNP 002	1	102	80%	0	0	101
Concrete lorry mixer	BS D6/33	1	96	80%	0	0	95
Concrete pump	CNP 047	1	109	80%	0	0	108
						Overall Noise Level, dB(A)	**112**

(c) Excavation (05/2018 - 10/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Underground (covered by deck)							
Excavator	EPD-02341	3	105	60%	-10	0	98
Generator	CNP 103	2	95	80%	-10	0	87
Rock drill, crawler mounted (pneumatic)	CNP 181	1	128	30%	-10	0	113
Ventilation fans	CNP 241	2	108	70%	-10	0	99
Power pack for hand-held items of PME	CNP 168	1	100	30%	-10	0	85
Dump truck	CNP 068	2	105	50%	-10	0	95
Water pump (electric)	CNP 281	2	88	80%	-10	0	80
Welder/ generator, portable	CNP 107	2	100	30%	-10	0	88
						Overall Noise Level, dB(A)	**113**

(d) Construction of Internal Structures of Box Station (11/2018 - 04/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Underground							
Generator	CNP 103	2	95	80%	0	0	97
Ventilation fans	CNP 241	2	108	70%	0	0	109
Power pack for hand-held items of PME	CNP 168	1	100	30%	0	0	95
Water pump (electric)	CNP 281	2	88	80%	0	0	90
Welder/ generator, portable	CNP 107	1	100	30%	0	0	95
Poker, vibrator, hand-held	CNP 173	3	102	100%	0	0	107
						Overall Noise Level, dB(A)	**112**

(e) Construction of Entrance and Vent Shafts (01/2019 - 02/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Above Ground							
Generator	CNP 103	1	95	80%	0	0	94
Crawler crane, mobile	EPD-00467	1	102	100%	0	0	102
Dump truck	CNP 068	1	105	30%	0	0	100
Crane lorry, mobile	CNP 145	1	105	30%	0	0	100
Poker, vibrator, hand-held	CNP 173	2	102	80%	0	0	104
Air Compressor	CNP 002	1	102	80%	0	0	101
Concrete lorry mixer	BS D6/33	2	96	80%	0	0	98
Concrete pump	CNP 047	1	109	80%	0	0	108
						Overall Noise Level, dB(A)	**112**

(f) Construction of Station Box Roof Slab (03/2019 - 04/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Above Ground							
Generator	CNP 103	1	95	80%	0	0	94
Crawler crane, mobile	EPD-00467	1	102	100%	0	0	102
Dump truck	CNP 068	1	105	30%	0	0	100
Crane lorry, mobile	CNP 145	1	105	30%	0	0	100
Poker, vibrator, hand-held	CNP 173	3	102	80%	0	0	106
Air Compressor	CNP 002	1	102	80%	0	0	101
Concrete lorry mixer	BS D6/33	2	96	80%	0	0	98
Concrete pump	CNP 047	1	109	80%	0	0	108
						Overall Noise Level, dB(A)	**112**

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Package: 07 EXH
EXH Structure

(h) Utility diversion (07/2016 - 10/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Mini Backhoe	CNP 082	1	94	50%	0	0	91
Dump Truck	CNP 068	1	105	30%	0	0	100
						Overall Noise Level, dB(A)	**100**

(i) Pipe Pile Construction
Stage 1 (10/2016 - 12/2016)
Stage 2 (04/2017 - 08/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Piling Rig	CNP 167	2	114	100%	0	-10	107
Crane Lorry	CNP 145	1	105	100%	0	0	105
Excavator	EPD-02341	2	105	30%	0	0	103
Generator	CNP 103	2	95	30%	0	0	93
Crawler crane, mobile	EPD-00467	2	102	60%	0	0	103
						Overall Noise Level, dB(A)	**111**

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Package: 06 EXH to Shaft
Tunnel at West to EXH

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

(a) Site Formation

Areas A & B (06/2015)
Area A (09/2015)
Areas C - Stage 1 (01/2016)
Areas C - Stage 2 (07/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Excavator	EPD-02341	1	105	100%	0	0	-	105
Dump Truck with Grab	CNP 068	1	105	30%	0	0	-	100
Breaker, excavator mounted (hydraulic)	CNP 028	1	122	50%	0	0	-	119
Air compressor	CNP 002	1	102	100%	0	0	-	102
Pneumatic Breaker	CNP 027	1	122	60%	0	0	120	-
Generator	CNP 103	1	95	100%	0	0	-	95
Water Pump (electric)	CNP 281	1	88	30%	0	0	-	83
Saw, Concrete	CNP 203	1	115	30%	0	0	-	110
						Overall Noise Level, dB(A)	**120**	**120**
						Maximum, dB(A) [1]:	**120**	

(b) Site Hoarding Erection

(06/2015)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Excavator	EPD-02341	1	105	100%	0	0	105
Drill, hand-held (electric)	CNP 065	1	98	100%	0	0	98
Generator	CNP 103	1	95	100%	0	0	95
Lorry with crane/grab	CNP 145	1	105	50%	0	0	102
Welding Set	CNP 107	2	100	30%	0	0	98
						Overall Noise Level, dB(A)	**108**

(c) Excavation inside SCL tunnels protection works

(06/2016 - 10/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
In Shaft							
Excavator	EPD-02341	9	105	100%	-10	0	105
Breaker, excavator mounted (hydraulic)	CNP 028	3	122	50%	-10	0	114
Rock Drill	[2]	3	108	50%	-10	0	100
Welding Set	CNP 107	1	100	30%	-10	0	85
Water Pump, submersible (electric)	CNP 283	2	85	100%	-10	0	78
At Surface						0	
Crawler crane, mobile	EPD-00467	1	102	50%	0	0	99
Crawler crane, mobile	EPD-00467	2	102	50%	0	0	102
Ventilation Fans	CNP 241	1	108	100%	0	0	108
Dump Truck	CNP 068	1	105	80%	0	-5	99
Air compressor	CNP 002	3	102	100%	0	0	107
Water Pump (electric)	CNP 281	1	88	80%	0	0	87
						Overall Noise Level, dB(A)	**116**

(d) Tunnel Box Structure Construction

Area A (01/2017 - 11/2018)
Area B (01/2017 - 12/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
In Shaft							
Poker, vibrator, hand-held	CNP 173	3	102	50%	-10	0	94
Bar bender and cutter (electric)	CNP 021	1	90	50%	-10	0	77
Water Pump, submersible (electric)	CNP 283	2	85	100%	-10	0	78
Compactor, vibratory	CNP 050	1	105	50%	-10	0	92
At Surface							
Concrete lorry mixer	BS D6/33	2	96	50%	0	0	96
Crawler crane, mobile	EPD-00467	1	102	60%	0	0	100
Crawler crane, mobile	EPD-00467	2	102	60%	0	0	103
Ventilation Fans	CNP 241	2	108	100%	0	0	111
Air compressor	CNP 002	1	102	100%	0	0	102
Concrete Pump	CNP 047	2	109	100%	0	0	112
Water Pump (electric)	CNP 281	1	88	80%	0	0	87
						Overall Noise Level, dB(A)	**115**

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Package: 06 EXH to Shaft
Tunnel at West to EXH

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

(e) Diaphragm Wall Construction

Area A (10/2015 - 04/2016)
Area C (03/2016 - 05/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	3	95	30%	0	0	95	-
Dump truck	CNP 068	2	105	30%	0	0	103	-
Piling, diaphragm wall, bentonite filtering plant	CNP 162	1	105	40%	0	0	101	-
Crane (Grab & Service)	CNP 048	2	112	70%	0	0	-	113
Hydraulic extractor	CNP 163	2	90	100%	0	0	93	-
Power Pack	CNP 168	2	100	100%	0	0	103	-
Crane lorry, mobile	CNP 145	1	105	30%	0	0	100	-
Poker, vibrator, hand-held	CNP 173	2	102	30%	0	0	-	100
Air Compressor	CNP 002	3	102	30%	0	-10	-	92
Piling Rig	CNP 167	2	114	70%	0	-10	-	105
Concrete lorry mixer	BS D6/33	2	96	30%	0	0	-	94
					Overall Noise Level, dB(A)		**108**	**114**
					Maximum, dB(A) [1]:		**114**	

(f) Excavation

(06/2017 - 05/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
In Shaft								
Excavator	EPD-02341	3	105	60%	-10	0	98	-
Excavator	EPD-02341	6	105	60%	-10	0	-	101
Breaker, excavator mounted (hydraulic)	CNP 028	1	122	50%	-10	0	-	109
Breaker, excavator mounted (hydraulic)	CNP 028	2	122	50%	-10	0	112	-
Rock Drill	[2]	3	108	50%	-10	0	-	100
Welding Set	CNP 107	3	100	30%	-10	0	-	90
Water Pump, submersible (electric)	CNP 283	2	85	100%	-10	0	-	78
At Surface								
Crawler crane, mobile	EPD-00467	2	102	60%	0	0		103
Crawler crane, mobile	EPD-00467	1	102	60%	0	0	100	-
Ventilation Fans	CNP 241	1	108	100%	0	0	108	108
Dump Truck	CNP 068	1	105	80%	0	0	104	104
Air compressor	CNP 002	3	102	100%	0	0	107	107
Water Pump (electric)	CNP 281	1	88	80%	0	0	87	87
					Overall Noise Level, dB(A)		**115**	**114**
					Maximum, dB(A) [1]:		**115**	

(g) Tunnel Box Structure Construction

(06/2018 - 02/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
In Shaft							
Poker, vibrator, hand-held	CNP 173	3	102	50%	-10	0	94
Bar bender and cutter (electric)	CNP 021	2	90	50%	-10	0	80
Water Pump, submersible (electric)	CNP 283	2	85	100%	-10	0	78
Compactor, vibratory	CNP 050	1	105	50%	-10	0	92
At Surface							
Concrete lorry mixer	BS D6/33	2	96	50%	0	0	96
Crawler crane, mobile	EPD-00467	2	102	60%	0	0	103
Crawler crane, mobile	EPD-00467	1	102	60%	0	0	100
Ventilation Fans	CNP 241	2	108	100%	0	0	111
Air compressor	CNP 002	1	102	100%	0	-10	92
Water Pump (electric)	CNP 281	1	88	80%	0	0	87
					Overall Noise Level, dB(A)		**112**

(h) Backfilling and Superstructure

Stage 1 (02/2019 - 02/2020)
Stage 2 (03/2019 - 08/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
In Shaft							
Excavator	EPD-02341	4	105	100%	-10	0	101
Water Pump, submersible (electric)	CNP 283	1	85	100%	-10	0	75
At Surface							
Crawler crane, mobile	EPD-00467	1	102	30%	0	0	97
Crawler crane, mobile	EPD-00467	1	102	30%	0	0	97
Ventilation Fans	CNP 241	1	108	60%	0	0	106
Concrete Lorry mixer	BS D6/33	1	96	50%	0	0	93
Water Pump (electric)	CNP 281	1	88	40%	0	0	84
Concrete Pump	CNP 047	1	109	100%	0	0	109
Dump Truck	CNP 068	2	105	60%	0	-5	101
					Overall Noise Level, dB(A)		**112**

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Barging Point at Wan Chai Ex-PCWA

Construction/Set up (09/2016 - 07/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Crawler crane, mobile	EPD-00467	1	102	100%	0	0	102
Generator	CNP 103	2	95	100%	0	0	98
Crane Lorry	CNP 145	1	105	30%	0	0	100
Poker, vibrator, hand-held	CNP 173	2	102	30%	0	0	100
Concrete lorry mixer	BS D6/33	1	96	60%	0	0	94
						Overall Noise Level, dB(A)	**106**

Spoil Disposal (08/2017 - 12/2020)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Barges	CNP 061	1	104	30%	0	0	99
Truck	CNP 142	9	105	60%	0	0	112
Generator	CNP 103	1	95	100%	0	0	95
Excavator	EPD-02341	1	105	30%	0	0	100
						Overall Noise Level, dB(A)	**113**

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Zone 1 - Wan Chai PTI

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Site clearance, Site Hoarding Erection and utility diversion (06/2015 - 07/2015)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Excavator	EPD-02341	2	105	100%	0	0	108
Dump truck with Grab	CNP 068	1	105	100%	0	0	105
Generator	CNP 103	2	95	100%	0	0	98
Air compressor	CNP 002	2	102	100%	0	0	105
Hand held pneumatic breaker	CNP 024	2	108	100%	0	-5	106
Welding Set	CNP 107	2	100	100%	0	0	103
Mini backhoe	CNP 082	1	94	100%	0	0	94
						Overall Noise Level, dB(A)	**113**

Demolition of existing Wan Chai Ferry Pier footbridge

Stage 1 (06/2015 - 06/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Concrete saw	CNP 203	1	115	80%	0	-10	-	104
Air compressor	CNP 002	1	102	100%	0	-10	-	92
Hand held pneumatic breaker	CNP 024	1	108	80%	0	-5	-	102
Dump truck with Grab	CNP 068	1	105	80%	0	0	104	-
Welding Set	CNP 107	2	100	80%	0	0	-	102
Crane, mobile	EPD-01239	1	109	75%	0	0	108	-
						Overall Noise Level, dB(A)	**109**	**108**
						Maximum, dB(A) [1]:	**109**	

Stage 2 (01/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Concrete saw	CNP 203	1	115	55%	0	0	112
Air compressor	CNP 002	1	102	100%	0	0	102
Hand held pneumatic breaker	CNP 024	1	108	100%	0	-5	103
Dump truck with Grab	CNP 068	1	105	100%	0	0	105
Welding Set	CNP 107	2	100	100%	0	0	103
Crane, mobile	EPD-01239	1	109	100%	0	0	109
						Overall Noise Level, dB(A)	**115**

Construction of temporary Wan Chai Ferry Pier footbridge (09/2015 - 12/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding Set	CNP 107	2	100	100%	0	0	103	-
Piling rig - H piles	CNP 167	1	114	100%	0	-10	104	-
Concrete vibrating poker	CNP 173	2	102	70%	0	0	103	-
Concrete mixing truck	BS D6/33	1	96	100%	0	0	-	96
Excavator	EPD-02341	1	105	100%	0	0	-	105
Crane, mobile	EPD-01239	1	109	80%	0	-5	-	103
						Overall Noise Level, dB(A)	**108**	**107**
						Maximum, dB(A) [1]:	**108**	

Construction of Permanent Wan Chai Ferry Pier footbridge (Superstructure) (08/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Welding Set	CNP 107	2	100	100%	0	0	103
Crane, mobile	EPD-01239	1	109	100%	0	0	109
						Overall Noise Level, dB(A)	**110**

Demolition of Temporary Wan Chai Ferry Pier footbridge (09/2019 - 12/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Concrete saw	CNP 203	1	115	100%	0	0	115
Air compressor	CNP 002	1	102	100%	0	0	102
Hand held pneumatic breaker	CNP 024	1	108	100%	0	-5	103
Dump truck with Grab	CNP 068	1	105	100%	0	0	105
Welding Set	CNP 107	2	100	100%	0	0	103
Crane, mobile	EPD-01239	1	109	100%	0	0	109
						Overall Noise Level, dB(A)	**117**

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Zone 1 - Wan Chai PTI

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Piling works (PPW and H-piles)

Stage 1 (TTM Stage 2) (07/2015 - 04/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	1	95	100%	0	-10	85	-
Welding set	CNP 107	2	100	55%	0	0	100	-
Welding set	CNP 107	2	100	55%	0	0	-	100
Piling rig	CNP 167	3	114	60%	0	-10	107	-
Piling rig	CNP 167	3	114	60%	0	-10	-	107
Crawler crane	EPD-00467	2	102	60%	0	0	103	
Crawler crane	EPD-00467	2	102	60%	0	0	-	103
Grout mixer	CNP 105	2	90	100%	0	0	-	93
Air compressor	CNP 002	9	102	60%	0	-10	99	-
Air compressor	CNP 002	9	102	60%	0	-10	-	99
						Overall Noise Level, dB(A)	**109**	**109**
						Maximum, dB(A) [1]:	**109**	

Stage 2 (TTM Stage 3a & 3b) (06/2016 - 10/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	1	95	100%	0	-10	85	-
Welding set	CNP 107	1	100	100%	0	0	-	100
Piling rig	CNP 167	2	114	80%	0	-10	-	106
Crawler crane	EPD-00467	1	102	100%	0	0	102	-
Grout mixer	CNP 105	1	90	100%	0	0	90	-
Air compressor	CNP 002	6	102	80%	0	-10	-	99
						Overall Noise Level, dB(A)	**102**	**108**
						Maximum, dB(A) [1]:	**108**	

Stage 3 (TTM Stage 3C) (12/2016 - 04/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Generator	CNP 103	1	95	100%	0	-10	85
Welding set	CNP 107	1	100	100%	0	0	100
Piling rig	CNP 167	2	114	100%	0	-10	107
Crawler crane	EPD-00467	1	102	100%	0	0	102
Grout mixer	CNP 105	1	90	100%	0	0	90
Air compressor	CNP 002	4	102	100%	0	-10	98
						Overall Noise Level, dB(A)	**109**

Diaphragm wall construction

Stage 1 (TTM Stage 2) (08/2015 - 01/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	5	95	100%	0	0	102	-
Dump truck	CNP 068	1	105	100%	0	-5	-	100
Hydraulic extractor	CNP 163	3	90	70%	0	0	93	-
Power Pack	CNP 168	3	100	70%	0	0	103	-
Crawler crane with grab	EPD-00467	4	102	70%	0	0	-	106
Desander	CNP 162	3	105	100%	0	-10	100	-
Filter press	CNP 162	1	105	100%	0	-10	-	95
Bentonite mixer	CNP 045	2	96	100%	0	0	-	99
Crane lorry	CNP 145	1	105	80%	0	0	-	104
Concrete mixing truck	BS D6/33	3	96	40%	0	0	-	97
						Overall Noise Level, dB(A)	**107**	**110**
						Maximum, dB(A) [1]:	**110**	

Stage 2 (TTM Stage 3a/3b/3c & 5) (02/2016 - 03/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	4	95	100%	0	-10	91	91
Dump truck	CNP 068	1	105	80%	0	0	104	-
Hydraulic extractor	CNP 163	3	90	70%	0	0	-	93
Power Pack	CNP 168	3	100	70%	0	0	-	103
Crawler crane with grab	EPD-00467	3	102	80%	0	0	106	-
Desander	CNP 162	4	105	100%	0	-10	-	101
Filter press	CNP 162	1	105	100%	0	-10	-	95
Bentonite mixer	CNP 045	2	96	100%	0	0	-	99
Crane lorry	CNP 145	1	105	100%	0	0	-	105
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96	-
						Overall Noise Level, dB(A)	**108**	**109**
						Maximum, dB(A) [1]:	**109**	

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Zone 1 - Wan Chai PTI

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Excavation & ELS installation
Underground (partially covered by decking)

(03/2017 - 05/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Rock drill	[2]	1	108	60%	0	-5	101	-
Rock drill	[2]	1	108	60%	0	-5	-	101
Breaker, excavator mounted (hydraulic)	CNP 028	3	122	50%	0	-10	114	-
Breaker, excavator mounted (hydraulic)	CNP 028	3	122	50%	0	-10	-	114
Excavator	EPD-02341	1	105	50%	0	0	102	-
Excavator	EPD-02341	1	105	50%	0	0	-	102
Welding set	CNP 107	2	100	80%	0	0	-	102
Water Pump, submersible (electric)	CNP 283	4	85	80%	0	0	-	90
Ventilation fans	CNP 241	2	108	50%	0	0	108	-
Ventilation fans	CNP 241	2	108	50%	0	0	-	108
At surface								
Crawler crane	EPD-00467	4	102	50%	0	0	105	-
Crane lorry	CNP 145	1	105	60%	0	0	103	-
Water pump (electric)	CNP 281	1	88	70%	0	0	86	-
Dump truck	CNP 068	2	105	60%	0	-5	101	-
Excavator	EPD-02341	3	105	70%	0	-5	-	103
Welding set	CNP 107	1	100	100%	0	0	-	100
Power pack for handheld tools	CNP 168	1	100	100%	0	0	100	-
Concrete pump	CNP 047	1	109	60%	0	-10	97	-
Concrete mixing truck	BS D6/33	1	96	60%	0	0	94	-
						Overall Noise Level, dB(A)	**116**	**116**
						Maximum, dB(A) [1]:	**116**	

Construction of Internal Structure of Box Station
Underground (partially covered by decking)

(06/2018 - 02/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	2	100	100%	0	0	103	-
Ventilation fans	CNP 241	2	108	100%	0	0	111	-
Ventilation fans	CNP 241	2	108	100%	0	0	-	111
Power pack for handheld tools	CNP 168	1	100	100%	0	0	100	-
Vibrating poker - handheld	CNP 173	3	102	80%	0	0	-	106
At surface								
Crawler crane	EPD-00467	3	102	50%	0	0	-	104
Crane lorry	CNP 145	1	105	80%	0	0	-	104
Water pump (electric)	CNP 281	1	88	100%	0	0	88	-
Dump truck	CNP 068	1	105	50%	0	-5	-	97
Excavator	EPD-02341	1	105	60%	0	-5	-	98
Welding set	CNP 107	1	100	100%	0	0	-	100
Concrete pump	CNP 047	1	109	80%	0	0	108	-
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96	-
						Overall Noise Level, dB(A)	**114**	**114**
						Maximum, dB(A) [1]:	**114**	

Construction of Entrances and Structure
Above ground

(03/2019 - 08/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Mobile crane	EPD-01239	2	109	50%	0	-5	104
Crane lorry	CNP 145	1	105	100%	0	0	105
Dump truck	CNP 068	1	105	60%	0	-5	98
Welding set	CNP 107	1	100	100%	0	0	100
Concrete pump	CNP 047	1	109	50%	0	0	106
Concrete mixing truck	BS D6/33	1	96	50%	0	0	93
Air compressor	CNP 002	1	102	50%	0	0	99
Vibrating poker - handheld	CNP 173	3	102	50%	0	0	104
						Overall Noise Level, dB(A)	**112**

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Zone 2 - Harbour Road Sports Centre

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Demolition of Harbour Road Sports Centre (HRSC) (06/2017 - 09/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Excavator	EPD-02341	2	105	100%	0	-5	103	-
Dump truck with Grab	CNP 068	1	105	100%	0	0	-	105
Air compressor	CNP 002	1	102	100%	0	-10	-	92
Hand held pneumatic breaker	CNP 024	3	108	60%	0	-5	106	-
Welding Set	CNP 107	1	100	100%	0	0	-	100
						Overall Noise Level, dB(A)	**107**	**106**
						Maximum, dB(A) [1]:	**107**	

Site Hoarding Erection & Pile Removal (10/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Excavator	EPD-02341	2	105	100%	0	-5	-	103
Dump truck with Grab	CNP 068	1	105	100%	0	0	105	-
Crane lorry	CNP 145	1	105	100%	0	0	-	105
Air compressor	CNP 002	1	102	60%	0	-10	90	-
Hand held pneumatic breaker	CNP 024	1	108	50%	0	-5	-	100
Welding Set	CNP 107	1	100	100%	0	0	-	100
Piling, large diameter bored, oscillator	CNP 165	1	115	100%	0	-10	105	-
Crawler crane	EPD-00467	1	102	100%	0	0	102	-
						Overall Noise Level, dB(A)	**109**	**109**
						Maximum, dB(A) [1]:	**109**	

Piling works (PPW and H-piles) (11/2017 - 02/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	4	100	80%	0	0	-	105
Piling rig	CNP 167	4	114	80%	0	-10	109	-
Crawler crane	EPD-00467	3	102	80%	0	0	-	106
Grout mixer	CNP 105	2	90	100%	0	0	-	93
Air compressor	CNP 002	16	102	80%	0	-10	103	-
						Overall Noise Level, dB(A)	**110**	**109**
						Maximum, dB(A) [1]:	**110**	

Excavation & ELS installation (C&C Method)
Underground (partially covered by decking) (03/2018 - 02/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Rock drill	[2]	2	108	50%	0	-5	103	-
Breaker, excavator mounted (hydraulic)	CNP 028	2	122	50%	-10	0	-	112
Breaker, excavator mounted (hydraulic)	CNP 028	2	122	50%	-10	0	112	
Welding set	CNP 107	2	100	60%	0	0	101	-
Water Pump, submersible (electric)	CNP 283	2	85	100%	0	0	-	88
Ventilation fans	CNP 241	1	108	50%	0	0	-	105
Ventilation fans	CNP 241	1	108	50%	0	0	105	-
At surface								
Crawler crane	EPD-00467	2	102	50%	0	0	102	-
Crane lorry	CNP 145	1	105	60%	0	0	-	103
Dump truck	CNP 068	1	105	50%	0	-5	-	97
Excavator	EPD-02341	1	105	50%	0	-5	-	97
Concrete mixing truck	BS D6/33	1	96	50%	0	0	-	93
						Overall Noise Level, dB(A)	**114**	**113**
						Maximum, dB(A) [1]:	**114**	

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Zone 2 - Harbour Road Sports Centre

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Construction of Internal Structure of Box Station
Underground (partially covered by decking) (03/2019 - 11/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	2	100	100%	0	0	-	103
Ventilation fans	CNP 241	2	108	60%	0	0	109	-
Power pack for handheld tools	CNP 168	1	100	100%	0	0	-	100
Vibrating poker - handheld	CNP 173	3	102	60%	0	0	105	-
At surface								
Crawler crane	EPD-00467	2	102	50%	0	0	-	102
Crane lorry	CNP 145	1	105	80%	0	0	-	104
Dump truck	CNP 068	1	105	100%	0	-5	-	100
Excavator	EPD-02341	1	105	100%	0	0	105	-
Welding set	CNP 107	1	100	100%	0	0	-	100
Concrete pump	CNP 047	1	109	80%	0	0	-	108
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96	-
						Overall Noise Level, dB(A)	**111**	**112**
						Maximum, dB(A) [1]:	**112**	

Construction of Entrances and Ground structure
Above ground (12/2019 - 02/2020)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Mobile crane	EPD-01239	1	109	100%	0	-5	104
Crane lorry	CNP 145	1	105	100%	0	0	105
Dump truck	CNP 068	1	105	100%	0	-5	100
Welding set	CNP 107	1	100	100%	0	0	100
Concrete pump	CNP 047	1	109	100%	0	0	109
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96
Air compressor	CNP 002	1	102	100%	0	0	102
Vibrating poker - handheld	CNP 173	3	102	100%	0	0	107
					Overall Noise Level, dB(A)		**114**

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Zone 3 - Wan Chai Swimming Pool

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Demolition of Wan Chai Swimming Pool (12/2015 - 03/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Concrete Saw	CNP 203	2	115	50%	0	-10	-	105
Excavator	EPD-02341	1	105	50%	0	-5	97	-
Dump truck	CNP 068	1	105	30%	0	0	100	-
						Overall Noise Level, dB(A)	**102**	**105**
						Maximum, dB(A) [1]:	**105**	

Site Hoarding Erection & Pile Removal (08/2016 - 09/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Excavator	EPD-02341	2	105	50%	0	-5	-	100
Dump truck with Grab	CNP 068	1	105	40%	0	0	-	101
Crane lorry	CNP 145	1	105	80%	0	0	-	104
Air compressor	CNP 002	1	102	100%	0	-10	92	92
Hand held pneumatic breaker	CNP 024	1	108	70%	0	-5	-	-
Welding Set	CNP 107	1	100	100%	0	-10	90	-
Piling, large diameter bored, oscillator	CNP 165	1	115	100%	0	-10	105	-
Crawler crane	EPD-00467	1	102	100%	0	0	102	-
						Overall Noise Level, dB(A)	**107**	**107**
						Maximum, dB(A) [1]:	**107**	

Piling works (H-piles) (03/2016 - 04/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	2	100	100%	0	0	103	-
Piling rig	CNP 167	2	114	100%	0	-10	-	107
Crawler crane	EPD-00467	2	102	100%	0	0	105	-
Grout mixer	CNP 105	1	90	100%	0	0	90	-
Air compressor	CNP 002	6	102	100%	0	-10	-	100
						Overall Noise Level, dB(A)	**107**	**108**
						Maximum, dB(A) [1]:	**108**	

Diaphragm wall construction (05/2016 - 07/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Hydraulic extractor	CNP 163	2	90	100%	0	0	93
Power Pack	CNP 168	2	100	65%	0	0	101
Crawler crane with grab	EPD-00467	3	102	55%	0	0	104
Concrete mixing truck	BS D6/33	1	96	80%	0	0	95
						Overall Noise Level, dB(A)	**106**

Excavation & ELS installation
Underground (partially covered by decking) (08/2017 - 08/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Rock drill	[2]	1	108	60%	0	-5	-	101
Breaker, excavator mounted (hydraulic)	CNP 028	2	122	50%	0	-10	112	-
Breaker, excavator mounted (hydraulic)	CNP 028	2	122	50%	0	-10	-	112
Welding set	CNP 107	2	100	60%	0	0	101	-
Water Pump, submersible (electric)	CNP 283	2	85	100%	0	0	88	-
Ventilation fans	CNP 241	2	108	60%	0	0		109
At surface								
Crawler crane	EPD-00467	2	102	40%	0	0	101	-
Crane lorry	CNP 145	1	105	50%	0	0	102	-
Dump truck	CNP 068	1	105	40%	0	-5	96	-
Excavator	EPD-02341	1	105	50%	0	-5	97	-
Concrete mixing truck	BS D6/33	1	96	60%	0	0	94	-
						Overall Noise Level, dB(A)	**113**	**114**
						Maximum, dB(A) [1]:	**114**	

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Zone 3 - Wan Chai Swimming Pool

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Construction of Internal Structure of Box Station
Underground (partially covered by decking)

(09/2018 - 03/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	2	100	100%	0	0	103	-
Ventilation fans	CNP 241	2	108	80%	0	0	-	110
Power pack for handheld tools	CNP 168	1	100	100%	0	0	100	-
Vibrating poker - handheld	CNP 173	3	102	80%	0	0	106	-
At surface								
Crawler crane	EPD-00467	2	102	50%	0	0	-	102
Crane lorry	CNP 145	1	105	70%	0	0	103	-
Dump truck	CNP 068	1	105	70%	0	-5	98	-
Excavator	EPD-02341	1	105	100%	0	-5	100	-
Welding set	CNP 107	1	100	100%	0	0	100	-
Concrete pump	CNP 047	1	109	80%	0	-10	-	98
Concrete mixing truck	BS D6/33	1	96	100%	0	0	-	96
						Overall Noise Level, dB(A)	**111**	**111**
						Maximum, dB(A) [1]:	**111**	

Construction of Vent Shaft and Ground structure
Above ground

(04/2019 - 09/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Mobile crane	EPD-01239	1	109	50%	0	0	106	106
Crane lorry	CNP 145	1	105	80%	0	0	104	-
Dump truck	CNP 068	1	105	100%	0	0	-	105
Welding set	CNP 107	1	100	100%	0	0	100	-
Concrete pump	CNP 047	1	109	80%	0	0	108	-
Concrete mixing truck	BS D6/33	1	96	100%	0	0	-	96
Vibrating poker - handheld	CNP 173	3	102	100%	0	0	-	107
						Overall Noise Level, dB(A)	**111**	**111**
						Maximum, dB(A) [1]:	**111**	

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Zone 4 - Wan Chai Sports Ground

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Piling works (H-piles) - Wan Chai Sports Ground (WCSG) (08/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	1	95	100%	0	0	-	95
Welding set	CNP 107	1	100	100%	0	0	-	100
Piling rig	CNP 167	1	114	100%	0	0	114	-
Crawler crane	EPD-00467	1	102	100%	0	0	-	102
Grout mixer	CNP 105	1	90	100%	0	0	-	90
Air compressor	CNP 002	2	102	100%	0	0	105	-
						Overall Noise Level, dB(A)	**115**	**105**
						Maximum, dB(A) [2]:	**115**	

Diaphragm wall construction - Phase 1 WCSG (12/2015 - 07/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	1	95	100%	0	0	-	95
Dump truck	CNP 068	1	105	50%	0	0	-	102
Hydraulic extractor	CNP 163	1	90	80%	0	0	-	89
Power Pack	CNP 168	1	100	80%	0	0	99	-
Crawler crane with grab	EPD-00467	1	102	100%	0	0	-	102
Desander	CNP 162	1	105	100%	0	-10	-	95
Bentonite mixer	CNP 045	1	96	100%	0	0	96	-
Crane lorry	CNP 145	1	105	70%	0	0	103	-
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96	-
						Overall Noise Level, dB(A)	**106**	**106**
						Maximum, dB(A) [2]:	**106**	

Piling works (PPW and H-piles) - Tonnochy Road (12/2016 - 06/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Welding set	CNP 107	2	100	100%	0	0	103
Piling rig	CNP 167	4	114	55%	0	-10	107
Crawler crane	EPD-00467	2	102	55%	0	0	102
Grout mixer	CNP 105	2	90	100%	0	0	93
Air compressor	CNP 002	8	102	100%	0	-10	101
						Overall Noise Level, dB(A)	**110**

Excavation & ELS installation

Underground (no noise cover) (06/2017 - 07/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Rock drill	[2]	1	108	80%	0	-5	102	102
Breaker, excavator mounted (hydraulic)	CNP 028	1	122	60%	0	-10	-	110
Welding set	CNP 107	2	100	80%	0	0	102	102
Water Pump, submersible (electric)	CNP 283	1	85	80%	0	0	84	84
Ventilation fans	CNP 241	3	108	80%	0	0	112	-
						Overall Noise Level, dB(A)	**113**	**111**
						Maximum, dB(A) [2]:	**113**	

Underground (with full noise cover over Tonnochy Road) (08/2018 - 04/2019)

Rock drill	[2]	1	108	70%	-10	0	96
Excavator	EPD-02341	4	105	100%	-10	0	101
Welding set	CNP 107	2	100	100%	-10	0	93
Water Pump, submersible (electric)	CNP 283	1	85	100%	-10	0	75
Ventilation fans	CNP 241	3	108	100%	-10	0	103
						Overall Noise Level, dB(A)	**106**

At surface (08/2018 - 04/2019)

Crawler crane	EPD-00467	1	102	50%	0	0	99
Crane lorry	CNP 145	1	105	100%	0	0	105
Water pump (electric)	CNP 281	1	88	100%	0	0	88
Dump truck	CNP 068	1	105	100%	0	-5	100
Excavator	EPD-02341	1	105	100%	0	-5	100
Welding set	CNP 107	1	100	100%	0	0	100
Generator	CNP 103	1	95	100%	0	-10	85
Concrete pump	CNP 047	1	109	100%	0	0	109
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96
						Overall Noise Level, dB(A)	**112**

Appendix B1 - Construction Plant Inventory for C&C Method at Zone 2

Zone 4 - Wan Chai Sports Ground

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Construction of Internal Structure of Box Station
Underground (with full noise cover over Tonnochy Road) (10/2018 - 04/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	2	100	100%	-10	0	93	-
Water Pump, submersible (electric)	CNP 283	1	85	100%	-10	0	-	75
Excavator	EPD-02341	2	105	100%	-10	0	98	-
Ventilation fans	CNP 241	4	108	100%	-10	0	104	-
Power pack for handheld tools	CNP 168	1	100	100%	-10	0	90	
Vibrating poker - handheld	CNP 173	3	102	100%	-10	0	-	97
At surface								
Crawler crane	EPD-00467	1	102	100%	0	0	-	102
Crane lorry	CNP 145	1	105	100%	0	0	105	-
Water pump (electric)	CNP 281	1	88	100%	0	0	-	88
Dump truck	CNP 068	1	105	100%	0	-5	-	100
Excavator	EPD-02341	1	105	100%	0	-5	-	100
Welding set	CNP 107	1	100	100%	0	0	-	100
Concrete pump	CNP 047	1	109	100%	0	-10	-	99
Concrete mixing truck	BS D6/33	1	96	100%	0	0	-	96
Generator	CNP 103	1	95	100%	0	-10	-	85
						Overall Noise Level, dB(A)	**108**	**108**
						Maximum, dB(A) [2]:	**108**	

Reprovision of WCSG grandstand (05/2019 - 09/2020)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Mobile crane	EPD-01239	1	109	100%	0	0	109
Crane lorry	CNP 145	1	105	100%	0	0	105
Dump truck	CNP 068	1	105	100%	0	0	105
Excavator	EPD-02341	1	105	100%	0	0	105
Welding set	CNP 107	1	100	100%	0	0	100
Concrete pump	CNP 047	1	109	100%	0	0	109
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96
Air compressor	CNP 002	1	102	100%	0	0	102
Generator	CNP 103	1	95	100%	0	0	95
Vibrating poker - handheld	CNP 173	3	102	100%	0	0	107
						Overall Noise Level, dB(A)	**115**

Appendix B2
Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Package: 07 EXH
EXH Structure

(a) Site Hoarding Erection (06/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Excavator	EPD-02341	1	105	100%	0	0	105
Drill, hand-held (electric)	CNP 065	1	98	100%	0	0	98
Generator	CNP 103	1	95	100%	0	0	95
Lorry with crane/grab	CNP 145	1	105	50%	0	0	102
Welding Set	CNP 107	2	100	30%	0	0	98
						Overall Noise Level, dB(A)	**108**

(b) Roof Slab Construction (01/2018 - 02/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Above Ground							
Generator	CNP 103	1	95	80%	0	0	94
Dump truck	CNP 068	1	105	30%	0	0	100
Crane lorry, mobile	CNP 145	1	105	50%	0	0	102
Poker, vibrator, hand-held	CNP 173	3	102	80%	0	0	106
Air Compressor	CNP 002	1	102	80%	0	0	101
Concrete lorry mixer	BS D6/33	1	96	80%	0	0	95
Concrete pump	CNP 047	1	109	80%	0	0	108
						Overall Noise Level, dB(A)	**112**

(c) Excavation (05/2018 - 10/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Underground (covered by deck)							
Excavator	EPD-02341	3	105	60%	-10	0	98
Generator	CNP 103	2	95	80%	-10	0	87
Rock drill, crawler mounted (pneumatic)	CNP 181	1	128	30%	-10	0	113
Ventilation fans	CNP 241	2	108	70%	-10	0	99
Power pack for hand-held items of PME	CNP 168	1	100	30%	-10	0	85
Dump truck	CNP 068	2	105	50%	-10	0	95
Water pump (electric)	CNP 281	2	88	80%	-10	0	80
Welder/ generator, portable	CNP 107	2	100	30%	-10	0	88
						Overall Noise Level, dB(A)	**113**

(d) Construction of Internal Structures of Box Station (11/2018 - 04/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Underground							
Generator	CNP 103	2	95	80%	0	0	97
Ventilation fans	CNP 241	2	108	70%	0	0	109
Power pack for hand-held items of PME	CNP 168	1	100	30%	0	0	95
Water pump (electric)	CNP 281	2	88	80%	0	0	90
Welder/ generator, portable	CNP 107	1	100	30%	0	0	95
Poker, vibrator, hand-held	CNP 173	3	102	100%	0	0	107
						Overall Noise Level, dB(A)	**112**

(e) Construction of Entrance and Vent Shafts (01/2019 - 02/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Above Ground							
Generator	CNP 103	1	95	80%	0	0	94
Crawler crane, mobile	EPD-00467	1	102	100%	0	0	102
Dump truck	CNP 068	1	105	30%	0	0	100
Crane lorry, mobile	CNP 145	1	105	30%	0	0	100
Poker, vibrator, hand-held	CNP 173	2	102	80%	0	0	104
Air Compressor	CNP 002	1	102	80%	0	0	101
Concrete lorry mixer	BS D6/33	2	96	80%	0	0	98
Concrete pump	CNP 047	1	109	80%	0	0	108
						Overall Noise Level, dB(A)	**112**

(f) Construction of Station Box Roof Slab (03/2019 - 04/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Above Ground							
Generator	CNP 103	1	95	80%	0	0	94
Crawler crane, mobile	EPD-00467	1	102	100%	0	0	102
Dump truck	CNP 068	1	105	30%	0	0	100
Crane lorry, mobile	CNP 145	1	105	30%	0	0	100
Poker, vibrator, hand-held	CNP 173	3	102	80%	0	0	106
Air Compressor	CNP 002	1	102	80%	0	0	101
Concrete lorry mixer	BS D6/33	2	96	80%	0	0	98
Concrete pump	CNP 047	1	109	80%	0	0	108
						Overall Noise Level, dB(A)	**112**

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Package: 07 EXH
EXH Structure

(h) Utility diversion (07/2016 - 10/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Mini Backhoe	CNP 082	1	94	50%	0	0	91
Dump Truck	CNP 068	1	105	30%	0	0	100
						Overall Noise Level, dB(A)	**100**

(i) Pipe Pile Construction

Stage 1 (10/2016 - 12/2016)
Stage 2 (04/2017 - 08/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Piling Rig	CNP 167	2	114	100%	0	-10	107
Crane Lorry	CNP 145	1	105	100%	0	0	105
Excavator	EPD-02341	2	105	30%	0	0	103
Generator	CNP 103	2	95	30%	0	0	93
Crawler crane, mobile	EPD-00467	2	102	60%	0	0	103
						Overall Noise Level, dB(A)	**111**

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Package: 06 EXH to Shaft
Tunnel at West to EXH

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

(a) Site Formation

Areas A & B (06/2015)
Area A (09/2015)
Areas C - Stage 1 (01/2016)
Areas C - Stage 2 (07/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Excavator	EPD-02341	1	105	100%	0	0	-	105
Dump Truck with Grab	CNP 068	1	105	30%	0	0	-	100
Breaker, excavator mounted (hydraulic)	CNP 028	1	122	50%	0	0	-	119
Air compressor	CNP 002	1	102	100%	0	0	-	102
Pneumatic Breaker	CNP 027	1	122	60%	0	0	120	-
Generator	CNP 103	1	95	100%	0	0	-	95
Water Pump (electric)	CNP 281	1	88	30%	0	0	-	83
Saw, Concrete	CNP 203	1	115	30%	0	0	-	110
						Overall Noise Level, dB(A)	**120**	**120**
						Maximum, dB(A) [1]:	**120**	

(b) Site Hoarding Erection

(06/2015)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Excavator	EPD-02341	1	105	100%	0	0	105
Drill, hand-held (electric)	CNP 065	1	98	100%	0	0	98
Generator	CNP 103	1	95	100%	0	0	95
Lorry with crane/grab	CNP 145	1	105	50%	0	0	102
Welding Set	CNP 107	2	100	30%	0	0	98
						Overall Noise Level, dB(A)	**108**

(c) Excavation inside SCL tunnels protection works

(06/2016 - 10/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
In Shaft							
Excavator	EPD-02341	9	105	100%	-10	0	105
Breaker, excavator mounted (hydraulic)	CNP 028	3	122	50%	-10	0	114
Rock Drill	[2]	3	108	50%	-10	0	100
Welding Set	CNP 107	1	100	30%	-10	0	85
Water Pump, submersible (electric)	CNP 283	2	85	100%	-10	0	78
At Surface						0	
Crawler crane, mobile	EPD-00467	1	102	50%	0	0	99
Crawler crane, mobile	EPD-00467	2	102	50%	0	0	102
Ventilation Fans	CNP 241	1	108	100%	0	0	108
Dump Truck	CNP 068	1	105	80%	0	-5	99
Air compressor	CNP 002	3	102	100%	0	0	107
Water Pump (electric)	CNP 281	1	88	80%	0	0	87
						Overall Noise Level, dB(A)	**116**

(d) Tunnel Box Structure Construction

Area A l/2017 - 11/2018)
Area B l/2017 - 12/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
In Shaft							
Poker, vibrator, hand-held	CNP 173	3	102	50%	-10	0	94
Bar bender and cutter (electric)	CNP 021	1	90	50%	-10	0	77
Water Pump, submersible (electric)	CNP 283	2	85	100%	-10	0	78
Compactor, vibratory	CNP 050	1	105	50%	-10	0	92
At Surface							
Concrete lorry mixer	BS D6/33	2	96	50%	0	0	96
Crawler crane, mobile	EPD-00467	1	102	60%	0	0	100
Crawler crane, mobile	EPD-00467	2	102	60%	0	0	103
Ventilation Fans	CNP 241	2	108	100%	0	0	111
Air compressor	CNP 002	1	102	100%	0	0	102
Concrete Pump	CNP 047	2	109	100%	0	0	112
Water Pump (electric)	CNP 281	1	88	80%	0	0	87
						Overall Noise Level, dB(A)	**115**

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Package: 06 EXH to Shaft
Tunnel at West to EXH

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

(e) Diaphragm Wall Construction

Area A (10/2015 - 04/2016)
Area C (03/2016 - 05/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	3	95	30%	0	0	95	-
Dump truck	CNP 068	2	105	30%	0	0	103	-
Piling, diaphragm wall, bentonite filtering plant	CNP 162	1	105	40%	0	0	101	-
Crane (Grab & Service)	CNP 048	2	112	70%	0	0	-	113
Hydraulic extractor	CNP 163	2	90	100%	0	0	93	-
Power Pack	CNP 168	2	100	100%	0	0	103	-
Crane lorry, mobile	CNP 145	1	105	30%	0	0	100	-
Poker, vibrator, hand-held	CNP 173	2	102	30%	0	0	-	100
Air Compressor	CNP 002	3	102	30%	0	-10	-	92
Piling Rig	CNP 167	2	114	70%	0	-10	-	105
Concrete lorry mixer	BS D6/33	2	96	30%	0	0	-	94
						Overall Noise Level, dB(A)	**108**	**114**
						Maximum, dB(A) [1]:	**114**	

(f) Excavation

(06/2017 - 05/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
In Shaft								
Excavator	EPD-02341	3	105	60%	-10	0	98	-
Excavator	EPD-02341	6	105	60%	-10	0	-	101
Breaker, excavator mounted (hydraulic)	CNP 028	1	122	50%	-10	0	-	109
Breaker, excavator mounted (hydraulic)	CNP 028	2	122	50%	-10	0	112	-
Rock Drill	[2]	3	108	50%	-10	0	-	100
Welding Set	CNP 107	3	100	30%	-10	0	-	90
Water Pump, submersible (electric)	CNP 283	2	85	100%	-10	0	-	78
At Surface								
Crawler crane, mobile	EPD-00467	2	102	60%	0	0		103
Crawler crane, mobile	EPD-00467	1	102	60%	0	0	100	-
Ventilation Fans	CNP 241	1	108	100%	0	0	108	108
Dump Truck	CNP 068	1	105	80%	0	0	104	104
Air compressor	CNP 002	3	102	100%	0	0	107	107
Water Pump (electric)	CNP 281	1	88	80%	0	0	87	87
						Overall Noise Level, dB(A)	**115**	**114**
						Maximum, dB(A) [1]:	**115**	

(g) Tunnel Box Structure Construction

(06/2018 - 02/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
In Shaft							
Poker, vibrator, hand-held	CNP 173	3	102	50%	-10	0	94
Bar bender and cutter (electric)	CNP 021	2	90	50%	-10	0	80
Water Pump, submersible (electric)	CNP 283	2	85	100%	-10	0	78
Compactor, vibratory	CNP 050	1	105	50%	-10	0	92
At Surface							
Concrete lorry mixer	BS D6/33	2	96	50%	0	0	96
Crawler crane, mobile	EPD-00467	2	102	60%	0	0	103
Crawler crane, mobile	EPD-00467	1	102	60%	0	0	100
Ventilation Fans	CNP 241	2	108	100%	0	0	111
Air compressor	CNP 002	1	102	100%	0	-10	92
Water Pump (electric)	CNP 281	1	88	80%	0	0	87
						Overall Noise Level, dB(A)	**112**

(h) Backfilling and Superstructure

Stage 1 2/2019 - 02/2020)
Stage 2 3/2019 - 08/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
In Shaft							
Excavator	EPD-02341	4	105	100%	-10	0	101
Water Pump, submersible (electric)	CNP 283	1	85	100%	-10	0	75
At Surface							
Crawler crane, mobile	EPD-00467	1	102	30%	0	0	97
Crawler crane, mobile	EPD-00467	1	102	30%	0	0	97
Ventilation Fans	CNP 241	1	108	60%	0	0	106
Concrete Lorry mixer	BS D6/33	1	96	50%	0	0	93
Water Pump (electric)	CNP 281	1	88	40%	0	0	84
Concrete Pump	CNP 047	1	109	100%	0	0	109
Dump Truck	CNP 068	2	105	60%	0	-5	101
						Overall Noise Level, dB(A)	**112**

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Barging Point at Wan Chai Ex-PCWA

Construction/Set up (09/2016 - 07/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Crawler crane, mobile	EPD-00467	1	102	100%	0	0	102
Generator	CNP 103	2	95	100%	0	0	98
Crane Lorry	CNP 145	1	105	30%	0	0	100
Poker, vibrator, hand-held	CNP 173	2	102	30%	0	0	100
Concrete lorry mixer	BS D6/33	1	96	60%	0	0	94
						Overall Noise Level, dB(A)	**106**

Spoil Disposal (08/2017 - 12/2020)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Barges	CNP 061	1	104	30%	0	0	99
Truck	CNP 142	9	105	60%	0	0	112
Generator	CNP 103	1	95	100%	0	0	95
Excavator	EPD-02341	1	105	30%	0	0	100
						Overall Noise Level, dB(A)	**113**

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Zone 1 - Wan Chai PTI

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Site clearance, Site Hoarding Erection and utility diversion (06/2015 - 07/2015)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Excavator	EPD-02341	2	105	100%	0	0	108
Dump truck with Grab	CNP 068	1	105	100%	0	0	105
Generator	CNP 103	2	95	100%	0	0	98
Air compressor	CNP 002	2	102	100%	0	0	105
Hand held pneumatic breaker	CNP 024	2	108	100%	0	-5	106
Welding Set	CNP 107	2	100	100%	0	0	103
Mini backhoe	CNP 082	1	94	100%	0	0	94
						Overall Noise Level, dB(A)	**113**

Demolition of existing Wan Chai Ferry Pier footbridge

Stage 1 (06/2015 - 06/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Concrete saw	CNP 203	1	115	80%	0	-10	-	104
Air compressor	CNP 002	1	102	100%	0	-10	-	92
Hand held pneumatic breaker	CNP 024	1	108	80%	0	-5	-	102
Dump truck with Grab	CNP 068	1	105	80%	0	0	104	-
Welding Set	CNP 107	2	100	80%	0	0	-	102
Crane, mobile	EPD-01239	1	109	75%	0	0	108	-
						Overall Noise Level, dB(A)	**109**	**108**
						Maximum, dB(A) [1]:	**109**	

Stage 2 (01/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Concrete saw	CNP 203	1	115	55%	0	0	112
Air compressor	CNP 002	1	102	100%	0	0	102
Hand held pneumatic breaker	CNP 024	1	108	100%	0	-5	103
Dump truck with Grab	CNP 068	1	105	100%	0	0	105
Welding Set	CNP 107	2	100	100%	0	0	103
Crane, mobile	EPD-01239	1	109	100%	0	0	109
						Overall Noise Level, dB(A)	**115**

Construction of temporary Wan Chai Ferry Pier footbridge (09/2015 - 12/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding Set	CNP 107	2	100	100%	0	0	103	-
Piling rig - H piles	CNP 167	1	114	100%	0	-10	104	-
Concrete vibrating poker	CNP 173	2	102	70%	0	0	103	-
Concrete mixing truck	BS D6/33	1	96	100%	0	0	-	96
Excavator	EPD-02341	1	105	100%	0	0	-	105
Crane, mobile	EPD-01239	1	109	80%	0	-5	-	103
						Overall Noise Level, dB(A)	**108**	**107**
						Maximum, dB(A) [1]:	**108**	

Construction of Permanent Wan Chai Ferry Pier footbridge (Superstructure) (08/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Welding Set	CNP 107	2	100	100%	0	0	103
Crane, mobile	EPD-01239	1	109	100%	0	0	109
						Overall Noise Level, dB(A)	**110**

Demolition of Temporary Wan Chai Ferry Pier footbridge (09/2019 - 12/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Concrete saw	CNP 203	1	115	100%	0	0	115
Air compressor	CNP 002	1	102	100%	0	0	102
Hand held pneumatic breaker	CNP 024	1	108	100%	0	-5	103
Dump truck with Grab	CNP 068	1	105	100%	0	0	105
Welding Set	CNP 107	2	100	100%	0	0	103
Crane, mobile	EPD-01239	1	109	100%	0	0	109
						Overall Noise Level, dB(A)	**117**

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Zone 1 - Wan Chai PTI

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Piling works (PPW and H-piles)

Stage 1 (TTM Stage 2) (07/2015 - 04/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	1	95	100%	0	-10	85	-
Welding set	CNP 107	2	100	55%	0	0	100	-
Welding set	CNP 107	2	100	55%	0	0	-	100
Piling rig	CNP 167	3	114	60%	0	-10	107	-
Piling rig	CNP 167	3	114	60%	0	-10	-	107
Crawler crane	EPD-00467	2	102	60%	0	0	103	
Crawler crane	EPD-00467	2	102	60%	0	0	-	103
Grout mixer	CNP 105	2	90	100%	0	0	-	93
Air compressor	CNP 002	9	102	60%	0	-10	99	-
Air compressor	CNP 002	9	102	60%	0	-10	-	99
						Overall Noise Level, dB(A)	**109**	**109**
						Maximum, dB(A) [1]:	**109**	

Stage 2 (TTM Stage 3a & 3b) (06/2016 - 10/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	1	95	100%	0	-10	85	-
Welding set	CNP 107	1	100	100%	0	0	-	100
Piling rig	CNP 167	2	114	80%	0	-10	-	106
Crawler crane	EPD-00467	1	102	100%	0	0	102	-
Grout mixer	CNP 105	1	90	100%	0	0	90	-
Air compressor	CNP 002	6	102	80%	0	-10	-	99
						Overall Noise Level, dB(A)	**102**	**108**
						Maximum, dB(A) [1]:	**108**	

Stage 3 (TTM Stage 3C) (12/2016 - 04/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Generator	CNP 103	1	95	100%	0	-10	85
Welding set	CNP 107	1	100	100%	0	0	100
Piling rig	CNP 167	2	114	100%	0	-10	107
Crawler crane	EPD-00467	1	102	100%	0	0	102
Grout mixer	CNP 105	1	90	100%	0	0	90
Air compressor	CNP 002	4	102	100%	0	-10	98
						Overall Noise Level, dB(A)	**109**

Diaphragm wall construction

Stage 1 (TTM Stage 2) (08/2015 - 01/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	5	95	100%	0	0	102	-
Dump truck	CNP 068	1	105	100%	0	-5	-	100
Hydraulic extractor	CNP 163	3	90	70%	0	0	93	-
Power Pack	CNP 168	3	100	70%	0	0	103	-
Crawler crane with grab	EPD-00467	4	102	70%	0	0	-	106
Desander	CNP 162	3	105	100%	0	-10	100	-
Filter press	CNP 162	1	105	100%	0	-10	-	95
Bentonite mixer	CNP 045	2	96	100%	0	0	-	99
Crane lorry	CNP 145	1	105	80%	0	0	-	104
Concrete mixing truck	BS D6/33	3	96	40%	0	0	-	97
						Overall Noise Level, dB(A)	**107**	**110**
						Maximum, dB(A) [1]:	**110**	

Stage 2 (TTM Stage 3a/3b/3c & 5) (02/2016 - 03/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	4	95	100%	0	-10	91	91
Dump truck	CNP 068	1	105	80%	0	0	104	-
Hydraulic extractor	CNP 163	3	90	70%	0	0	-	93
Power Pack	CNP 168	3	100	70%	0	0	-	103
Crawler crane with grab	EPD-00467	3	102	80%	0	0	106	-
Desander	CNP 162	4	105	100%	0	-10	-	101
Filter press	CNP 162	1	105	100%	0	-10	-	95
Bentonite mixer	CNP 045	2	96	100%	0	0	-	99
Crane lorry	CNP 145	1	105	100%	0	0	-	105
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96	-
						Overall Noise Level, dB(A)	**108**	**109**
						Maximum, dB(A) [1]:	**109**	

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Zone 1 - Wan Chai PTI

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Excavation & ELS installation
Underground (partially covered by decking)

(03/2017 - 05/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Rock drill	[2]	1	108	60%	0	-5	101	-
Rock drill	[2]	1	108	60%	0	-5	-	101
Breaker, excavator mounted (hydraulic)	CNP 028	3	122	50%	0	-10	114	-
Breaker, excavator mounted (hydraulic)	CNP 028	3	122	50%	0	-10	-	114
Excavator	EPD-02341	1	105	50%	0	0	102	-
Excavator	EPD-02341	1	105	50%	0	0	-	102
Welding set	CNP 107	2	100	80%	0	0	-	102
Water Pump, submersible (electric)	CNP 283	4	85	80%	0	0	-	90
Ventilation fans	CNP 241	2	108	50%	0	0	108	-
Ventilation fans	CNP 241	2	108	50%	0	0	-	108
At surface								
Crawler crane	EPD-00467	4	102	50%	0	0	105	-
Crane lorry	CNP 145	1	105	60%	0	0	103	-
Water pump (electric)	CNP 281	1	88	70%	0	0	86	-
Dump truck	CNP 068	2	105	60%	0	-5	101	-
Excavator	EPD-02341	3	105	70%	0	-5	-	103
Welding set	CNP 107	1	100	100%	0	0	-	100
Power pack for handheld tools	CNP 168	1	100	100%	0	0	100	-
Concrete pump	CNP 047	1	109	60%	0	-10	97	-
Concrete mixing truck	BS D6/33	1	96	60%	0	0	94	-
						Overall Noise Level, dB(A)	**116**	**116**
						Maximum, dB(A) [1]:	**116**	

Construction of Internal Structure of Box Station
Underground (partially covered by decking)

(06/2018 - 02/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	2	100	100%	0	0	103	-
Ventilation fans	CNP 241	2	108	100%	0	0	111	-
Ventilation fans	CNP 241	2	108	100%	0	0	-	111
Power pack for handheld tools	CNP 168	1	100	100%	0	0	100	-
Vibrating poker - handheld	CNP 173	3	102	80%	0	0	-	106
At surface								
Crawler crane	EPD-00467	3	102	50%	0	0	-	104
Crane lorry	CNP 145	1	105	80%	0	0	-	104
Water pump (electric)	CNP 281	1	88	100%	0	0	88	-
Dump truck	CNP 068	1	105	50%	0	-5	-	97
Excavator	EPD-02341	1	105	60%	0	-5	-	98
Welding set	CNP 107	1	100	100%	0	0	-	100
Concrete pump	CNP 047	1	109	80%	0	0	108	-
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96	-
						Overall Noise Level, dB(A)	**114**	**114**
						Maximum, dB(A) [1]:	**114**	

Construction of Entrances and Structure
Above ground

(03/2019 - 08/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Mobile crane	EPD-01239	2	109	50%	0	-5	104
Crane lorry	CNP 145	1	105	100%	0	0	105
Dump truck	CNP 068	1	105	60%	0	-5	98
Welding set	CNP 107	1	100	100%	0	0	100
Concrete pump	CNP 047	1	109	50%	0	0	106
Concrete mixing truck	BS D6/33	1	96	50%	0	0	93
Air compressor	CNP 002	1	102	50%	0	0	99
Vibrating poker - handheld	CNP 173	3	102	50%	0	0	104
						Overall Noise Level, dB(A)	**112**

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Zone 2 - Harbour Road Sports Centre

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Demolition of Harbour Road Sports Centre (HRSC) (06/2017 - 09/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Excavator	EPD-02341	2	105	100%	0	-5	103	-
Dump truck with Grab	CNP 068	1	105	100%	0	0	-	105
Air compressor	CNP 002	1	102	100%	0	-10	-	92
Hand held pneumatic breaker	CNP 024	3	108	60%	0	-5	106	-
Welding Set	CNP 107	1	100	100%	0	0	-	100
						Overall Noise Level, dB(A)	**107**	**106**
						Maximum, dB(A) [1]:	**107**	

Site Hoarding Erection & Pile Removal (10/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Excavator	EPD-02341	2	105	100%	0	-5	-	103
Dump truck with Grab	CNP 068	1	105	100%	0	0	105	-
Crane lorry	CNP 145	1	105	100%	0	0	-	105
Air compressor	CNP 002	1	102	60%	0	-10	90	-
Hand held pneumatic breaker	CNP 024	1	108	50%	0	-5	-	100
Welding Set	CNP 107	1	100	100%	0	0	-	100
Piling, large diameter bored, oscillator	CNP 165	1	115	100%	0	-10	105	-
Crawler crane	EPD-00467	1	102	100%	0	0	102	-
						Overall Noise Level, dB(A)	**109**	**109**
						Maximum, dB(A) [1]:	**109**	

Piling works (PPW and H-piles) (11/2017 - 02/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	4	100	80%	0	0	-	105
Piling rig	CNP 167	4	114	80%	0	-10	109	-
Crawler crane	EPD-00467	3	102	80%	0	0	-	106
Grout mixer	CNP 105	2	90	100%	0	0	-	93
Air compressor	CNP 002	16	102	80%	0	-10	103	-
						Overall Noise Level, dB(A)	**110**	**109**
						Maximum, dB(A) [1]:	**110**	

Excavation & ELS installation (drill-and-blast works with mechanical excavation)
Underground (partially covered by decking) (03/2018 - 01/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Rock drill	[2]	3	108	60%	0	-5	106	-
Breaker, excavator mounted (hydraulic)	CNP 028	2	122	30%	-10	0	-	110
Breaker, excavator mounted (hydraulic)	CNP 028	2	122	30%	-10	0	110	
Welding set	CNP 107	2	100	60%	0	0	101	-
Water Pump, submersible (electric)	CNP 283	2	85	100%	0	0	-	88
Ventilation fans	CNP 241	1	108	75%	0	0	-	107
Ventilation fans	CNP 241	1	108	75%	0	0	107	-
At surface								
Crawler crane	EPD-00467	2	102	50%	0	0	102	-
Crane lorry	CNP 145	1	105	60%	0	0	-	103
Dump truck	CNP 068	1	105	50%	0	-5	-	97
Excavator	EPD-02341	1	105	50%	0	-5	-	97
Concrete mixing truck	BS D6/33	1	96	50%	0	0	-	93
						Overall Noise Level, dB(A)	**113**	**112**
						Maximum, dB(A) [1]:	**113**	

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Zone 2 - Harbour Road Sports Centre

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Construction of Internal Structure of Box Station
Underground (partially covered by decking) (02/2019 - 10/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	2	100	100%	0	0	-	103
Ventilation fans	CNP 241	2	108	60%	0	0	109	-
Power pack for handheld tools	CNP 168	1	100	100%	0	0	-	100
Vibrating poker - handheld	CNP 173	3	102	60%	0	0	105	-
At surface								
Crawler crane	EPD-00467	2	102	50%	0	0	-	102
Crane lorry	CNP 145	1	105	80%	0	0	-	104
Dump truck	CNP 068	1	105	100%	0	-5	-	100
Excavator	EPD-02341	1	105	100%	0	0	105	-
Welding set	CNP 107	1	100	100%	0	0	-	100
Concrete pump	CNP 047	1	109	80%	0	0	-	108
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96	-
						Overall Noise Level, dB(A)	**111**	**112**
						Maximum, dB(A) [1]:	**112**	

Construction of Entrances and Ground structure
Above ground (11/2019 - 01/2020)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Mobile crane	EPD-01239	1	109	100%	0	-5	104
Crane lorry	CNP 145	1	105	100%	0	0	105
Dump truck	CNP 068	1	105	100%	0	-5	100
Welding set	CNP 107	1	100	100%	0	0	100
Concrete pump	CNP 047	1	109	100%	0	0	109
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96
Air compressor	CNP 002	1	102	100%	0	0	102
Vibrating poker - handheld	CNP 173	3	102	100%	0	0	107
						Overall Noise Level, dB(A)	**114**

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Zone 3 - Wan Chai Swimming Pool

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Demolition of Wan Chai Swimming Pool (12/2015 - 03/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Concrete Saw	CNP 203	2	115	50%	0	-10	-	105
Excavator	EPD-02341	1	105	50%	0	-5	97	-
Dump truck	CNP 068	1	105	30%	0	0	100	-
						Overall Noise Level, dB(A)	**102**	**105**
						Maximum, dB(A) [1]:	**105**	

Site Hoarding Erection & Pile Removal (08/2016 - 09/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Excavator	EPD-02341	2	105	50%	0	-5	-	100
Dump truck with Grab	CNP 068	1	105	40%	0	0	-	101
Crane lorry	CNP 145	1	105	80%	0	0	-	104
Air compressor	CNP 002	1	102	100%	0	-10	92	92
Hand held pneumatic breaker	CNP 024	1	108	70%	0	-5	-	-
Welding Set	CNP 107	1	100	100%	0	-10	90	-
Piling, large diameter bored, oscillator	CNP 165	1	115	100%	0	-10	105	-
Crawler crane	EPD-00467	1	102	100%	0	0	102	-
						Overall Noise Level, dB(A)	**107**	**107**
						Maximum, dB(A) [1]:	**107**	

Piling works (H-piles) (03/2016 - 04/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	2	100	100%	0	0	103	-
Piling rig	CNP 167	2	114	100%	0	-10	-	107
Crawler crane	EPD-00467	2	102	100%	0	0	105	-
Grout mixer	CNP 105	1	90	100%	0	0	90	-
Air compressor	CNP 002	6	102	100%	0	-10	-	100
						Overall Noise Level, dB(A)	**107**	**108**
						Maximum, dB(A) [1]:	**108**	

Diaphragm wall construction (05/2016 - 07/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Hydraulic extractor	CNP 163	2	90	100%	0	0	93
Power Pack	CNP 168	2	100	65%	0	0	101
Crawler crane with grab	EPD-00467	3	102	55%	0	0	104
Concrete mixing truck	BS D6/33	1	96	80%	0	0	95
						Overall Noise Level, dB(A)	**106**

Excavation & ELS installation
Underground (partially covered by decking) (08/2017 - 08/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Rock drill	[2]	1	108	60%	0	-5	-	101
Breaker, excavator mounted (hydraulic)	CNP 028	2	122	50%	0	-10	112	-
Breaker, excavator mounted (hydraulic)	CNP 028	2	122	50%	0	-10	-	112
Welding set	CNP 107	2	100	60%	0	0	101	-
Water Pump, submersible (electric)	CNP 283	2	85	100%	0	0	88	-
Ventilation fans	CNP 241	2	108	60%	0	0		109
At surface								
Crawler crane	EPD-00467	2	102	40%	0	0	101	-
Crane lorry	CNP 145	1	105	50%	0	0	102	-
Dump truck	CNP 068	1	105	40%	0	-5	96	-
Excavator	EPD-02341	1	105	50%	0	-5	97	-
Concrete mixing truck	BS D6/33	1	96	60%	0	0	94	-
						Overall Noise Level, dB(A)	**113**	**114**
						Maximum, dB(A) [1]:	**114**	

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Zone 3 - Wan Chai Swimming Pool

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Construction of Internal Structure of Box Station
Underground (partially covered by decking) (09/2018 - 03/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	2	100	100%	0	0	103	-
Ventilation fans	CNP 241	2	108	80%	0	0	-	110
Power pack for handheld tools	CNP 168	1	100	100%	0	0	100	-
Vibrating poker - handheld	CNP 173	3	102	80%	0	0	106	-
At surface								
Crawler crane	EPD-00467	2	102	50%	0	0	-	102
Crane lorry	CNP 145	1	105	70%	0	0	103	-
Dump truck	CNP 068	1	105	70%	0	-5	98	-
Excavator	EPD-02341	1	105	100%	0	-5	100	-
Welding set	CNP 107	1	100	100%	0	0	100	-
Concrete pump	CNP 047	1	109	80%	0	-10	-	98
Concrete mixing truck	BS D6/33	1	96	100%	0	0	-	96
						Overall Noise Level, dB(A)	**111**	**111**
						Maximum, dB(A) [1]:	**111**	

Construction of Vent Shaft and Ground structure
Above ground (04/2019 - 09/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Mobile crane	EPD-01239	1	109	50%	0	0	106	106
Crane lorry	CNP 145	1	105	80%	0	0	104	-
Dump truck	CNP 068	1	105	100%	0	0	-	105
Welding set	CNP 107	1	100	100%	0	0	100	-
Concrete pump	CNP 047	1	109	80%	0	0	108	-
Concrete mixing truck	BS D6/33	1	96	100%	0	0	-	96
Vibrating poker - handheld	CNP 173	3	102	100%	0	0	-	107
						Overall Noise Level, dB(A)	**111**	**111**
						Maximum, dB(A) [1]:	**111**	

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Zone 4 - Wan Chai Sports Ground

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Piling works (H-piles) - Wan Chai Sports Ground (WCSG) (08/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	1	95	100%	0	0	-	95
Welding set	CNP 107	1	100	100%	0	0	-	100
Piling rig	CNP 167	1	114	100%	0	0	114	-
Crawler crane	EPD-00467	1	102	100%	0	0	-	102
Grout mixer	CNP 105	1	90	100%	0	0	-	90
Air compressor	CNP 002	2	102	100%	0	0	105	-
						Overall Noise Level, dB(A)	**115**	**105**
						Maximum, dB(A) [2]:	**115**	

Diaphragm wall construction - Phase 1 WCSG (12/2015 - 07/2016)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Generator	CNP 103	1	95	100%	0	0	-	95
Dump truck	CNP 068	1	105	50%	0	0	-	102
Hydraulic extractor	CNP 163	1	90	80%	0	0	-	89
Power Pack	CNP 168	1	100	80%	0	0	99	-
Crawler crane with grab	EPD-00467	1	102	100%	0	0	-	102
Desander	CNP 162	1	105	100%	0	-10	-	95
Bentonite mixer	CNP 045	1	96	100%	0	0	96	-
Crane lorry	CNP 145	1	105	70%	0	0	103	-
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96	-
						Overall Noise Level, dB(A)	**106**	**106**
						Maximum, dB(A) [2]:	**106**	

Piling works (PPW and H-piles) - Tonnochy Road (12/2016 - 06/2017)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Welding set	CNP 107	2	100	100%	0	0	103
Piling rig	CNP 167	4	114	55%	0	-10	107
Crawler crane	EPD-00467	2	102	55%	0	0	102
Grout mixer	CNP 105	2	90	100%	0	0	93
Air compressor	CNP 002	8	102	100%	0	-10	101
						Overall Noise Level, dB(A)	**110**

Excavation & ELS installation

Underground (no noise cover) (06/2017 - 07/2018)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Rock drill	[2]	1	108	80%	0	-5	102	102
Breaker, excavator mounted (hydraulic)	CNP 028	1	122	60%	0	-10	-	110
Welding set	CNP 107	2	100	80%	0	0	102	102
Water Pump, submersible (electric)	CNP 283	1	85	80%	0	0	84	84
Ventilation fans	CNP 241	3	108	80%	0	0	112	-
						Overall Noise Level, dB(A)	**113**	**111**
						Maximum, dB(A) [2]:	**113**	

Underground (with full noise cover over Tonnochy Road) (08/2018 - 04/2019)

Rock drill	[2]	1	108	70%	-10	0	96
Excavator	EPD-02341	4	105	100%	-10	0	101
Welding set	CNP 107	2	100	100%	-10	0	93
Water Pump, submersible (electric)	CNP 283	1	85	100%	-10	0	75
Ventilation fans	CNP 241	3	108	100%	-10	0	103
						Overall Noise Level, dB(A)	**106**

At surface (08/2018 - 04/2019)

Crawler crane	EPD-00467	1	102	50%	0	0	99
Crane lorry	CNP 145	1	105	100%	0	0	105
Water pump (electric)	CNP 281	1	88	100%	0	0	88
Dump truck	CNP 068	1	105	100%	0	-5	100
Excavator	EPD-02341	1	105	100%	0	-5	100
Welding set	CNP 107	1	100	100%	0	0	100
Generator	CNP 103	1	95	100%	0	-10	85
Concrete pump	CNP 047	1	109	100%	0	0	109
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96
						Overall Noise Level, dB(A)	**112**

Appendix B2 - Construction Plant Inventory for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Zone 4 - Wan Chai Sports Ground

Notes:
[1] PME in separate groups will not be operated at the same time. The group with the higher SWL is adopted in this assessment as the worst-case scenario.
[2] The SWL of rock drill was referenced to the approved Tsim Sha Tsui Station Northern Subway EIA Report (Register No.: AEIAR-127/2008).

Construction of Internal Structure of Box Station
Underground (with full noise cover over Tonnochy Road) (10/2018 - 04/2019)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL Group 1	Sub-total SWL Group 2
Welding set	CNP 107	2	100	100%	-10	0	93	-
Water Pump, submersible (electric)	CNP 283	1	85	100%	-10	0	-	75
Excavator	EPD-02341	2	105	100%	-10	0	98	-
Ventilation fans	CNP 241	4	108	100%	-10	0	104	-
Power pack for handheld tools	CNP 168	1	100	100%	-10	0	90	
Vibrating poker - handheld	CNP 173	3	102	100%	-10	0	-	97
At surface								
Crawler crane	EPD-00467	1	102	100%	0	0	-	102
Crane lorry	CNP 145	1	105	100%	0	0	105	-
Water pump (electric)	CNP 281	1	88	100%	0	0	-	88
Dump truck	CNP 068	1	105	100%	0	-5	-	100
Excavator	EPD-02341	1	105	100%	0	-5	-	100
Welding set	CNP 107	1	100	100%	0	0	-	100
Concrete pump	CNP 047	1	109	100%	0	-10	-	99
Concrete mixing truck	BS D6/33	1	96	100%	0	0	-	96
Generator	CNP 103	1	95	100%	0	-10	-	85
						Overall Noise Level, dB(A)	**108**	**108**
						Maximum, dB(A) [2]:	**108**	

Reprovision of WCSG grandstand (05/2019 - 09/2020)

PME	TM Ref./ other Ref	No. of Items	SWL/ Item dB(A)	On- time %	Correction for Underground Works	Barrier Correction	Sub-total SWL
Mobile crane	EPD-01239	1	109	100%	0	0	109
Crane lorry	CNP 145	1	105	100%	0	0	105
Dump truck	CNP 068	1	105	100%	0	0	105
Excavator	EPD-02341	1	105	100%	0	0	105
Welding set	CNP 107	1	100	100%	0	0	100
Concrete pump	CNP 047	1	109	100%	0	0	109
Concrete mixing truck	BS D6/33	1	96	100%	0	0	96
Air compressor	CNP 002	1	102	100%	0	0	102
Generator	CNP 103	1	95	100%	0	0	95
Vibrating poker - handheld	CNP 173	3	102	100%	0	0	107
						Overall Noise Level, dB(A)	**115**

Appendix C
Notional Distance of Works Area to NSR

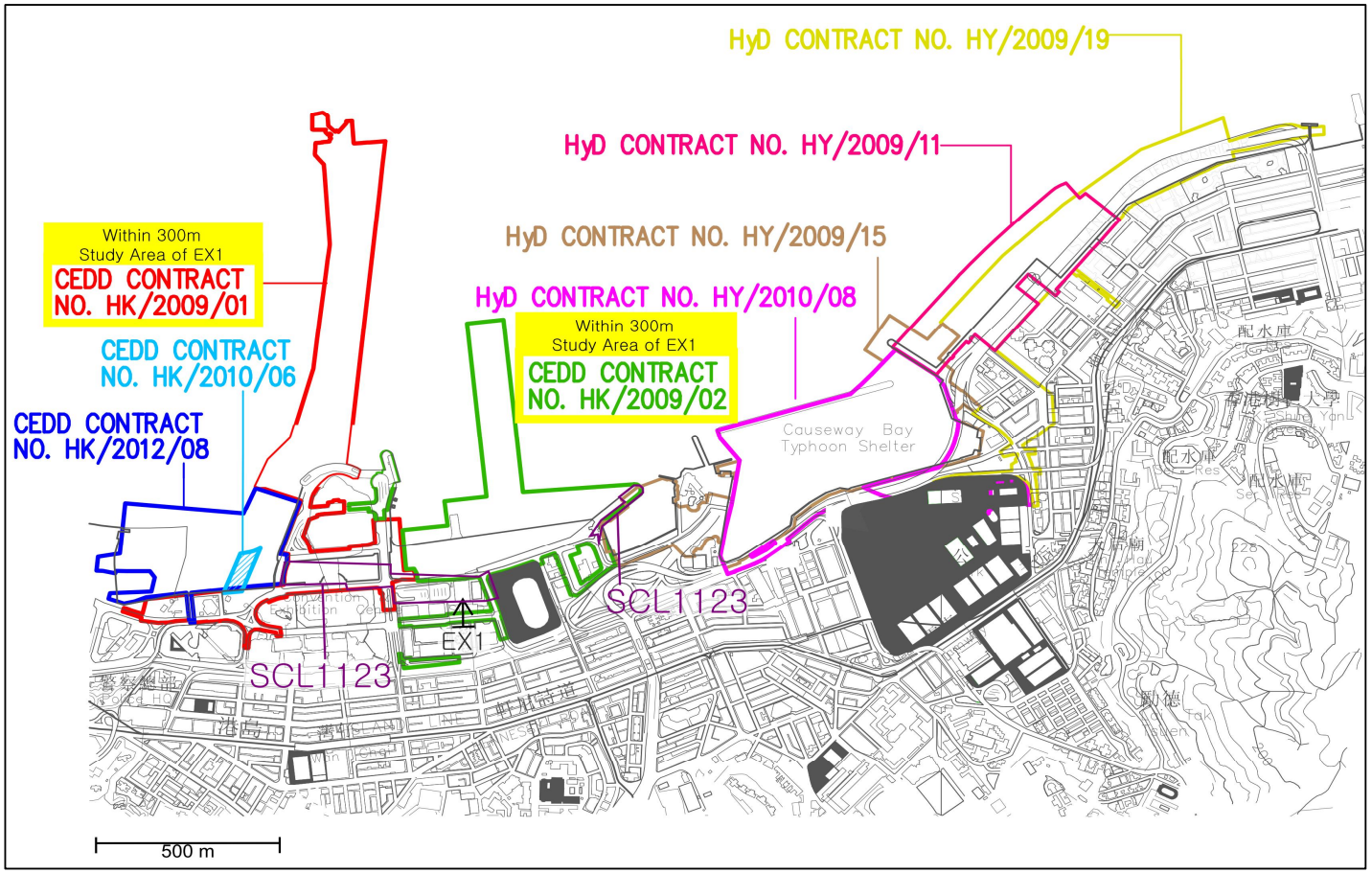
Appendix C - Notional Distance of Works Area to NSR

Works Area	Notional Distance to EX1 (m) [1]
Zone 1	124
Zone 2	92
Zone 3	100
Zone 4	124
Area A	354
Area B	437
Area C	293
Area E	248
Barging Point	445

Note:
[1] Works further than 300 m from the NSR would not be assessed due to the large distance attentuation.

Appendix D
Details of the Concurrent Projects

Appendix D - Details of the Concurrent Projects
Locations of Works Sites of WDII Contracts
(Extracted from EM&A Reports of WDII&CWB project)



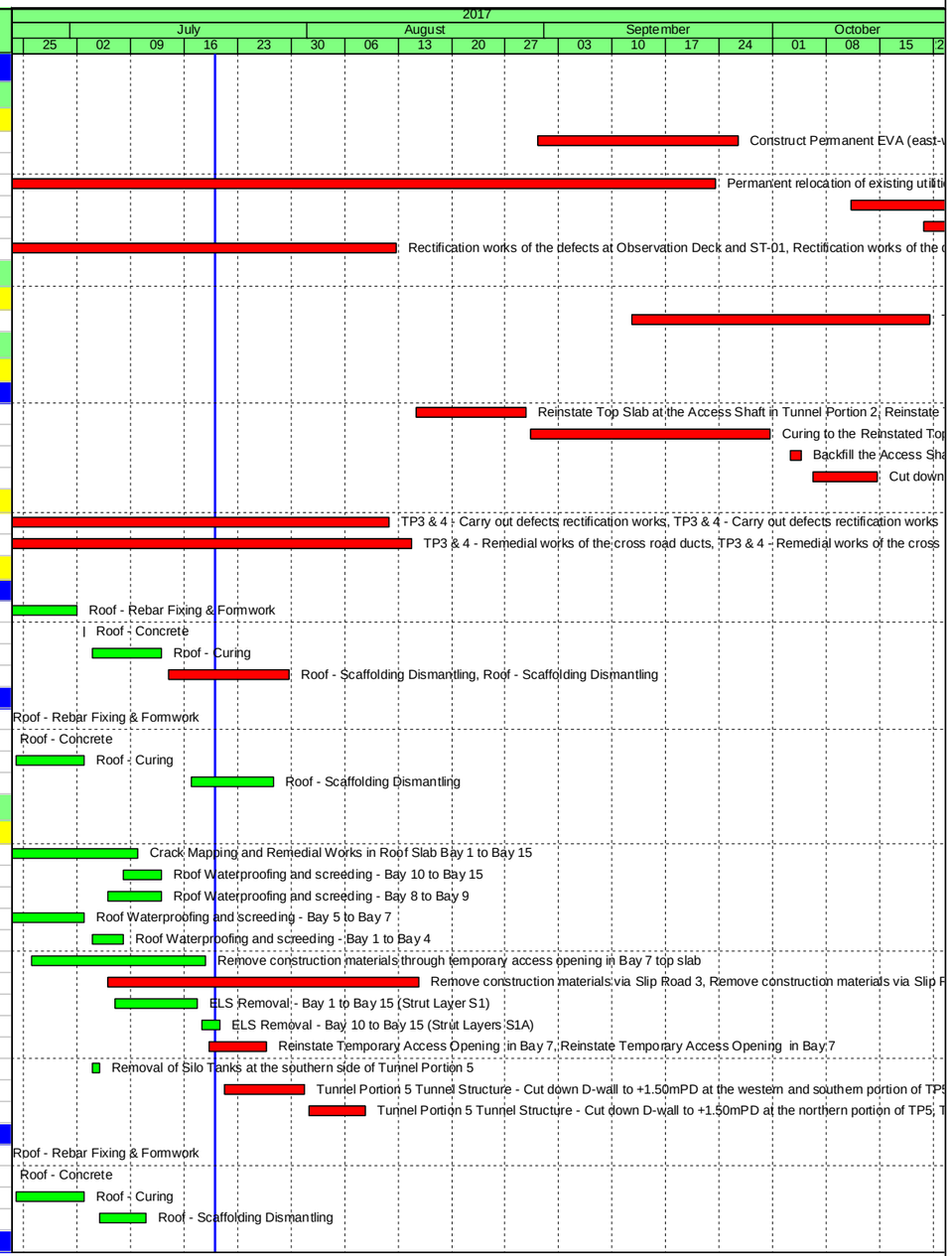
Contract No. HK/2009/01
Wan Chai Development Phase II – Central -Wan Chai Bypass at
Hong Kong Convention and Exhibition Centre

Construction Activities for Three Months Rolling

Construction Activities	July 2017	August 2017	September 2017
Reinstatement of Amenity Area			
Road and Drain Works			

CEDD CONTRACT HK/2009/02

Activity ID	Activity Name	Ori Dur	Rem Dur	Scheduled/ Actual Start	Scheduled/ Actual Finish	Total Float	Calendar
Three Months Rolling Programme 2017-07-20 (dd 20-Jul-17)							
Section 8A of the Works - Reprovisioning of Wan Chai Ferry Pier in Area 8							
Outstanding Works in Section 8A							
S8A-OUT-1039a	Construct Permanent EVA (east-west direction)	25	25	31-Aug-17	26-Sep-17	-171	HK Working Day
S8A-OUT-1040	Relocation of fire hydrant near Ferry Pier	10	10	13-Nov-17	23-Nov-17	-171	HK Working Day
S8A-OUT-1050	Permanent relocation of existing utilities to permanent EVA	10	31	16-Dec-16 A	23-Sep-17	-117	HK Working Day
S8A-OUT-1060	Reinstatement works of the flooring inside the rooms under staircase ST-01 of the Ferry Pier	12	12	11-Oct-17	23-Oct-17	-147	HK Working Day
S8A-OUT-1070	Reinstatement works of the flooring under the temporary covered walkway	6	6	20-Oct-17	27-Oct-17	-147	HK Working Day
S8A-OUT-1080	Rectification works of the defects at Observation Deck and ST-01	34	24	08-Jun-17 A	12-Aug-17	-117	HK Working Day
Section 8B of the Works - Temporary Covered Walkway & Works in Area 8							
Temporary Covered Walkway							
S8B-TCW-02300	Temp Covered Walkway - Construct the remaining Type 4 Covered Walkway at west wing	36	36	12-Sep-17	21-Oct-17	-141	HK Working Day
Section 9B of the Works - CWB Tunnel Structure (CH3400 - CH3796)							
Tunnel Portion 2 (CH3425-CH3500)							
CWB Structural Works							
S9B-T2-6010	Reinstate Top Slab at the Access Shaft in Tunnel Portion 2	15	15	15-Aug-17	29-Aug-17	-510	HK Working Day
S9B-T2-6020	Curing to the Reinstated Top Slab at the Access Shaft in Tunnel Portion 2	32	32	30-Aug-17	30-Sep-17	-510	HK Working Day
S9B-T2-6030	Backfill the Access Shaft with Foam Concrete in Tunnel Portion 2	2	2	03-Oct-17	04-Oct-17	-510	HK Working Day
S9B-T2-6035	Cut down the Access Shaft to 1.5 metres below final formation level and backfill in Tunnel Portion 2	9	9	06-Oct-17	14-Oct-17	-510	HK Working Day
Tunnel Portion 3 Outstanding Works							
S9B-T34-OUT-1020	TP3 & 4 - Carry out defects rectification works	25	23	20-Oct-16 A	11-Aug-17	-80	Calendar Day
S9B-T34-OUT-1030	TP3 & 4 - Remedial works of the cross road ducts	18	26	12-Oct-16 A	14-Aug-17	-83	Calendar Day
Tunnel Portion 5 (CH3400-CH3425)							
Bay 13 (Eastern End Bay)							
S9B-T5-B13-1360	Roof - Rebar Fixing & Formwork	14	0	30-May-17 A	02-Jul-17 A		Calendar Day
S9B-T5-B13-1370	Roof - Concrete	1	0	03-Jul-17 A	03-Jul-17 A		Calendar Day
S9B-T5-B13-1380	Roof - Curing	10	0	04-Jul-17 A	13-Jul-17 A		Calendar Day
S9B-T5-B13-1390	Roof - Scaffolding Dismantling	4	10	14-Jul-17 A	29-Jul-17	-93	Calendar Day
Bay 12							
S9B-T5-B12-1360	Roof - Rebar Fixing & Formwork	12	0	25-May-17 A	22-Jun-17 A		Calendar Day
S9B-T5-B12-1370	Roof - Concrete	1	0	23-Jun-17 A	23-Jun-17 A		Calendar Day
S9B-T5-B12-1380	Roof - Curing	10	0	24-Jun-17 A	03-Jul-17 A		Calendar Day
S9B-T5-B12-1390	Roof - Scaffolding Dismantling	5	8	17-Jul-17 A	27-Jul-17	906	Calendar Day
Section 10 Works - CWB Tunnel Structure (CH3246 - CH3400)							
Tunnel Portion 5 (CH3276-CH3400)							
S10-T5-5010	Crack Mapping and Remedial Works in Roof Slab Bay 1 to Bay 15	26	0	09-Jun-17 A	10-Jul-17 A		Calendar Day
S10-T5-6000	Roof Waterproofing and screeding - Bay 10 to Bay 15	14	0	08-Jul-17 A	13-Jul-17 A		Calendar Day
S10-T5-6100	Roof Waterproofing and screeding - Bay 8 to Bay 9	16	0	06-Jul-17 A	13-Jul-17 A		Calendar Day
S10-T5-6200	Roof Waterproofing and screeding - Bay 5 to Bay 7	15	0	22-Jun-17 A	03-Jul-17 A		Calendar Day
S10-T5-6300	Roof Waterproofing and screeding - Bay 1 to Bay 4	19	0	04-Jul-17 A	08-Jul-17 A		Calendar Day
S10-T5-6420	Remove construction materials through temporary access opening in Bay 7 top slab	13	0	26-Jun-17 A	18-Jul-17 A		Calendar Day
S10-T5-6425	Remove construction materials via Slip Road 3	26	27	06-Jul-17 A	15-Aug-17	-123	Calendar Day
S10-T5-7000	ELS Removal - Bay 1 to Bay 15 (Strut Layer S1)	24	0	07-Jul-17 A	17-Jul-17 A		Calendar Day
S10-T5-7100	ELS Removal - Bay 10 to Bay 15 (Strut Layers S1A)	4	0	18-Jul-17 A	20-Jul-17 A		Calendar Day
S10-T5-7110	Reinstate Temporary Access Opening in Bay 7	10	7	19-Jul-17 A	26-Jul-17	-64	Calendar Day
S10-T5-7210	Removal of Silo Tanks at the southern side of Tunnel Portion 5	14	0	04-Jul-17 A	05-Jul-17 A		HK Working Day
S10-T5-8000	Tunnel Portion 5 Tunnel Structure - Cut down D-wall to +1.50mPD at the western and southern portion of TP5	11	11	21-Jul-17	31-Jul-17	-158	Calendar Day
S10-T5-8010	Tunnel Portion 5 Tunnel Structure - Cut down D-wall to +1.50mPD at the northern portion of TP5	8	8	01-Aug-17	08-Aug-17	-158	Calendar Day
Bay 11							
S10-T5-B11-1360	Roof - Rebar Fixing & Formwork	14	0	17-May-17 A	22-Jun-17 A		Calendar Day
S10-T5-B11-1370	Roof - Concrete	1	0	23-Jun-17 A	23-Jun-17 A		Calendar Day
S10-T5-B11-1380	Roof - Curing	12	0	24-Jun-17 A	03-Jul-17 A		Calendar Day
S10-T5-B11-1390	Roof - Scaffolding Dismantling	5	0	05-Jul-17 A	11-Jul-17 A		Calendar Day
Bay 10							



◆ Milestone
◆ Critical Milestones
Current Works
Critical Works
Remaining Level of Effort

CHUN WO - CRGL

JOINT VENTURE

CEDD CONTRACT NO. HK/2009/02

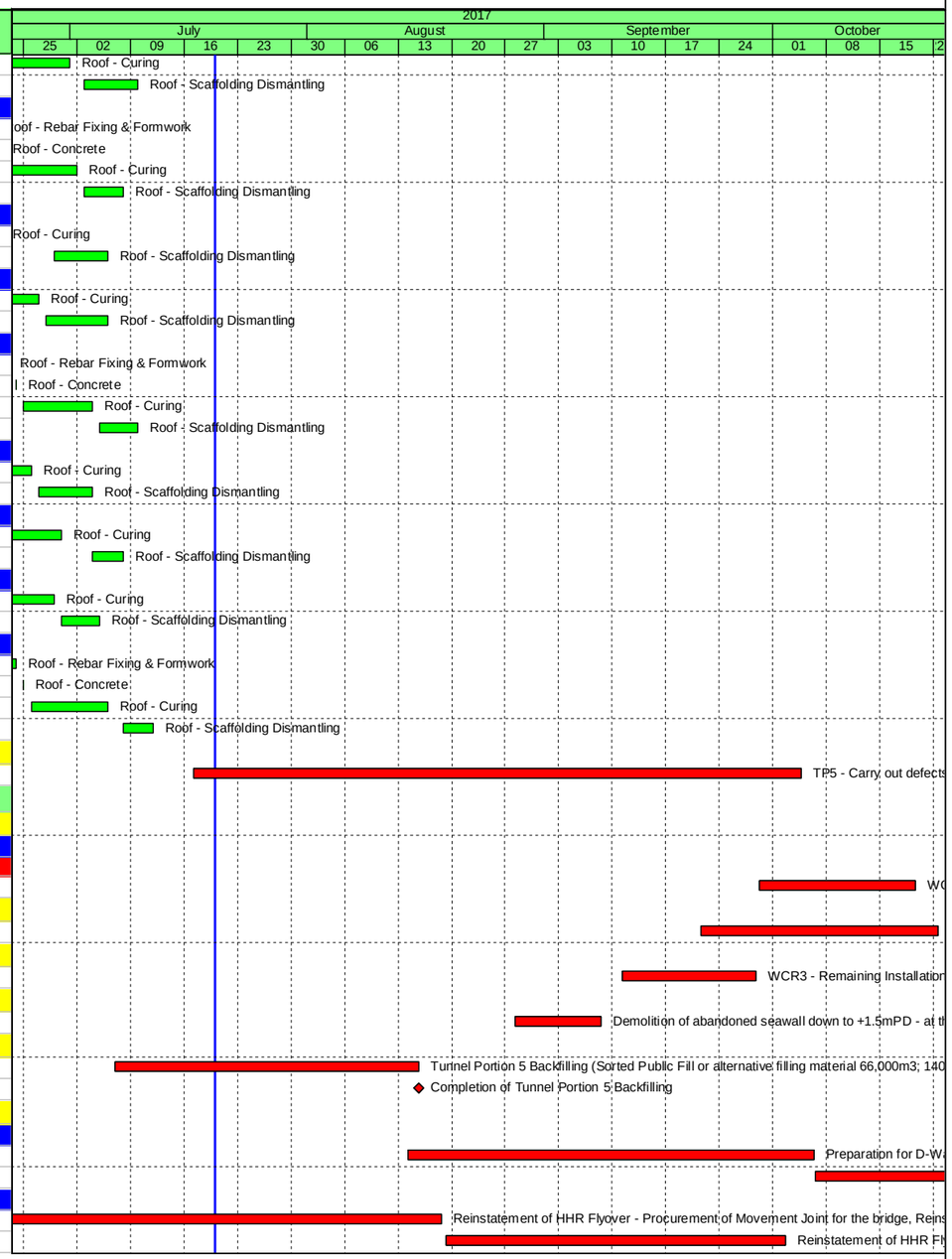
WD II - Central Wanchai Bypass at Wan Chai East (Contract 2)

3-MONTH ROLLING PROGRAMME (data date 20-Jul-17)

Date	Revision	Checked	Approved

CEDD CONTRACT HK/2009/02

Activity ID	Activity Name	Ori Dur	Rem Dur	Scheduled/ Actual Start	Scheduled/ Actual Finish	Total Float	Calendar
S10-T5-B10-1380	Roof - Curing	12	0	20-Jun-17 A	01-Jul-17 A		Calendar Day
S10-T5-B10-1390	Roof - Scaffolding Dismantling	7	0	03-Jul-17 A	10-Jul-17 A		Calendar Day
Bay 9							
S10-T5-B9-1360	Roof - Rebar Fixing & Formwork	11	0	17-May-17 A	21-Jun-17 A		Calendar Day
S10-T5-B9-1370	Roof - Concrete	1	0	22-Jun-17 A	22-Jun-17 A		Calendar Day
S10-T5-B9-1380	Roof - Curing	10	0	23-Jun-17 A	02-Jul-17 A		Calendar Day
S10-T5-B9-1390	Roof - Scaffolding Dismantling	5	0	03-Jul-17 A	08-Jul-17 A		Calendar Day
Bay 8A - Roof only							
S10-T5-B8A-1380	Roof - Curing	12	0	11-Jun-17 A	22-Jun-17 A		Calendar Day
S10-T5-B8A-1390	Roof - Scaffolding Dismantling	7	0	29-Jun-17 A	06-Jul-17 A		Calendar Day
Bay 8							
S10-T5-B8-1380	Roof - Curing	12	0	16-Jun-17 A	27-Jun-17 A		Calendar Day
S10-T5-B8-1390	Roof - Scaffolding Dismantling	7	0	28-Jun-17 A	06-Jul-17 A		Calendar Day
Bay 7							
S10-T5-B7-1360	Roof - Rebar Fixing & Formwork	12	0	03-May-17 A	23-Jun-17 A		Calendar Day
S10-T5-B7-1370	Roof - Concrete	1	0	24-Jun-17 A	24-Jun-17 A		Calendar Day
S10-T5-B7-1380	Roof - Curing	10	0	25-Jun-17 A	04-Jul-17 A		Calendar Day
S10-T5-B7-1390	Roof - Scaffolding Dismantling	5	0	05-Jul-17 A	10-Jul-17 A		Calendar Day
Bay 6A - Roof only							
S10-T5-B6A-1413	Roof - Curing	12	0	15-Jun-17 A	26-Jun-17 A		Calendar Day
S10-T5-B6A-1414	Roof - Scaffolding Dismantling	7	0	27-Jun-17 A	04-Jul-17 A		Calendar Day
Bay 3 (3 Cells)							
S10-T5-B3-1380	Roof - Curing	12	0	18-Jun-17 A	30-Jun-17 A		Calendar Day
S10-T5-B3-1390	Roof - Scaffolding Dismantling	3	0	04-Jul-17 A	08-Jul-17 A		Calendar Day
Bay 2 (3 Cells)							
S10-T5-B2-1350	Roof - Curing	12	0	18-Jun-17 A	29-Jun-17 A		Calendar Day
S10-T5-B2-1360	Roof - Scaffolding Dismantling	5	0	30-Jun-17 A	05-Jul-17 A		Calendar Day
Bay 1 (3 Cells) (Western End Bay)							
S10-T5-B1-1360	Roof - Rebar Fixing & Formwork	16	0	15-May-17 A	24-Jun-17 A		Calendar Day
S10-T5-B1-1370	Roof - Concrete	1	0	25-Jun-17 A	25-Jun-17 A		Calendar Day
S10-T5-B1-1380	Roof - Curing	12	0	26-Jun-17 A	06-Jul-17 A		Calendar Day
S10-T5-B1-1390	Roof - Scaffolding Dismantling	5	0	08-Jul-17 A	12-Jul-17 A		Calendar Day
Outstanding Works							
S10-T5-OUT-1020	TP5 - Carry out defects identification and rectification works	80	77	17-Jul-17 A	04-Oct-17	-146	Calendar Day
Section 11 of the Works - Remainder of Works							
Marine Works at WCR1							
Reclamation Works							
Precast Units Installation							
S11-S1-1820	WCR1 - Remaining Installation of the Corrosion Monitoring System	18	18	29-Sep-17	19-Oct-17	-171	HK Working Day
Marine Works at WCR2							
S11-R2-1900	Complete remaining works of removing armour stone, berm stone and vertical seawall down to +1.5mPD	31	31	21-Sep-17	22-Oct-17	-186	Calendar Day
Marine Works at WCR3							
S11-R3-2060	WCR3 - Remaining Installation of the Corrosion Monitoring System	18	18	11-Sep-17	28-Sep-17	-171	HK Working Day
Demolition Works							
S11-DEMO-1310	Demolition of abandoned seawall down to +1.5mPD - at the south of Tunnel Portion 5	12	12	28-Aug-17	08-Sep-17	-102	HK Working Day
Formation and Hard Landscaping Works							
S11-FM-5000A	Tunnel Portion 5 Backfilling (Sorted Public Fill or alternative filling material 66,000m3; 1400 to 2000 m3/d)	47	27	07-Jul-17 A	15-Aug-17	-465	Calendar Day
S11-FM-5000B	Completion of Tunnel Portion 5 Backfilling	0	0		15-Aug-17	-465	Calendar Day
Misc. Works							
Removal of Temporary D-Wall CH 3630 to CH 3710							
S11-RTC-3340	Preparation for D-Wall Cutting - Advance Coring inside D Wall (73 nos. for cutting , 2 machines @ 1no./machine/day)	50	50	14-Aug-17*	06-Oct-17	-631	HK Working Day
S11-RTC-3345	Preparation for D-Wall Cutting - Full Coring inside D Wall (144 nos. for lifting, 2 machines@1no./machine/day)	87	87	06-Oct-17	09-Jan-18	-631	HK Working Day
Hung Hing Road Flyover Reinstatement							
S11-HH-4040	Reinstatement of HHR Flyover - Procurement of Movement Joint for the bridge	60	30	20-Jun-17 A	18-Aug-17	-780	Calendar Day
S11-HH-4042	Reinstatement of HHR Flyover - Delivery of Movement Joint for the bridge	45	45	19-Aug-17	02-Oct-17	-780	Calendar Day



◆ Milestone
◆ Critical Milestones
Current Works
Critical Works
Remaining Level of Effort

CHUN WO - CRGL

JOINT VENTURE

CEDD CONTRACT NO. HK/2009/02

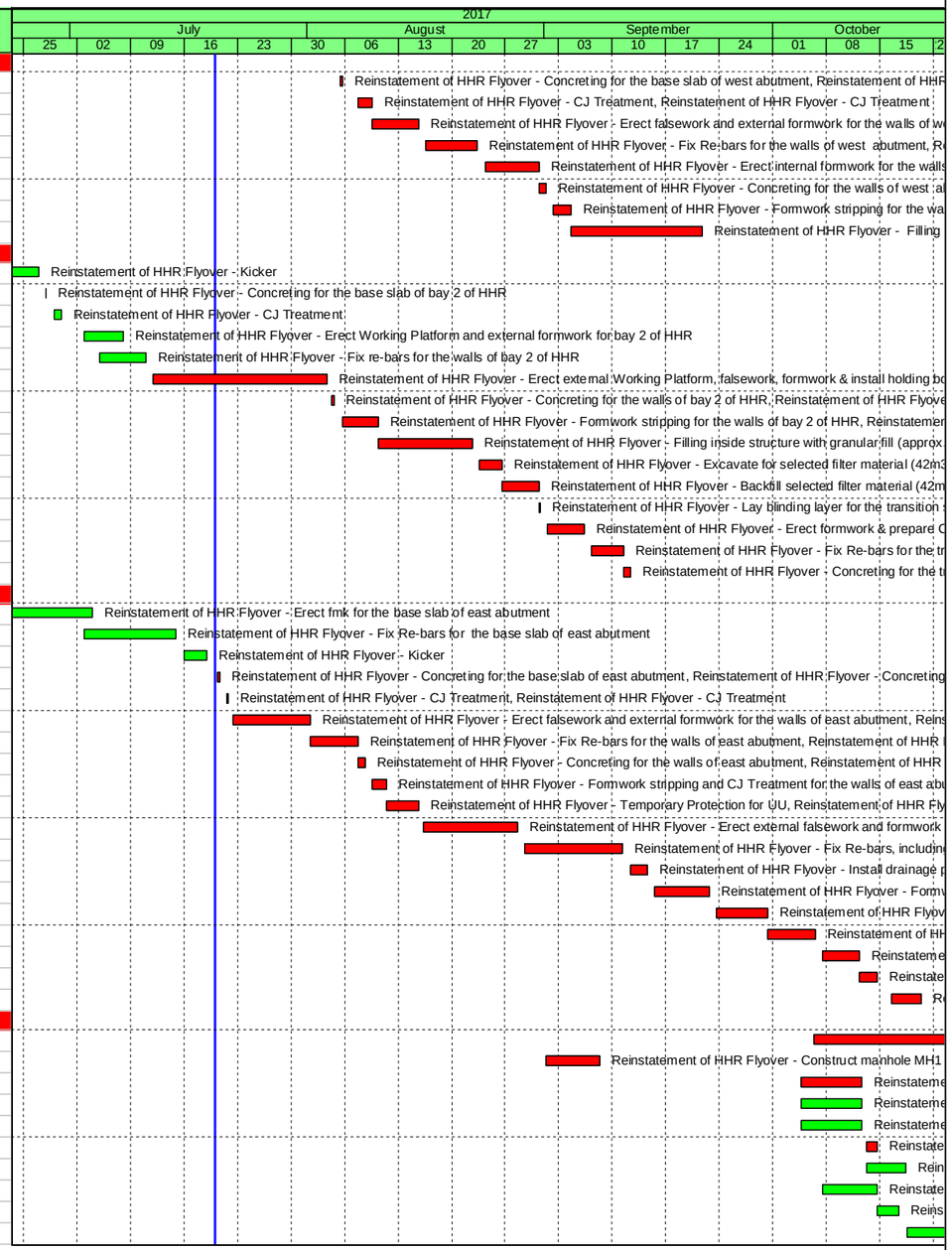
WD II - Central Wanchai Bypass at Wan Chai East (Contract 2)

3-MONTH ROLLING PROGRAMME (data date 20-Jul-17)

Date	Revision	Checked	Approved

CEDD CONTRACT HK/2009/02

Activity ID	Activity Name	Ori Dur	Rem Dur	Scheduled/ Actual Start	Scheduled/ Actual Finish	Total Float	Calendar
Hung Hing Road Flyover - Bay 1 (West Side) CH 3709-3732							
S11-HH-4140	Reinstatement of HHR Flyover - Concreting for the base slab of west abutment	1	1	05-Aug-17	05-Aug-17	-759	HK Working Day
S11-HH-4142	Reinstatement of HHR Flyover - CJ Treatment	2	2	07-Aug-17	09-Aug-17	-759	HK Working Day
S11-HH-4145	Reinstatement of HHR Flyover - Erect falsework and external formwork for the walls of west abutment	6	6	09-Aug-17	15-Aug-17	-759	HK Working Day
S11-HH-4150	Reinstatement of HHR Flyover - Fix Re-bars for the walls of west abutment	6	6	16-Aug-17	23-Aug-17	-759	HK Working Day
S11-HH-4152	Reinstatement of HHR Flyover - Erect internal formwork for the walls of west abutment	7	7	24-Aug-17	31-Aug-17	-759	HK Working Day
S11-HH-4155	Reinstatement of HHR Flyover - Concreting for the walls of west abutment	1	1	31-Aug-17	01-Sep-17	-759	HK Working Day
S11-HH-4159	Reinstatement of HHR Flyover - Formwork stripping for the walls of west abutment	2	2	02-Sep-17	04-Sep-17	-759	HK Working Day
S11-HH-4165	Reinstatement of HHR Flyover - Filling inside structure with granular fill (1.63m thick @ 0.15m/layer)	17	17	04-Sep-17	21-Sep-17	-759	HK Working Day
Hung Hing Road Flyover - Bay 2 (Middle) CH 3732-3747							
S11-HH-5049	Reinstatement of HHR Flyover - Kicker	3	0	07-Jun-17 A	27-Jun-17 A		HK Working Day
S11-HH-5050	Reinstatement of HHR Flyover - Concreting for the base slab of bay 2 of HHR	1	0	28-Jun-17 A	28-Jun-17 A		HK Working Day
S11-HH-5060	Reinstatement of HHR Flyover - CJ Treatment	1	0	29-Jun-17 A	30-Jun-17 A		HK Working Day
S11-HH-5070	Reinstatement of HHR Flyover - Erect Working Platform and external formwork for bay 2 of HHR	7	0	03-Jul-17 A	08-Jul-17 A		HK Working Day
S11-HH-5071	Reinstatement of HHR Flyover - Fix re-bars for the walls of bay 2 of HHR	7	0	05-Jul-17 A	11-Jul-17 A		HK Working Day
S11-HH-5072	Reinstatement of HHR Flyover - Erect external Working Platform, falsework, formwork & install holding bolt	12	15	12-Jul-17 A	03-Aug-17	-736	HK Working Day
S11-HH-5073	Reinstatement of HHR Flyover - Concreting for the walls of bay 2 of HHR	1	1	04-Aug-17	04-Aug-17	-736	HK Working Day
S11-HH-5075	Reinstatement of HHR Flyover - Formwork stripping for the walls of bay 2 of HHR	4	4	05-Aug-17	10-Aug-17	-736	HK Working Day
S11-HH-5077	Reinstatement of HHR Flyover - Filling inside structure with granular fill (approx. 470 m3) and install sub-soil drain	12	12	10-Aug-17	22-Aug-17	-736	HK Working Day
S11-HH-5078	Reinstatement of HHR Flyover - Excavate for selected filter material (42m3)	3	3	23-Aug-17	26-Aug-17	-736	HK Working Day
S11-HH-5079	Reinstatement of HHR Flyover - Backfill selected filter material (42m3)	4	4	26-Aug-17	31-Aug-17	-736	HK Working Day
S11-HH-5080	Reinstatement of HHR Flyover - Lay blinding layer for the transition slab	1	1	31-Aug-17	31-Aug-17	-671	HK Working Day
S11-HH-5085	Reinstatement of HHR Flyover - Erect formwork & prepare CJ for the transition slab	4	4	01-Sep-17	06-Sep-17	-671	HK Working Day
S11-HH-5086	Reinstatement of HHR Flyover - Fix Re-bars for the transition slab	4	4	07-Sep-17	11-Sep-17	-671	HK Working Day
S11-HH-5087	Reinstatement of HHR Flyover - Concreting for the transition slab	1	1	11-Sep-17	12-Sep-17	-671	HK Working Day
Hung Hing Road Flyover - Bay 3 (East Side) CH 3747-3770							
S11-HH-5159	Reinstatement of HHR Flyover - Erect fmk for the base slab of east abutment	4	0	01-Jun-17 A	04-Jul-17 A		HK Working Day
S11-HH-5160	Reinstatement of HHR Flyover - Fix Re-bars for the base slab of east abutment	7	0	03-Jul-17 A	15-Jul-17 A		HK Working Day
S11-HH-5163	Reinstatement of HHR Flyover - Kicker	4	0	16-Jul-17 A	19-Jul-17 A		HK Working Day
S11-HH-5165	Reinstatement of HHR Flyover - Concreting for the base slab of east abutment	1	1	20-Jul-17	20-Jul-17	-733	HK Working Day
S11-HH-5170	Reinstatement of HHR Flyover - CJ Treatment	1	1	21-Jul-17	21-Jul-17	-733	HK Working Day
S11-HH-5172	Reinstatement of HHR Flyover - Erect falsework and external formwork for the walls of east abutment	10	10	22-Jul-17	01-Aug-17	-733	HK Working Day
S11-HH-5173	Reinstatement of HHR Flyover - Fix Re-bars for the walls of east abutment	6	6	01-Aug-17	07-Aug-17	-733	HK Working Day
S11-HH-5174	Reinstatement of HHR Flyover - Concreting for the walls of east abutment	1	1	07-Aug-17	08-Aug-17	-733	HK Working Day
S11-HH-5176	Reinstatement of HHR Flyover - Formwork stripping and CJ Treatment for the walls of east abutment	2	2	09-Aug-17	11-Aug-17	-733	HK Working Day
S11-HH-5178	Reinstatement of HHR Flyover - Temporary Protection for UU	4	4	11-Aug-17	15-Aug-17	-733	HK Working Day
S11-HH-5180	Reinstatement of HHR Flyover - Erect external falsework and formwork including bridge deck upstand	12	12	16-Aug-17	28-Aug-17	-733	HK Working Day
S11-HH-5182	Reinstatement of HHR Flyover - Fix Re-bars, including end wall	12	12	29-Aug-17	11-Sep-17	-733	HK Working Day
S11-HH-5184	Reinstatement of HHR Flyover - Install drainage pipe inside wall between gullies	3	3	12-Sep-17	14-Sep-17	-733	HK Working Day
S11-HH-5186	Reinstatement of HHR Flyover - Formwork for the end wall and internal wall of east abutment	7	7	15-Sep-17	22-Sep-17	-733	HK Working Day
S11-HH-5188	Reinstatement of HHR Flyover - Erect falsewok for the top slab	6	6	23-Sep-17	30-Sep-17	-733	HK Working Day
S11-HH-5190	Reinstatement of HHR Flyover - Erect formwork for the top slab	4	4	30-Sep-17	06-Oct-17	-733	HK Working Day
S11-HH-5192	Reinstatement of HHR Flyover - Fix Re-bars for the top slab	4	4	07-Oct-17	12-Oct-17	-733	HK Working Day
S11-HH-5194	Reinstatement of HHR Flyover - Install holding down bolt	3	3	12-Oct-17	14-Oct-17	-733	HK Working Day
S11-HH-5196	Reinstatement of HHR Flyover - Formwork for the bridge deck upstand	4	4	16-Oct-17	20-Oct-17	-733	HK Working Day
Hung Hing Road Flyover - Reinstatement of Utilities and Drainage							
S11-HH-4052	Reinstatement of HHR Flyover - Cover up all utilities and complete paving blocks along footpath	45	45	06-Oct-17	23-Nov-17	-733	HK Working Day
S11-HH-4062	Reinstatement of HHR Flyover - Construct manhole MH1 & MH2	7	7	01-Sep-17	08-Sep-17	-736	HK Working Day
S11-HH-4064	Reinstatement of HHR Flyover - Lay drainage works G2 to MH2, including testing	7	7	04-Oct-17	12-Oct-17	-759	HK Working Day
S11-HH-4066	Reinstatement of HHR Flyover - Lay drainage works MH2 to MH1, including testing	7	7	04-Oct-17	12-Oct-17	747	HK Working Day
S11-HH-4068	Reinstatement of HHR Flyover - Lay drainage works G1 to MH1, including testing	7	7	04-Oct-17	12-Oct-17	747	HK Working Day
S11-HH-4069	Reinstatement of HHR Flyover - Manhole Final Works after acceptance of pipes	2	2	13-Oct-17	14-Oct-17	-759	HK Working Day
S11-HH-4070	Reinstatement of HHR Flyover - Backfill on top of drainage pipe at Bay 1 & 2	5	5	13-Oct-17	18-Oct-17	747	HK Working Day
S11-HH-4071	Reinstatement of HHR Flyover - Laying drainage pipe (300mm dia. pipe - MH2 to MH20), 10 m long including testing	7	7	07-Oct-17	14-Oct-17	709	HK Working Day
S11-HH-4072	Reinstatement of HHR Flyover - Backfill on top of drainage pipe outside Bay 1 & 2 - Layer 1	2	2	14-Oct-17	17-Oct-17	709	HK Working Day
S11-HH-4073	Reinstatement of HHR Flyover - SRT for drainage pipe - Layer 1	10	10	18-Oct-17	30-Oct-17	709	HK Working Day



◆ Milestone

◆ Critical Milestones

Current Works

Critical Works

Remaining Level of Effort

CHUN WO - CRGL

JOINT VENTURE

CEDD CONTRACT NO. HK/2009/02

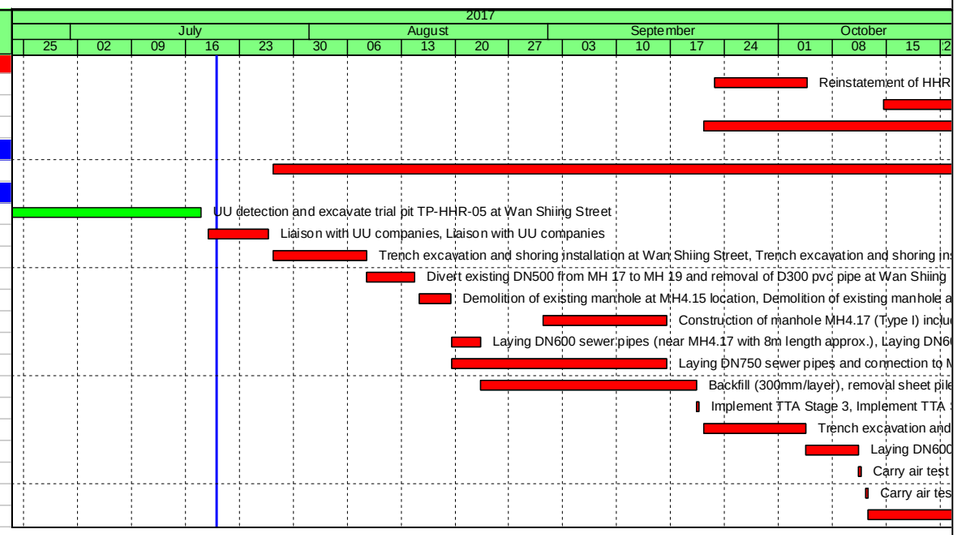
WD II - Central Wanchai Bypass at Wan Chai East (Contract 2)

3-MONTH ROLLING PROGRAMME (data date 20-Jul-17)

Date	Revision	Checked	Approved

CEDD CONTRACT HK/2009/02

Activity ID	Activity Name	Ori Dur	Rem Dur	Scheduled/ Actual Start	Scheduled/ Actual Finish	Total Float	Calendar
Hung Hing Road Flyover - Road Works and Street Furniture							
S11-HH-4078	Reinstatement of HHR Flyover - Trimming road formation	10	10	22-Sep-17	04-Oct-17	-759	HK Working Day
S11-HH-4079	Reinstatement of HHR Flyover - Road Kerb (390m @ 30m/day)	15	15	14-Oct-17	01-Nov-17	-759	HK Working Day
S11-HH-4092	Reinstatement of HHR Flyover - Install steel parapet (390m @8m/day)	55	55	21-Sep-17	21-Nov-17	-734	HK Working Day
Reinstatement of Box Culvert O							
S11-BCO-2015	Box Culvert O Reinstatement - Site Investigation, Design and Approval of Box Culvert O (Bay 13 - Bay 14)	114	114	27-Jul-17	25-Nov-17	-337	HK Working Day
Wan Shing Street Sewerage Works							
S11-SW-1081	UU detection and excavate trial pit TP-HHR-05 at Wan Shiing Street	4	0	17-Jun-17 A	18-Jul-17 A		HK Working Day
S11-SW-1082	Liaison with UU companies	7	7	19-Jul-17 A	26-Jul-17	-264	HK Working Day
S11-SW-1083	Trench excavation and shoring installation at Wan Shiing Street	12	12	27-Jul-17	08-Aug-17	-264	HK Working Day
S11-SW-1084	Divert existing DN500 from MH 17 to MH 19 and removal of D300 pvc pipe at Wan Shiing Street	6	6	08-Aug-17	14-Aug-17	-264	HK Working Day
S11-SW-1085	Demolition of existing manhole at MH4.15 location	5	5	15-Aug-17	19-Aug-17	-264	HK Working Day
S11-SW-1086	Construction of manhole MH4.17 (Type I) including DN600 inlet	16	16	31-Aug-17	16-Sep-17	-261	HK Working Day
S11-SW-1087	Laying DN600 sewer pipes (near MH4.17 with 8m length approx.)	3	3	19-Aug-17	23-Aug-17	-264	HK Working Day
S11-SW-1088	Laying DN750 sewer pipes and connection to MH4.19	27	27	19-Aug-17	16-Sep-17	-261	HK Working Day
S11-SW-1089	Backfill (300mm/layer), removal sheet piles and reinstate the pavement	27	27	23-Aug-17	20-Sep-17	-264	HK Working Day
S11-SW-1090	Implement TTA Stage 3	1	1	20-Sep-17	20-Sep-17	-264	HK Working Day
S11-SW-1091	Trench excavation and shoring installation at Wan Shiing Street	12	12	21-Sep-17	04-Oct-17	-264	HK Working Day
S11-SW-1092	Laying DN600 clay pipes in the middle of mH4.15 & MH4.17 (3m approx.)	5	5	04-Oct-17	11-Oct-17	-264	HK Working Day
S11-SW-1094	Carry air test & CCTV to DN600 clay pipes	1	1	11-Oct-17	11-Oct-17	-264	HK Working Day
S11-SW-1094a	Carry air test & CCTV to DN750 pipes	1	1	12-Oct-17	12-Oct-17	-264	HK Working Day
S11-SW-1095	Backfill the trench (300mm/layer) and remove sheet piles	21	21	12-Oct-17	04-Nov-17	-264	HK Working Day



◆ Milestone
◆ Critical Milestones
Current Works
Critical Works
Remaining Level of Effort

CHUN WO - CRGL

JOINT VENTURE

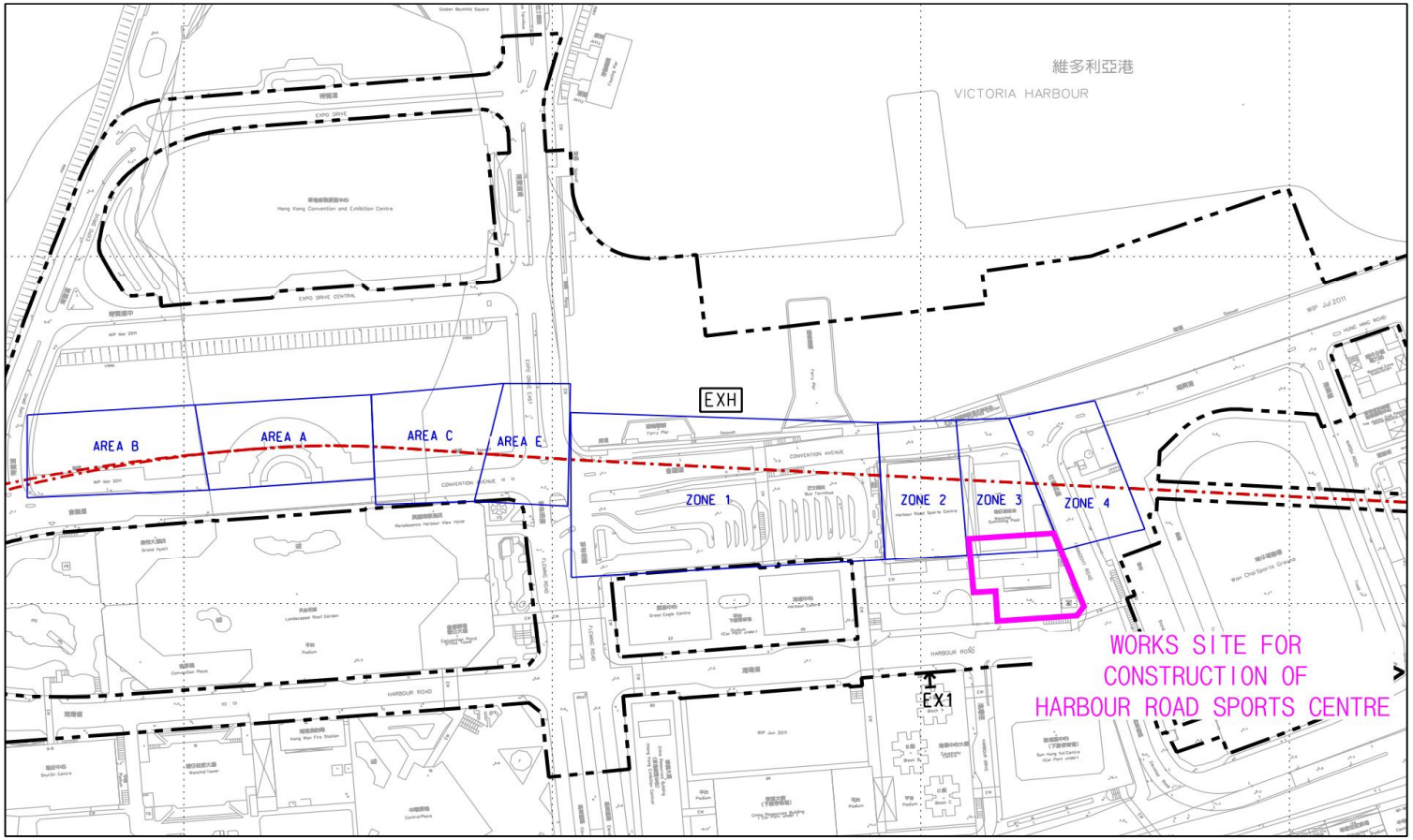
CEDD CONTRACT NO. HK/2009/02

WD II - Central Wanchai Bypass at Wan Chai East (Contract 2)

3-MONTH ROLLING PROGRAMME (data date 20-Jul-17)

Date	Revision	Checked	Approved

Appendix D - Details of the Concurrent Projects
Location of Works Site for Construction of Harbour Road Sports Centre



Appendix E1
Detailed Noise Calculation for C&C Method at Zone 2

Appendix E1 - Detailed Noise Calculation for C&C Method at Zone 2

NSR: EX1 Causeway Centre, Block A

Package	Area/Zone	Construction Activity	Construction Period	SWL	Distance / m [1][2]	SPL	2015												2016												2017											
							Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4		
							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
							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
07 EXH		**EXH Structure**																																							
	Area E	(a) Site Hoarding Erection	(06/2016)	108	248	55																		55																	
	Area E	(b) Roof Slab Construction	(01/2018 - 02/2018)	112	248	59																																			
	Area E	(c) Excavation	(05/2018 - 10/2018)	113	248	60																																			
	Area E	(d) Construction of Internal Structures of Box Station	(11/2018 - 04/2019)	112	248	59																																			
	Area C	(e) Construction of Entrance and Vent Shafts	(01/2019 - 02/2019)	112	293	57																																			
	Area C	(f) Construction of Station Box Roof Slab	(03/2019 - 04/2019)	112	293	58																																			
	Area E	(h) Utility diversion	(07/2016 - 10/2016)	100	248	47																			47	47	47	47													
		(i) Pipe Pile Construction																																							
	Area E	> Stage 1	(10/2016 - 12/2016)	111	248	58																						58	58	58											
	Area E	> Stage 2	(04/2017 - 08/2017)	111	248	58																												58	58	58	58	58				
06 EXH to Shaft		**Tunnel at West to EXH**																																							
		(a) Site Formation																																							
	Areas A & B	> Areas A & B	(06/2015)	120	>300	-						-																													
	Area A	> Areas A	(09/2015)	120	>300	-									-																										
	Area C	> Area C - 1	(01/2016)	120	293	65													65																							
	Area C	> Area C - 2	(07/2016)	120	293	65																			65																
	Areas A & B	(b) Site Hoarding Erection	(06/2015)	108	>300	-						-																													
	Areas A & B	(c) Excavation inside SCL tunnels protection works	(06/2016 - 10/2017)	116	>300	-																		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(d) Tunnel Box Structure Construction																																							
	Area A	> Area A	(11/2017 - 11/2018)	115	>300	-																																		-	-
	Area B	> Area B	(11/2017 - 12/2019)	115	>300	-																																		-	-
		(e) Diaphragm Wall Construction																																							
	Area A	> Area A	(10/2015 - 04/2016)	114	>300	-										-	-	-	-	-	-	-																			
	Area C	> Area C	(03/2016 - 05/2017)	114	293	60															60	60	60	60	60	60	60	60	60	60	60	60	60	60	60						
	Area C	(f) Excavation	(06/2017 - 05/2018)	115	293	61																																			
	Area C	(g) Tunnel Box Structure Construction	(06/2018 - 02/2019)	112	293	58																																			
		(h) Backfilling and Superstructure																																							
	Area C	> Stage 1	(02/2019 - 02/2020)	112	293	58																																			
	Area C	> Stage 2	(06/2019 - 08/2019)	112	293	58																																			
Barging Point	Barging Point	**Barging Point at Wan Chai Ex-PCWA**																																							
		Construction/Set up	(09/2016 - 07/2017)	106	>300	-																					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Spoil Disposal	(08/2017 - 12/2020)	113	>300	-																																			
	Zone 1	**Wan Chai PTI Area**																																							
		Site clearance, Site Hoarding Erection and utility diversion	(06/2015 - 07/2015)	113	124	66						66	66																													
		Demolition of existing Wan Chai Ferry Pier footbridge																																							
		> Stage 1	(06/2015 - 06/2016)	109	124	62						62	62	62	62	62	62	62	62	62	62	62	62	62																	
		> Stage 2	(01/2017)	115	124	68																									68											
		Construction of temporary Wan Chai Ferry Pier footbridge	(09/2015 - 12/2016)	108	124	61									61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61											
		Construction of Permanent Wan Chai Ferry Pier footbridge (Superstructure)	(08/2019)	110	124	63																																			
		Demolition of Temporary Wan Chai Ferry Pier footbridge	(09/2019 - 12/2019)	117	124	70																																			
		Piling works (PPW and H-piles)																																							
		> Stage 1 (TTM Stage 2)	(07/2015 - 04/2016)	109	124	62							62	62	62	62	62	62	62	62	62	62																			
		> Stage 2 (TTM Stage 3a & 3b)	(06/2016 - 10/2016)	108	124	61																		61	61	61	61	61													
		> Stage 3 (TTM Stage 3C)	(12/2016 - 04/2017)	109	124	62																							62	62	62	62	62								
		Diaphragm wall construction																																							
		> Stage 1 (TTM Stage 2)	(08/2015 - 01/2016)	110	124	63								63	63	63	63	63	63																						
		> Stage 2 (TTM Stage 3a/3b/3c & 5)	(02/2016 - 03/2017)	109	124	62														62	62	62	62	62	62	62	62	62	62	62	62	62	62								
		Excavation & ELS installation	(03/2017 - 05/2018)	116	124	69																											69	69	69	69	69	69	69	69	69
		Construction of Internal Structure of Box Station	(06/2018 - 02/2019)	114	124	67																																			
		Construction of Entrances and Structure	(03/2019 - 08/2019)	112	124	65																																			
	Zone 2	**Harbour Road Sports Centre Area**																																							
		Demolition of Harbour Road Sports Centre (HRSC)	(06/2017 - 09/2017)	107	92	63																															63	63	63	63			
		Site Hoarding Erection & Pile Removal	(10/2017)	109	92	65																																		65		
		Piling works (PPW and H-piles)	(11/2017 - 02/2018)	110	92	66																																			66	66
		Excavation & ELS installation (C&C Method)	(03/2018 - 02/2019)	114	92	69																																			
		Construction of Internal Structure of Box Station	(03/2019 - 11/2019)	112	92	68																																			
		Construction of Entrances and Ground structure	(12/2019 - 02/2020)	114	92	69																																			
	Zone 3	**Wan Chai Swimming Pool Area**																																							
		Demolition of Wan Chai Swimming Pool	(12/2015 - 03/2016)	105	100	60												60	60	60	60																				
		Site Hoarding Erection & Pile Removal	(08/2016 - 09/2016)	107	100	62																				62	62														
		Piling works (H-piles)	(03/2016 - 04/2016)	108	100	63															63	63																			
		Diaphragm wall construction	(05/2016 - 07/2017)	106	100	61																	61	61	61	61	61	61	61	61	61	61	61	61	61						
		Excavation & ELS installation	(08/2017 - 08/2018)	114	100	69																																			
		Construction of Internal Structure of Box Station	(09/2018 - 03/2019)	111	100	66																																			
		Construction of Vent Shaft and Ground structure	(04/2019 - 09/2019)	111	100	66																																			
	Zone 4	**Wan Chai Sports Ground Area**																																							
		Piling works (H-piles) - Wan Chai Sports Ground (WCSG)	(08/2016)	115	124	68																				68															
		Diaphragm wall construction - Phase 1 WCSG	(12/2015 - 07/2016)	106	124	59												59	59	59	59	59	59	59																	
		Piling works (PPW and H-piles) - Tonnochy Road	(12/2016 - 06/2017)	110	124	63																						63	63	63	63	63	63	63						
		Excavation & ELS installation																																							
		> Underground (no noise cover)	(06/2017 - 07/2018)	113	124	66																															66	66	66	66	66	66	66
		> Underground (with full noise cover over Tonnochy Road)	(08/2018 - 04/2019)	106	124	59																																			
		> At surface	(08/2018 - 04/2019)	112	124	65																																			
		Construction of Internal Structure of Box Station	(10/2018 - 04/2019)	108	124	61																																			
		Reprovision of WCSG grandstand	(05/2019 - 09/2020)	115	124	68																																			
		Noise Level from Works Contract 1123, $L_{eq\ (30min)}$, dB(A):					-	-	-	-	-	67	69	67	68	68	68	69	71	69	70	70	69	70	70	72	69	68	68	70	71	69	72	72	71	73	72	74	74	74	74	74
	Construction of Harbour Road Sports Centre [4]	Site Hoarding Erection for Harbour Road Sports Centre	(08/2015)	106	77	63							63																													
		Demolition of Wan Chai Swimming Pool and filtration plant room	(09/2015 - 12/2015)	106	77	63								63	63	63	63																									
		Piling works for Harbour Road Sports Centre	(12/2015 - 07/2016)	109	77	66												66	66	66	66	66	66	66	66																	
		Superstructure for Harbour Road Sports Centre	(06/2016 - 02/2017)	102	77	59																		59	59	59	59	59	59	59	59	59	59									
		Noise Level from Construction of Harbour Road Sports Centre, $L_{eq\ (30min)}$, dB(A)[4]:					-	-	-	-	-	-	-	63	63	63	63	68	66	66	66	66	66	67	67	59	59	59	59	59	59	59	-	-	-	-	-	-	-	-	-	-
		Cumulative Noise Level from Works Contract 1123 and Constrcution of Harbour Road Sports Centre, Leq (30min), dB(A):					-	-	-	-	-	67	69	69	69	69	69	72	72	71	72	71	71	71	72	72	69	69	68	70	72	69	72	72	71	73	72	74	74	74	74	74
Concurrent Works		**Noise Level from Construction of WDII, $L_{eq\ (30min)}$, dB(A)[3]:**					73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	-	-	-	-	-	-	-
		Cumulative Noise Level, $L_{eq\ (30min)}$, dB(A):					73	73	73	73	73	74	74	74	75	75	75	75	75	75	75	75	75	75	75	75	74	74	75	75	74	75	75	75	73	72	74	74	74	74	74

Remarks:

[1] For the calculation of sound pressure levels (SPL), the PMEs are assumed to be placed at the notional source position according to the "Technical Memorandum on Noise from Construction Work other than Percussive Piling" by EPD.

[2] Works further than 300 m from the NSR would not be assessed due to the large distance attentuation.

[3] The maximum mitigated noise level predicted at EX1 in the approved EIA Report for "Wan Chai Development Phase II and Central-Wan Chai Bypass" (WDII&CWB EIA Report) (Register No.: AEIAR-125/2008) has been adopted in this assessment.

Based on the construction programmes in the latest available monthly EM&A Report for WDII&CWB project (Sep 2017), the major construction works of WDII within 300m of the NSR were completed in May 2017.

[4] Noise impact from construction of Harbour Road Sports Centre was retrieved from the CNMMP for Works Contract 1126 as presented in **Appendix D**.

Appendix E1 - Detailed Noise Calculation for C&C Method at Zone 2

NSR: EX1 Causeway Centre, Block A

Package	Area/Zone	Construction Activity	Construction Period	SWL	Distance / m [1][2]	SPL	2018												2019												2020											
							Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4		
							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
							37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
07 EXH		**EXH Structure**																																							
	Area E	(a) Site Hoarding Erection	(06/2016)	108	248	55																																			
	Area E	(b) Roof Slab Construction	(01/2018 - 02/2018)	112	248	59	59	59																																	
	Area E	(c) Excavation	(05/2018 - 10/2018)	113	248	60					60	60	60	60	60	60																										
	Area E	(d) Construction of Internal Structures of Box Station	(11/2018 - 04/2019)	112	248	59											59	59	59	59	59	59																				
	Area C	(e) Construction of Entrance and Vent Shafts	(01/2019 - 02/2019)	112	293	57													57	57																						
	Area C	(f) Construction of Station Box Roof Slab	(03/2019 - 04/2019)	112	293	58															58	58																				
	Area E	(h) Utility diversion	(07/2016 - 10/2016)	100	248	47																																			
		(i) Pipe Pile Construction																																							
	Area E	> Stage 1	(10/2016 - 12/2016)	111	248	58																																			
	Area E	> Stage 2	(04/2017 - 08/2017)	111	248	58																																			
06 EXH to Shaft		**Tunnel at West to EXH**																																							
		(a) Site Formation																																							
	Areas A & B	> Areas A & B	(06/2015)	120	>300	-																																			
	Area A	> Areas A	(09/2015)	120	>300	-																																			
	Area C	> Area C - 1	(01/2016)	120	293	65																																			
	Area C	> Area C - 2	(07/2016)	120	293	65																																			
	Areas A & B	(b) Site Hoarding Erection	(06/2015)	108	>300	-																																			
	Areas A & B	(c) Excavation inside SCL tunnels protection works	(06/2016 - 10/2017)	116	>300	-																																			
		(d) Tunnel Box Structure Construction																																							
	Area A	> Area A	(11/2017 - 11/2018)	115	>300	-	-	-	-	-	-	-	-	-	-	-	-																								
	Area B	> Area B	(11/2017 - 12/2019)	115	>300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-												
		(e) Diaphragm Wall Construction																																							
	Area A	> Area A	(10/2015 - 04/2016)	114	>300	-																																			
	Area C	> Area C	(03/2016 - 05/2017)	114	293	60																																			
	Area C	(f) Excavation	(06/2017 - 05/2018)	115	293	61	61	61	61	61	61																														
	Area C	(g) Tunnel Box Structure Construction	(06/2018 - 02/2019)	112	293	58						58	58	58	58	58	58	58	58	58																					
		(h) Backfilling and Superstructure																																							
	Area C	> Stage 1	(02/2019 - 02/2020)	112	293	58														58	58	58	58	58	58	58	58	58	58	58	58											
	Area C	> Stage 2	(06/2019 - 08/2019)	112	293	58																		58	58	58																
Barging Point	Barging Point	**Barging Point at Wan Chai Ex-PCWA**																																							
		Construction/Set up	(09/2016 - 07/2017)	106	>300	-																																			
		Spoil Disposal	(08/2017 - 12/2020)	113	>300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Zone 1	**Wan Chai PTI Area**																																							
		Site clearance, Site Hoarding Erection and utility diversion	(06/2015 - 07/2015)	113	124	66																																			
		Demolition of existing Wan Chai Ferry Pier footbridge																																							
		> Stage 1	(06/2015 - 06/2016)	109	124	62																																			
		> Stage 2	(01/2017)	115	124	68																																			
		Construction of temporary Wan Chai Ferry Pier footbridge	(09/2015 - 12/2016)	108	124	61																																			
		Construction of Permanent Wan Chai Ferry Pier footbridge (Superstructure)	(08/2019)	110	124	63																				63															
		Demolition of Temporary Wan Chai Ferry Pier footbridge	(09/2019 - 12/2019)	117	124	70																					70	70	70	70												
		Piling works (PPW and H-piles)																																								
		> Stage 1 (TTM Stage 2)	(07/2015 - 04/2016)	109	124	62																																			
		> Stage 2 (TTM Stage 3a & 3b)	(06/2016 - 10/2016)	108	124	61																																			
		> Stage 3 (TTM Stage 3C)	(12/2016 - 04/2017)	109	124	62																																			
		Diaphragm wall construction																																							
		> Stage 1 (TTM Stage 2)	(08/2015 - 01/2016)	110	124	63																																			
		> Stage 2 (TTM Stage 3a/3b/3c & 5)	(02/2016 - 03/2017)	109	124	62																																			
		Excavation & ELS installation	(03/2017 - 05/2018)	116	124	69	69	69	69	69	69																														
		Construction of Internal Structure of Box Station	(06/2018 - 02/2019)	114	124	67						67	67	67	67	67	67	67	67	67																					
		Construction of Entrances and Structure	(03/2019 - 08/2019)	112	124	65															65	65	65	65	65	65																
	Zone 2	**Harbour Road Sports Centre Area**																																							
		Demolition of Harbour Road Sports Centre (HRSC)	(06/2017 - 09/2017)	107	92	63																																			
		Site Hoarding Erection & Pile Removal	(10/2017)	109	92	65																																			
		Piling works (PPW and H-piles)	(11/2017 - 02/2018)	110	92	66	66	66																																	
		Excavation & ELS installation (C&C Method)	(03/2018 - 02/2019)	114	92	69			69	69	69	69	69	69	69	69	69	69	69	69																					
		Construction of Internal Structure of Box Station	(03/2019 - 11/2019)	112	92	68															68	68	68	68	68	68	68	68	68													
		Construction of Entrances and Ground structure	(12/2019 - 02/2020)	114	92	69																									69	69	69									
	Zone 3	**Wan Chai Swimming Pool Area**																																							
		Demolition of Wan Chai Swimming Pool	(12/2015 - 03/2016)	105	100	60																																			
		Site Hoarding Erection & Pile Removal	(08/2016 - 09/2016)	107	100	62																																			
		Piling works (H-piles)	(03/2016 - 04/2016)	108	100	63																																			
		Diaphragm wall construction	(05/2016 - 07/2017)	106	100	61																																			
		Excavation & ELS installation	(08/2017 - 08/2018)	114	100	69	69	69	69	69	69	69	69	69																											
		Construction of Internal Structure of Box Station	(09/2018 - 03/2019)	111	100	66									66	66	66	66	66	66	66																				
		Construction of Vent Shaft and Ground structure	(04/2019 - 09/2019)	111	100	66																66	66	66	66	66	66														
	Zone 4	**Wan Chai Sports Ground Area**																																							
		Piling works (H-piles) - Wan Chai Sports Ground (WCSG)	(08/2016)	115	124	68																																			
		Diaphragm wall construction - Phase 1 WCSG	(12/2015 - 07/2016)	106	124	59																																			
		Piling works (PPW and H-piles) - Tonnochy Road	(12/2016 - 06/2017)	110	124	63																																			
		Excavation & ELS installation																																							
		> Underground (no noise cover)	(06/2017 - 07/2018)	113	124	66	66	66	66	66	66	66	66																												
		> Underground (with full noise cover over Tonnochy Road)	(08/2018 - 04/2019)	106	124	59								59	59	59	59	59	59	59	59	59																			
		> At surface	(08/2018 - 04/2019)	112	124	65								65	65	65	65	65	65	65	65	65																			
		Construction of Internal Structure of Box Station	(10/2018 - 04/2019)	108	124	61										61	61	61	61	61	61	61																			
		Reprovision of WCSG grandstand	(05/2019 - 09/2020)	115	124	68																	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68
		Noise Level from Works Contract 1123, $L_{eq\ (30min)}$, dB(A):					74	74	75	75	75	74	74	74	74	74	74	74	74	74	73	73	73	73	73	74	74	74	74	74	72	72	68	68	68	68	68	68	68	-	-	-
	Construction of Harbour Road Sports Centre [4]	Site Hoarding Erection for Harbour Road Sports Centre	(08/2015)	106	77	63																																			
		Demolition of Wan Chai Swimming Pool and filtration plant room	(09/2015 - 12/2015)	106	77	63																																			
		Piling works for Harbour Road Sports Centre	(12/2015 - 07/2016)	109	77	66																																			
		Superstructure for Harbour Road Sports Centre	(06/2016 - 02/2017)	102	77	59																																			
		Noise Level from Construction of Harbour Road Sports Centre, $L_{eq\ (30min)}$, dB(A)[4]:					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Cumulative Noise Level from Works Contract 1123 and Constrcution of Harbour Road Sports Centre, Leq (30min), dB(A):					74	74	75	75	75	74	74	74	74	74	74	74	74	74	73	73	73	73	73	74	74	74	74	74	72	72	68	68	68	68	68	68	68	-	-	-
Concurrent Works		**Noise Level from Construction of WDII, $L_{eq\ (30min)}$, dB(A)[3]:**					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Cumulative Noise Level, $L_{eq\ (30min)}$, dB(A):					74	74	75	75	75	74	74	74	74	74	74	74	74	74	73	73	73	73	73	74	74	74	74	74	72	72	68	68	68	68	68	68	68	-	-	-

Remarks:

[1] For the calculation of sound pressure levels (SPL), the PMEs are assumed to be placed at the notional source position according to the "Technical Memorandum on Noise from Construction Work other than Percussive Piling" by EPD.

[2] Works further than 300 m from the NSR would not be assessed due to the large distance attentuation.

[3] The maximum mitigated noise level predicted at EX1 in the approved EIA Report for "Wan Chai Development Phase II and Central-Wan Chai Bypass" (WDII&CWB EIA Report) (Register No.: AEIAR-125/2008) has been adopted in this assessment.

Based on the construction programmes in the latest available monthly EM&A Report for WDII&CWB project (Sep 2017), the major construction works of WDII within 300m of the NSR were completed in May 2017.

[4] Noise impact from construction of Harbour Road Sports Centre was retrieved from the CNMMP for Works Contract 1126 as presented in **Appendix D**.

Appendix E2
Detailed Noise Calculation for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

Appendix E2 - Detailed Noise Calculation for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

NSR: EX1 Causeway Centre, Block A

Package	Area/Zone	Construction Activity	Construction Period	SWL	Distance / m [1][2]	SPL	2015												2016												2017											
							Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4		
							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
							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
07 EXH		**EXH Structure**																																							
	Area E	(a) Site Hoarding Erection	(06/2016)	108	248	55																		55																	
	Area E	(b) Roof Slab Construction	(01/2018 - 02/2018)	112	248	59																																			
	Area E	(c) Excavation	(05/2018 - 10/2018)	113	248	60																																			
	Area E	(d) Construction of Internal Structures of Box Station	(11/2018 - 04/2019)	112	248	59																																			
	Area C	(e) Construction of Entrance and Vent Shafts	(01/2019 - 02/2019)	112	293	57																																			
	Area C	(f) Construction of Station Box Roof Slab	(03/2019 - 04/2019)	112	293	58																																			
	Area E	(h) Utility diversion	(07/2016 - 10/2016)	100	248	47																			47	47	47	47													
		(i) Pipe Pile Construction																																							
	Area E	> Stage 1	(10/2016 - 12/2016)	111	248	58																						58	58	58											
	Area E	> Stage 2	(04/2017 - 08/2017)	111	248	58																									58	58	58	58	58						
06 EXH to Shaft		**Tunnel at West to EXH**																																							
		(a) Site Formation																																							
	Areas A & B	> Areas A & B	(06/2015)	120	>300	-						-																													
	Area A	> Areas A	(09/2015)	120	>300	-									-																										
	Area C	> Area C - 1	(01/2016)	120	293	65													65																							
	Area C	> Area C - 2	(07/2016)	120	293	65																			65																
	Areas A & B	(b) Site Hoarding Erection	(06/2015)	108	>300	-						-																													
	Areas A & B	(c) Excavation inside SCL tunnels protection works	(06/2016 - 10/2017)	116	>300	-																		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		(d) Tunnel Box Structure Construction																																							
	Area A	> Area A	(11/2017 - 11/2018)	115	>300	-																																		-	-
	Area B	> Area B	(11/2017 - 12/2019)	115	>300	-																																		-	-
		(e) Diaphragm Wall Construction																																							
	Area A	> Area A	(10/2015 - 04/2016)	114	>300	-										-	-	-	-	-	-	-																			
	Area C	> Area C	(03/2016 - 05/2017)	114	293	60															60	60	60	60	60	60	60	60	60	60	60	60	60	60	60						
	Area C	(f) Excavation	(06/2017 - 05/2018)	115	293	61																																	61	61	61	61	61	61	61
	Area C	(g) Tunnel Box Structure Construction	(06/2018 - 02/2019)	112	293	58																																			
		(h) Backfilling and Superstructure																																							
	Area C	> Stage 1	(02/2019 - 02/2020)	112	293	58																																			
	Area C	> Stage 2	(06/2019 - 08/2019)	112	293	58																																			
Barging Point	Barging Point	**Barging Point at Wan Chai Ex-PCWA**																																							
		Construction/Set up	(09/2016 - 07/2017)	106	>300	-																					-	-	-	-	-	-	-	-	-	-					
		Spoil Disposal	(08/2017 - 12/2020)	113	>300	-																																	-	-	-	-	-
	Zone 1	**Wan Chai PTI Area**																																							
		Site clearance, Site Hoarding Erection and utility diversion	(06/2015 - 07/2015)	113	124	66						66	66																													
		Demolition of existing Wan Chai Ferry Pier footbridge																																							
		> Stage 1	(06/2015 - 06/2016)	109	124	62						62	62	62	62	62	62	62	62	62	62	62	62	62																	
		> Stage 2	(01/2017)	115	124	68																									68											
		Construction of temporary Wan Chai Ferry Pier footbridge	(09/2015 - 12/2016)	108	124	61									61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61											
		Construction of Permanent Wan Chai Ferry Pier footbridge (Superstructure)	(08/2019)	110	124	63																																			
		Demolition of Temporary Wan Chai Ferry Pier footbridge	(09/2019 - 12/2019)	117	124	70																																			
		Piling works (PPW and H-piles)																																							
		> Stage 1 (TTM Stage 2)	(07/2015 - 04/2016)	109	124	62							62	62	62	62	62	62	62	62	62	62																			
		> Stage 2 (TTM Stage 3a & 3b)	(06/2016 - 10/2016)	108	124	61																		61	61	61	61	61													
		> Stage 3 (TTM Stage 3C)	(12/2016 - 04/2017)	109	124	62																							62	62	62	62	62								
		Diaphragm wall construction																																							
		> Stage 1 (TTM Stage 2)	(08/2015 - 01/2016)	110	124	63								63	63	63	63	63	63																						
		> Stage 2 (TTM Stage 3a/3b/3c & 5)	(02/2016 - 03/2017)	109	124	62														62	62	62	62	62	62	62	62	62	62	62	62	62									
		Excavation & ELS installation	(03/2017 - 05/2018)	116	124	69																									69	69	69	69	69	69	69	69	69	69	69
		Construction of Internal Structure of Box Station	(06/2018 - 02/2019)	114	124	67																																			
		Construction of Entrances and Structure	(03/2019 - 08/2019)	112	124	65																																			
	Zone 2	**Harbour Road Sports Centre Area**																																							
		Demolition of Harbour Road Sports Centre (HRSC)	(06/2017 - 09/2017)	107	92	63																													63	63	63	63			
		Site Hoarding Erection & Pile Removal	(10/2017)	109	92	65																																	65		
		Piling works (PPW and H-piles)	(11/2017 - 02/2018)	110	92	66																																		66	66
		Excavation & ELS installation (drill-and-blast works with mechanical excavation)	(03/2018 - 01/2019)	113	92	69																																			
		Construction of Internal Structure of Box Station	(02/2019 - 10/2019)	112	92	68																																			
		Construction of Entrances and Ground structure	(11/2019 - 01/2020)	114	92	69																																			
	Zone 3	**Wan Chai Swimming Pool Area**																																							
		Demolition of Wan Chai Swimming Pool	(12/2015 - 03/2016)	105	100	60												60	60	60	60																				
		Site Hoarding Erection & Pile Removal	(08/2016 - 09/2016)	107	100	62																				62	62														
		Piling works (H-piles)	(03/2016 - 04/2016)	108	100	63															63	63																			
		Diaphragm wall construction	(05/2016 - 07/2017)	106	100	61																	61	61	61	61	61	61	61	61	61	61	61	61	61	61					
		Excavation & ELS installation	(08/2017 - 08/2018)	114	100	69																																	69	69	69	69	69
		Construction of Internal Structure of Box Station	(09/2018 - 03/2019)	111	100	66																																			
		Construction of Vent Shaft and Ground structure	(04/2019 - 09/2019)	111	100	66																																			
	Zone 4	**Wan Chai Sports Ground Area**																																							
		Piling works (H-piles) - Wan Chai Sports Ground (WCSG)	(08/2016)	115	124	68																				68															
		Diaphragm wall construction - Phase 1 WCSG	(12/2015 - 07/2016)	106	124	59												59	59	59	59	59	59	59	59																
		Piling works (PPW and H-piles) - Tonnochy Road	(12/2016 - 06/2017)	110	124	63																							63	63	63	63	63	63	63						
		Excavation & ELS installation																																								
		> Underground (no noise cover)	(06/2017 - 07/2018)	113	124	66																													66	66	66	66	66	66	66
		> Underground (with full noise cover over Tonnochy Road)	(08/2018 - 04/2019)	106	124	59																																			
		> At surface	(08/2018 - 04/2019)	112	124	65																																			
		Construction of Internal Structure of Box Station	(10/2018 - 04/2019)	108	124	61																																			
		Reprovision of WCSG grandstand	(05/2019 - 09/2020)	115	124	68																																			
		Noise Level from Works Contract 1123, $L_{eq\ (30min)}$, dB(A):					-	-	-	-	-	67	69	67	68	68	68	69	71	69	70	70	69	70	70	72	69	68	68	70	71	69	72	72	71	73	72	74	74	74	74	74
	Construction of Harbour Road Sports Centre [4]	Site Hoarding Erection for Harbour Road Sports Centre	(08/2015)	106	77	63								63																												
		Demolition of Wan Chai Swimming Pool and filtration plant room	(09/2015 - 12/2015)	106	77	63									63	63	63	63																							
		Piling works for Harbour Road Sports Centre	(12/2015 - 07/2016)	109	77	66												66	66	66	66	66	66	66	66																
		Superstructure for Harbour Road Sports Centre	(06/2016 - 02/2017)	102	77	59																		59	59	59	59	59	59	59	59										
		Noise Level from Construction of Harbour Road Sports Centre, $L_{eq\ (30min)}$, dB(A)[4]:					-	-	-	-	-	-	-	63	63	63	63	68	66	66	66	66	66	67	67	59	59	59	59	59	59	59	-	-	-	-	-	-	-	-	-	-
		Cumulative Noise Level from Works Contract 1123 and Constrcution of Harbour Road Sports Centre, Leq (30min), dB(A):					-	-	-	-	-	67	69	69	69	69	69	72	72	71	72	71	71	71	72	72	69	69	68	70	72	69	72	72	71	73	72	74	74	74	74	74
Concurrent Works		**Noise Level from Construction of WDII, $L_{eq\ (30min)}$, dB(A)[3]:**					73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	-	-	-	-	-	-	-
		Cumulative Noise Level, $L_{eq\ (30min)}$, dB(A):					73	73	73	73	73	74	74	74	75	75	75	75	75	75	75	75	75	75	75	75	74	74	75	75	74	75	75	75	73	72	74	74	74	74	74

Remarks:

[1] For the calculation of sound pressure levels (SPL), the PMEs are assumed to be placed at the notional source position according to the "Technical Memorandum on Noise from Construction Work other than Percussive Piling" by EPD.

[2] Works further than 300 m from the NSR would not be assessed due to the large distance attentuation.

[3] The maximum mitigated noise level predicted at EX1 in the approved EIA Report for "Wan Chai Development Phase II and Central-Wan Chai Bypass" (WDII&CWB EIA Report) (Register No.: AEIAR-125/2008) has been adopted in this assessment.

Based on the construction programmes in the latest available monthly EM&A Report for WDII&CWB project (Sep 2017), the major construction works of WDII within 300m of the NSR were completed in May 2017.

[4] Noise impact from construction of Harbour Road Sports Centre was retrieved from the CNMMP for Works Contract 1126 as presented in **Appendix D**.

Appendix E2 - Detailed Noise Calculation for Drill-and-Blast Works Combined with Mechanical Excavation at Zone 2

NSR: EX1 Causeway Centre, Block A

Package	Area/Zone	Construction Activity	Construction Period	SWL	Distance / m [1][2]	SPL	2018												2019												2020											
							Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4		
							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
							37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
07 EXH		**EXH Structure**																																							
	Area E	(a) Site Hoarding Erection	(06/2016)	108	248	55																																			
	Area E	(b) Roof Slab Construction	(01/2018 - 02/2018)	112	248	59	59	59																																	
	Area E	(c) Excavation	(05/2018 - 10/2018)	113	248	60					60	60	60	60	60	60																										
	Area E	(d) Construction of Internal Structures of Box Station	(11/2018 - 04/2019)	112	248	59											59	59	59	59	59	59																				
	Area C	(e) Construction of Entrance and Vent Shafts	(01/2019 - 02/2019)	112	293	57													57	57																						
	Area C	(f) Construction of Station Box Roof Slab	(03/2019 - 04/2019)	112	293	58															58	58																				
	Area E	(h) Utility diversion	(07/2016 - 10/2016)	100	248	47																																			
		(i) Pipe Pile Construction																																							
	Area E	> Stage 1	(10/2016 - 12/2016)	111	248	58																																			
	Area E	> Stage 2	(04/2017 - 08/2017)	111	248	58																																			
06 EXH to Shaft		**Tunnel at West to EXH**																																							
		(a) Site Formation																																							
	Areas A & B	> Areas A & B	(06/2015)	120	>300	-																																			
	Area A	> Areas A	(09/2015)	120	>300	-																																			
	Area C	> Area C - 1	(01/2016)	120	293	65																																			
	Area C	> Area C - 2	(07/2016)	120	293	65																																			
	Areas A & B	(b) Site Hoarding Erection	(06/2015)	108	>300	-																																			
	Areas A & B	(c) Excavation inside SCL tunnels protection works	(06/2016 - 10/2017)	116	>300	-																																			
		(d) Tunnel Box Structure Construction																																							
	Area A	> Area A	(11/2017 - 11/2018)	115	>300	-	-	-	-	-	-	-	-	-	-	-	-																								
	Area B	> Area B	(11/2017 - 12/2019)	115	>300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-												
		(e) Diaphragm Wall Construction																																							
	Area A	> Area A	(10/2015 - 04/2016)	114	>300	-																																			
	Area C	> Area C	(03/2016 - 05/2017)	114	293	60																																			
	Area C	(f) Excavation	(06/2017 - 05/2018)	115	293	61	61	61	61	61	61																														
	Area C	(g) Tunnel Box Structure Construction	(06/2018 - 02/2019)	112	293	58						58	58	58	58	58	58	58	58	58																					
		(h) Backfilling and Superstructure																																							
	Area C	> Stage 1	(02/2019 - 02/2020)	112	293	58														58	58	58	58	58	58	58	58	58	58	58	58										
	Area C	> Stage 2	(06/2019 - 08/2019)	112	293	58																		58	58	58															
Barging Point	Barging Point	**Barging Point at Wan Chai Ex-PCWA**																																							
		Construction/Set up	(09/2016 - 07/2017)	106	>300	-																																			
		Spoil Disposal	(08/2017 - 12/2020)	113	>300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Zone 1	**Wan Chai PTI Area**																																							
		Site clearance, Site Hoarding Erection and utility diversion	(06/2015 - 07/2015)	113	124	66																																			
		Demolition of existing Wan Chai Ferry Pier footbridge																																							
		> Stage 1	(06/2015 - 06/2016)	109	124	62																																			
		> Stage 2	(01/2017)	115	124	68																																			
		Construction of temporary Wan Chai Ferry Pier footbridge	(09/2015 - 12/2016)	108	124	61																																			
		Construction of Permanent Wan Chai Ferry Pier footbridge (Superstructure)	(08/2019)	110	124	63																				63															
		Demolition of Temporary Wan Chai Ferry Pier footbridge	(09/2019 - 12/2019)	117	124	70																					70	70	70	70												
		Piling works (PPW and H-piles)																																								
		> Stage 1 (TTM Stage 2)	(07/2015 - 04/2016)	109	124	62																																			
		> Stage 2 (TTM Stage 3a & 3b)	(06/2016 - 10/2016)	108	124	61																																			
		> Stage 3 (TTM Stage 3C)	(12/2016 - 04/2017)	109	124	62																																			
		Diaphragm wall construction																																								
		> Stage 1 (TTM Stage 2)	(08/2015 - 01/2016)	110	124	63																																			
		> Stage 2 (TTM Stage 3a/3b/3c & 5)	(02/2016 - 03/2017)	109	124	62																																			
		Excavation & ELS installation	(03/2017 - 05/2018)	116	124	69	69	69	69	69	69																														
		Construction of Internal Structure of Box Station	(06/2018 - 02/2019)	114	124	67						67	67	67	67	67	67	67	67	67																					
		Construction of Entrances and Structure	(03/2019 - 08/2019)	112	124	65															65	65	65	65	65	65															
	Zone 2	**Harbour Road Sports Centre Area**																																							
		Demolition of Harbour Road Sports Centre (HRSC)	(06/2017 - 09/2017)	107	92	63																																			
		Site Hoarding Erection & Pile Removal	(10/2017)	109	92	65																																			
		Piling works (PPW and H-piles)	(11/2017 - 02/2018)	110	92	66	66	66																																	
		Excavation & ELS installation (drill-and-blast works with mechanical excavation)	(03/2018 - 01/2019)	113	92	69			69	69	69	69	69	69	69	69	69	69	69																					
		Construction of Internal Structure of Box Station	(02/2019 - 10/2019)	112	92	68														68	68	68	68	68	68	68	68	68													
		Construction of Entrances and Ground structure	(11/2019 - 01/2020)	114	92	69																						69	69	69												
	Zone 3	**Wan Chai Swimming Pool Area**																																							
		Demolition of Wan Chai Swimming Pool	(12/2015 - 03/2016)	105	100	60																																			
		Site Hoarding Erection & Pile Removal	(08/2016 - 09/2016)	107	100	62																																			
		Piling works (H-piles)	(03/2016 - 04/2016)	108	100	63																																			
		Diaphragm wall construction	(05/2016 - 07/2017)	106	100	61																																			
		Excavation & ELS installation	(08/2017 - 08/2018)	114	100	69	69	69	69	69	69	69	69	69																											
		Construction of Internal Structure of Box Station	(09/2018 - 03/2019)	111	100	66								66	66	66	66	66	66	66																					
		Construction of Vent Shaft and Ground structure	(04/2019 - 09/2019)	111	100	66															66	66	66	66	66	66															
	Zone 4	**Wan Chai Sports Ground Area**																																							
		Piling works (H-piles) - Wan Chai Sports Ground (WCSG)	(08/2016)	115	124	68																																			
		Diaphragm wall construction - Phase 1 WCSG	(12/2015 - 07/2016)	106	124	59																																			
		Piling works (PPW and H-piles) - Tonnochy Road	(12/2016 - 06/2017)	110	124	63																																			
		Excavation & ELS installation																																							
		> Underground (no noise cover)	(06/2017 - 07/2018)	113	124	66	66	66	66	66	66	66	66																												
		> Underground (with full noise cover over Tonnochy Road)	(08/2018 - 04/2019)	106	124	59								59	59	59	59	59	59	59	59	59																			
		> At surface	(08/2018 - 04/2019)	112	124	65								65	65	65	65	65	65	65	65	65																			
		Construction of Internal Structure of Box Station	(10/2018 - 04/2019)	108	124	61										61	61	61	61	61	61	61																			
		Reprovision of WCSG grandstand	(05/2019 - 09/2020)	115	124	68																	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68
		Noise Level from Works Contract 1123, $L_{eq\ (30min)}$, dB(A):					74	74	75	75	75	74	74	74	74	74	74	74	74	74	73	73	73	73	73	74	74	74	74	74	72	68	68	68	68	68	68	68	68	-	-	-
	Construction of Harbour Road Sports Centre [4]	Site Hoarding Erection for Harbour Road Sports Centre	(08/2015)	106	77	63																																			
		Demolition of Wan Chai Swimming Pool and filtration plant room	(09/2015 - 12/2015)	106	77	63																																			
		Piling works for Harbour Road Sports Centre	(12/2015 - 07/2016)	109	77	66																																			
		Superstructure for Harbour Road Sports Centre	(06/2016 - 02/2017)	102	77	59																																			
		Noise Level from Construction of Harbour Road Sports Centre, $L_{eq\ (30min)}$, dB(A)[4]:					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Cumulative Noise Level from Works Contract 1123 and Constrcution of Harbour Road Sports Centre, Leq (30min), dB(A):					74	74	75	75	75	74	74	74	74	74	74	74	74	74	73	73	73	73	73	74	74	74	74	74	72	68	68	68	68	68	68	68	68	-	-	-
Concurrent Works		**Noise Level from Construction of WDII, $L_{eq\ (30min)}$, dB(A)[3]:**					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Cumulative Noise Level, $L_{eq\ (30min)}$, dB(A):					74	74	75	75	75	74	74	74	74	74	74	74	74	74	73	73	73	73	73	74	74	74	74	74	72	68	68	68	68	68	68	68	68	-	-	-

Remarks:

[1] For the calculation of sound pressure levels (SPL), the PMEs are assumed to be placed at the notional source position according to the "Technical Memorandum on Noise from Construction Work other than Percussive Piling" by EPD.

[2] Works further than 300 m from the NSR would not be assessed due to the large distance attentuation.

[3] The maximum mitigated noise level predicted at EX1 in the approved EIA Report for "Wan Chai Development Phase II and Central-Wan Chai Bypass" (WDII&CWB EIA Report) (Register No.: AEIAR-125/2008) has been adopted in this assessment.

Based on the construction programmes in the latest available monthly EM&A Report for WDII&CWB project (Sep 2017), the major construction works of WDII within 300m of the NSR were completed in May 2017.

[4] Noise impact from construction of Harbour Road Sports Centre was retrieved from the CNMMP for Works Contract 1126 as presented in **Appendix D**.

Appendix F
Details of the Sound Proof Sheet

Details of Acoustic Baffles

"MODERN" SOUND PROOF SHEET
"現代"隔音帆布

FEATURE

• Reduce Noise Level	降低噪音水平
• Obstruct Dust	阻隔灰塵
• Fire Retardant	阻燃
• Light Weight and Foldable	輕便及可摺合收藏
• Comply to Standard of Japanese Product, Direct Import from Factory	符合日本產品標準, 直接從廠家入口, 價廉物美
• Tested under British Standard BS EN ISO 140-3:1995 w/certificate	經過英國標準測試及証書 BS EN ISO 140-3:1995
• Grey Color, Range of Sizes Available	灰色, 不同尺寸以供選購

COMPOSITION

• PVC Resin	PVC 樹脂
• Plasticizer	增塑劑
• Polyester Fiber	聚酯纖維
• Fire Retardant	阻燃劑

APPLICATION ON SOUND SOURCE

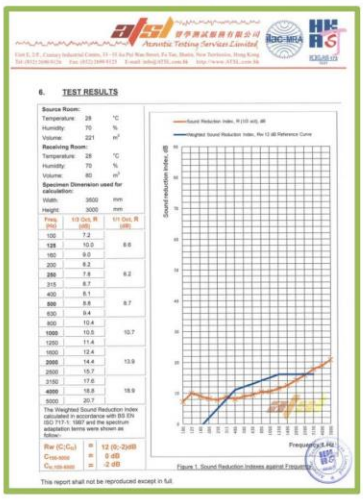
- DRILLING / MINING
- CONCRETE BREAKER
- GENERATOR

SPECIFICATION

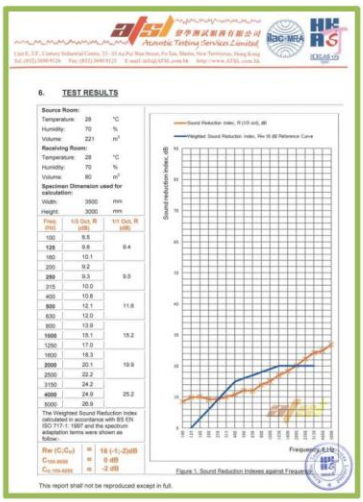
Brand	Product Code	Size W x H (m)	Density (kg/m²)	Thickness (mm)	Tensile Strength (N/5cm)		Tear Strength (N/5cm)		Elongation (%)	
					Vert.	Hori.	Vert.	Hori.	Vert.	Hori.
MODERN 現 代	SPS2030-10	2 x 3	1.2	1.0	1,617	1,330	117	155	24	24
	SPS1834-10	1.8 x 3.4	1.2	1.0	1,617	1,330	117	155	24	24
	SPS2030-04	2 x 3	0.5	0.4	808	670	50	65	24	23

TEST REPORT

TEST STANDARD:
BS EN ISO 140-3:1995



SPS2030-04 (0.5kg/m², 0.4mm thick)
SOUND REDUCTION INDEX, Rw = 12dB



SPS2030-10 (1.2kg/m², 1.0mm thick)
SOUND REDUCTION INDEX, Rw = 16dB

SETUP UNDER TEST
(SOURCE ROOM)

SETUP UNDER TEST
(RECEIVING ROOM)

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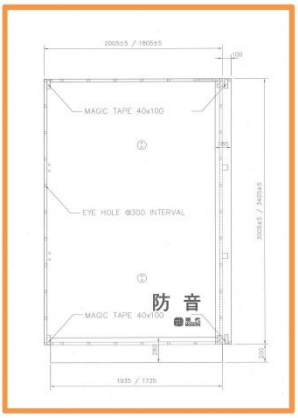
Appendix F - Details of the Sound Proof Sheet

LEIGHTON 禮頓·中建聯營
Leighton - China State Joint Venture

"MODERN" SOUND PROOF SHEET
"現代"隔音帆布

DIMENSION



MANAGEMENT & MAINTENANCE

- Please check each tie position on each sheet at least once every month
- In case of typhoon or strong wind ≥ 15m/s, please take off the sheets or detach one side of the sheet then fold them up and tighten to prevent the wind effect
- Please check the damages on fabric after each hot work. Please replace new once any damages to maintain the performance

- After in use, please keep the sheet in dry and open area
- Please do not use the sheet as a catch net or fall arresting net
- Please do not dispose the sheet by burning

NOISE CONTROL ORDINANCE IN HONG KONG

SECTION 9 OF NOISE CONTROL ORDINANCE – AREA SENSITIVITY RATINGS

	All days during the evening (1900 to 2300 hours) **& general** holidays (0700 to 2300 hours)		**All days during the night-time** (2300 to 0200 hours)	
Area sensitivity ratings, dB(A)	Within Designated Areas	Others	Within Designated Areas	Others
(1) Rural area	45 – 50	60 – 65	30 – 35	45 – 50
(2) Low density residential area	45 – 55	60 – 70	30 – 40	45 – 55
(3) Urban area	50 – 55	65 – 70	35 – 40	50 – 55
(4) Area other than those above	50 - 55	65 - 70	35 - 40	50 - 55

SIMPLE CALCULATION OF SOUND INSULATION

For a case that distance of source sound level 95dB to receiver = 20m

Distance decreasing effect:	20log20=26dB
Sound proof sheet effect:	Rw=16dB (SPS2030-10)
Total sound level reduction:	42dB
Final sound level to receiver:	95dB – 42dB = 53dB

Tips: If Sound Proof Sheet does not achieve the target sound level value, try the following method to get better sound insulation effect:
(1) make sound blocking wall higher
(2) install the sheet double
(3) install the sheet closer to sound source

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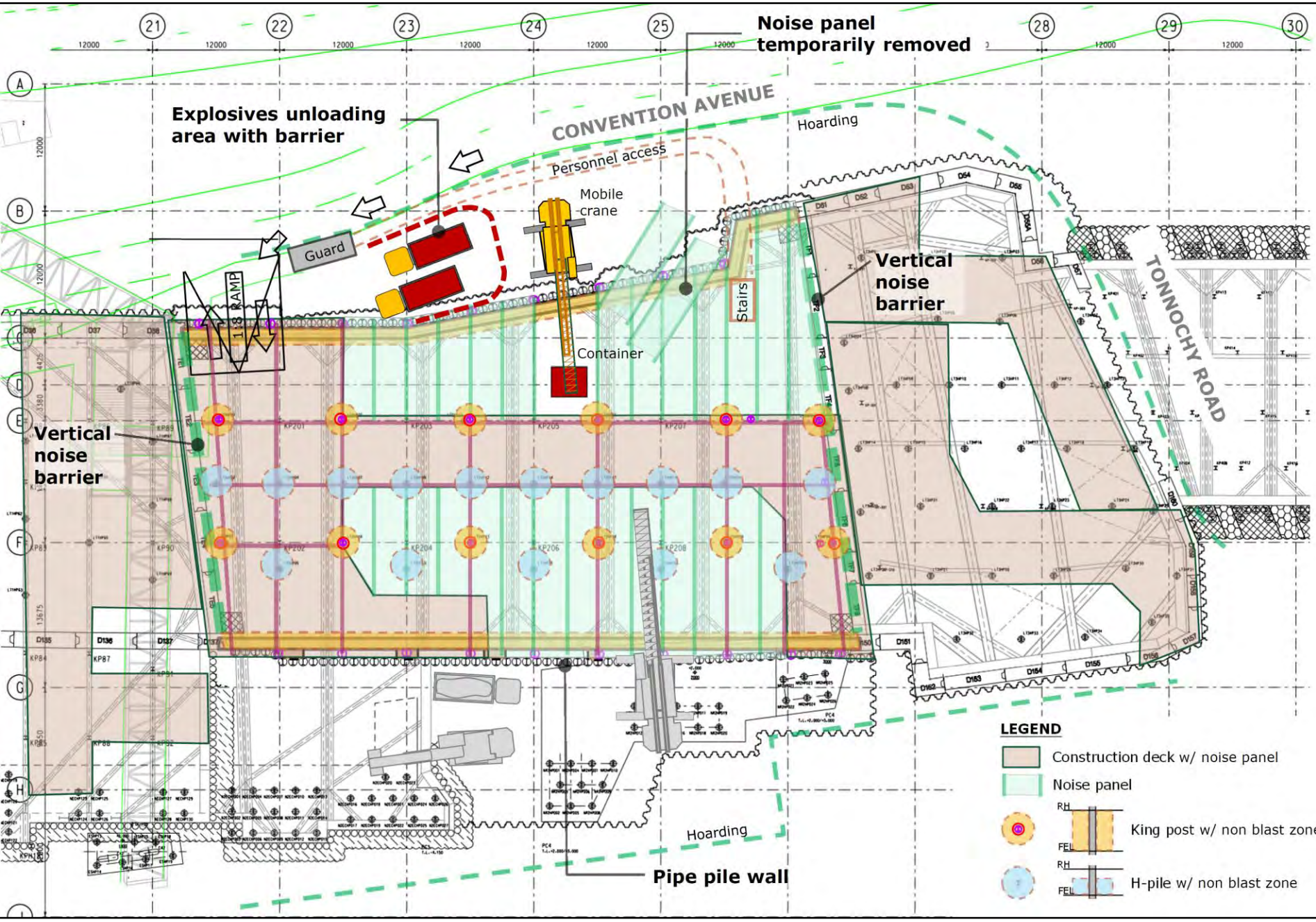
Appendix G
Preliminary Schematic Design Drawing of the Blasting Area


Noise panel temporarily removed
Explosives unloading area with barrier
CONVENTION AVENUE
Hoarding
Personnel access
Mobile crane
Guard
RAMP 1:18
Container
Stairs
Vertical noise barrier
TONNOCHY ROAD
Vertical noise barrier
Hoarding
Pipe pile wall
LEGEND
Construction deck w/ noise panel
Noise panel
King post w/ non blast zone
H-pile w/ non blast zone