Construction Noise Impact Assessment – KET Station

Works Area C - West of KET (Forbes Street Site)

Initial possession

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	2	102	100%			105
Hand Held Breaker	CNP024	3	108	50%			110
						Total	111

Utility Diversions

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Mini backhoe	CNP082	2	94	50%			94
Truck	CNP067	2	117	30%			115
Air Compressor	CNP002	2	102	100%			105
Hand Held Breaker	CNP024	4	108	50%			111
						Total	117

Piling/walling

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Pilling, earth auger	CNP167	4	114	70%				118
Air Compressor	CNP002	4	102	100%				108
Crane	CNP048	2	112	30%				110
Truck	BS C9/39	10	103	30%			108	
						Total	108	119

Bulk Excavation - soft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Backhoe	CNP081	2	112	90%			115
Truck	CNP067	4	117	30%			118
Crane	CNP048	2	112	30%			110
Water pump, submersible (electric)	CNP283	2	85	100%			88
Ventilation fan	CNP241	2	108	100%			111
						Total	120

Bulk Excavation - weak rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Breaker	CNP028	2	122	50%			122
Backhoe	CNP081	2	112	50%			112
Ventilation fan	CNP241	4	108	100%			114
Water pump, submersible (electric)	CNP283	2	85	100%			88
Truck	CNP067	4	117	30%			118
Crane	CNP048	2	112	30%			110
						Total	124

Excavate rock and base

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Breaker	CNP028	2	122	50%			122	
Backhoe	CNP081	1	112	50%			109	109
Ventilation fan	CNP241	1	108	100%			108	108
Water pump, submersible (electric)	CNP283	1	85	100%			85	85
Rock Drill	CNP182	1	123	70%				121
Truck	CNP067	2	117	30%			115	115
Crane	CNP048	1	112	30%			107	107
						Total	123	123

Works Area C - West of KET (Forbes Street Site)

Commence KET Turnback Tunnel

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Ventilation fan	CNP241	2	108	100%			111	111
Drill Rig	CNP072	1	110	50%				107
Grout Pump	CNP106	1	105	20%			98	
Truck	CNP067	3	117	30%			117	
Crane	CNP048	2	112	40%			111	
						Total	119	112

Tunnel Lining for KET Turnback

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Ventilation fan	CNP241	4	108	100%			114
Grout Pump	CNP106	1	105	5%			92
Concrete Pump	CNP054	1	109	100%			109
Concrete Lorry Mixer	CNP044	3	109	30%			109
Truck	CNP067	1	117	30%			112
Crane	CNP048	1	112	40%			108
						Total	118

Construct Station Box and Fitout ABWE

Construct Station Box and Fitout	1					Temporary Barr	. ,	Movable Ba	. ,
Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	Reduction	dB(A)
Air Compressor	CNP002	3	102	100%			107		107
Concrete pump	CNP047	3	109	100%			114		114
Concrete Lorry Mixer	CNP044	3	109	30%			109		109
Poker, vibratory, hand-held	CNP170	12	98	100%			109		109
Crane	CNP048	2	112	40%			111		111
Water pump, submersible (electric)	CNP283	3	85	100%			90		90
						Total	117	Total	117

Reinstate Forbes Street and Smithfield

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Truck	CNP067	1	117	30%			112		
Power Rammer	CNP169	1	108	100%			108		
Roller, vibratory	CNP185	1	108	100%			108		
Air Compressor	CNP002	1	102	100%				102	
Concrete Lorry Mixer	CNP044	1	109	100%				109	
Poker, vibratory, hand-held	CNP170	2	113	100%				116	
Asphalt Paver	CNP004	1	109	100%					109
						Total	108	117	109

Works Area D - East of KET (Swimming Pool Site)

Demolish Pools and Grandstand

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Air Compressor	CNP002	1	102	100%			102	
Hand Held Breaker	CNP024	2	108	50%			108	
Hydraulic Breaker	CNP028	2	122	80%				124
Backhoe	CNP048	2	112	70%				113
Truck	CNP067	3	117	30%				117
						Total	109	125

Piling/walling

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Pilling, earth auger	CNP167	3	114	70%				117
Pilling, Hydraulic	BS C4/13	1	106	70%				104
Air Compressor	CNP002	4	102	100%				108
Crane	CNP048	5	112	30%			114	114
Truck	CNP067	6	117	30%			120	
						Total	121	119

Bulk Excavation - soft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Backhoe	CNP081	2	112	90%			115
Truck	CNP067	4	117	30%			118
Water pump, submersible (electric)	CNP283	2	85	100%			88
Crane	CNP048	2	112	30%			110
Ventilation fan	CNP241	2	108	100%			111
						Total	120

Bulk Excavation - weak rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Breaker	CNP028	3	122	50%			124
Backhoe	CNP081	3	112	50%			114
Ventilation fan	CNP241	4	108	100%			114
Water pump, submersible (electric)	CNP283	3	85	100%			90
Truck	CNP067	6	117	30%			120
Crane	CNP048	3	112	30%			112
						Total	126

Excavate rock and base

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Breaker	CNP028	2	122	50%			122
Backhoe	CNP081	1	112	50%			109
Ventilation fan	CNP241	1	108	100%			108
Water pump, submersible (electric)	CNP283	1	85	100%			85
Rock Drill	CNP182	1	123	70%			121
Truck	CNP067	2	117	30%			115
Crane	CNP048	1	112	30%			107
						Total	125

Commence KET to SYP Tunnel

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Ventilation fan	CNP241	2	108	100%			111
Drill Rig	CNP072	1	110	50%			107
Grout Pump	CNP106	1	105	20%			98
Truck	CNP067	3	117	30%			117
Crane	CNP048	2	112	40%			111
						Total	119

Works Area D - East of KET (Swimming Pool Site)

Tunnel Lining for SYP to KET Tunnel

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Ventilation fan	CNP241	4	108	100%			114
Grout Pump	CNP106	1	105	5%			92
Concrete Pump	CNP054	1	109	100%			109
Concrete Lorry Mixer	CNP044	3	109	30%			109
Truck	CNP067	1	117	30%			112
Crane	CNP048	1	112	40%			108
						Total	118

Construct Station Box and Fitout ABWF

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	3	102	100%			107
Concrete pump	CNP047	3	109	100%			114
Concrete Lorry Mixer	CNP044	3	109	30%			109
Poker, vibratory, hand-held	CNP170	12	113	100%			124
Crane	CNP048	2	112	40%			111
Water pump, submersible (electric)	CNP283	3	85	100%			90
						Total	125

Reinstate Site & Smithfield PTI Slab

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Truck	CNP067	1	117	30%			112		
Power Rammer	CNP169	1	108	100%			108		
Roller, vibratory	CNP185	1	108	100%			108		
Air Compressor	CNP002	1	102	100%				102	
Concrete Lorry Mixer	CNP044	1	109	100%				109	
Poker, vibratory, hand-held	CNP170	2	113	100%				116	
Asphalt Paver	CNP004	1	109	100%					109
						Total	114	117	109

Works Area A - Ex-Police Quarter

Utility Diversions

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Hand Held breaker	CNP024	1	108	50%			105
Mini backhoe	CNP082	1	94	80%			93
Air Compressor	CNP002	1	102	100%			102
						Total	107

Demolition

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Air Compressor	CNP002	1	102	100%			102	
Hand Held breaker	CNP024	2	108	50%			108	
Hydraulic Breaker	CNP028	2	122	70%			123	
Backhoe	CNP081	2	112	70%				113
Truck	CNP067	2	117	30%				115
Mobile Crane	CNP048	1	112	70%				110
						Total	124	118

Piling/walling (only 5 days)

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Pile rig	BS C11/2	1	112	80%			111
Mobile Crane	CNP048	1	112	80%			111
Air Compressor	CNP002	1	102	100%			102
Generator, super silenced	CNP103	1	95	100%			95
						Total	114

Excavation of Shaft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Backhoe	CNP081	1	112	70%			110
Hydraulic breaker	CNP028	2	122	80%			124
Hand Held breaker	CNP024	2	108	60%			109
Ventilation fan	CNP241	1	108	100%			108
Mobile Crane	CNP048	1	112	40%			108
Generator, super silenced	CNP103	1	95	100%			95
Compressor	CNP003	1	104	100%			104
Water pump, submersible (electric)	CNP283	1	85	100%			85
Grout plant	CNP046	1	96	15%			88
Concrete Mixer Truck	CNP044	1	109	50%			106
Shotcrete Pump	CNP047	1	109	20%			102
Drill rig	CNP072	1	110	50%			107
Trucks	CNP067	2	117	30%			115
						Total	125

Excavation of Tunnel / Adits

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Ventilation fan	CNP241	1	108	100%			108
Mobile Crane	CNP048	1	112	70%			110
Generator, super silenced	CNP103	1	95	100%			95
Compressor	CNP003	1	104	100%			104
Water pump, submersible (electric)	CNP283	1	85	100%			85
Grout plant	CNP046	1	96	15%			88
Concrete Mixer Truck	CNP044	1	109	50%			106
Shotcrete Pump	CNP047	1	109	20%			102
Truck	CNP067	2	117	30%			115
						Total	117

Lining

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Concrete Mixer Truck	CNP044	1	109	80%			108
Concrete Pump	CNP054	1	109	80%			108
						Total	111

Works Area B - Abattoir Site

Construct Site Offices + Crusher + Barging Point

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Generator	CNP103	2	95	100%			98
Mobile Crane	CNP048	2	101	30%			99
Truck	CNP067	2	103	65%			104
Poker	CNP170	2	98	30%			96
Compressor	CNP003	1	104	60%			102
Concrete Mixer Truck	CNP044	2	100	50%			100
						Total	108

Rock Crusher Operation

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Wheel Loader	CNP081	1	112	50%			109	
Truck	CNP067	2	117	65%			118	
Converyor	CNP041	4	90	70%				94
Crusher	EIA Ref.	1	118	40%				114
						Total	119	114

Reinstatement

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Truck	CNP067	2	117	30%			115
Air Compressor	CNP002	2	102	100%			105
Concrete Lorry Mixer	CNP044	2	109	50%			109
Poker, vibratory, hand-held	CNP170	4	113	30%			114
Crane	CNP048	1	112	20%			105
Breaker	CNP028	1	122	25%			116
						Total	120

Transport spoil to the barge

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Barge	CNP061	1	104	80%			103
Truck	CNP067	10	117	70%			125
						Total	125

Note:

EIA Ref. : The SWL of crusher was made reference to the approved EIA Report of Development at Anderson Road, 1998.

EIA Ref. : The SWL of cement tank and cement blower was made reference to the approved EIA of Proposed RMC Concrete Batching Plant at Telegraph Bay for Cyber-Port Development .

Works Area MA - Underground Magazine Site

Possession of Site

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Drill Rig	CNP072	1	110	60%			108	108
Air Compressor	CNP002	1	102	100%			102	102
Generator, super silenced	CNP103	1	95	100%			95	95
Grout Pump	CNP106	1	105	50%			102	
Grout Mixer	CNP105	1	90	50%				87
Vibratory Roller	CNP185	1	108	70%			106	106
Backhoe	CNP081	1	112	80%			111	111
Truck	CNP067	1	117	50%			114	114
	•	•				Total	117	117

Construction of Magazine

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Air Compressor	CNP002	1	102	100%			102	102	
Generator, super silenced	CNP103	1	95	100%			95	95	95
Ventilation fan	CNP241	1	108	100%					108
Breaker	CNP028	2	122	70%			123	123	123
Drill Rig	CNP072	4	110	50%			113	113	
Jumbo drill rig	CNP072	1	110	20%			103	103	103
Grout Pump	CNP106	1	105	15%			97		
Grout Mixer	CNP105	1	90	15%				82	
Backhoe	CNP081	1	112	20%			105	105	105
Front end loader	BS C3/97	1	105	20%			98	98	98
Shotcrete Pump	CNP047	1	109	20%					102
Truck	CNP067	1	117	40%			113	113	113
						Total	124	124	124

Operation of Magazine - Ventilation Fan

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Ventilation fan	CNP241	2	108	100%			111
						Total	111

Operation of Magazine - Truck

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Truck	CNP067	3	117	40%			118
						Total	118

NSR :KET 1 - Kwun Lung Lau (Block D)

						20	09							201	0				[2011							:	2012								2013				1			201)14	
		2	. Feb	Mar Apr	May .	Jun Ju	ul Aug	Sep	Oct Nov	Dec J	an Feb	o Mar	Apr Ma	y Jun	Jul Au	g Sep	Oct 1	Nov Dec	Jan F	eb Ma	r Apr	May Ju	n Jul /	Aug Sep	Oct	Nov Dec	Jan	Feb Mar	Apr N	May Ju	n Jul A	Aug Sep	Oct N	lov Dec	Jan F	eb Mar	Apr	May J	un Jul	Aug S	iep Od	t Nov	Dec	Jan Fr	eb Mar	Apr M:	lay Jun	n Jul Aug Sej
Act No. Construction Element	SWL	ist ² SP		2 3					9 10																		_								48 4			,		· ·	_						,	66 67 68
Works Area C - West of KET (Forbes Street Site)																																																
1 Initial possession ^	111	37 75	i									75	75 75	5 75																																		
2 Utility Diversions ^	117	37 81												81	81 8	1 81	81	81 81																										1				
3 Piling/walling ^	119	34 83												83	83 8	3 83	83	83																										1				
4 Bulk Excavation - soft ^	120	37 84																84 84	84	84 84	84	84																								-		
5 Bulk Excavation - weak rock ^		40 87																		87 87	87	87																						1				
6 Excavate rock and base ^	123	43 85																		85 85	85	85																						1				
7 Commence KET Turnback Tunnel ^	119	38 82																		82 82	82	82 8	2 82	82 82																				1				
8 Tunnel Lining for KET Turnback ^	118																							81	81	81 81	81	81 81	81	81																		
9 Construct Station Box and Fitout ABWF		37 81																				8	81	81 81	81	81 81	81	81 81	81	81 81	I 81 i	81 81	81	31 81														
10 Reinstate Forbes Street and Smithfield	117	37 81																																	81 8	1 81	81	81 8	81 81	81 8	31 81	1 81	81					
Works Area D - East of KET (Swimming Pool Site)																																																
11 Demolish Pools and Grandstand ^		95 80	1														80	80 80																														
12 Piling/walling ^		65 80																80	80	80 80	80	80																					L	<u>і </u>				
13 Bulk Excavation - soft ^		104 75																				75 7	5 75																									
14 Bulk Excavation - weak rock		104 81																							81																							
15 Excavate rock and base		104 80																						80 80	80	80																						
16 Commence KET to SYP Tunnel	119	166 70														70	70	70 70	70																									1				
17 Tunnel Lining for SYP to KET Tunnel		166 69																					69	69 69		69 69																						
18 Construct Station Box and Fitout ABWF		104 80																								80 80	80	80 80	80	80 80	80	80 80	80	80 80	80 8	0 80	80	80										
19 Reinstate Site & Smithfield PTI Slab	117	95 72																																	7	2 72	72	72 7	72 72	72 7	72 72	2 72	72	72 72	2			
Works Area A - Ex-Police Quarter																																																
20 Utility Diversions	50	- 0										0	0 0	0																																		
21 Demolish ^	103	- 0													0 0	0																																
22 Piling/walling (only 5 days) ^	102	- 0																0																														
23 Excavation of Shaft (soft) ^	106	- 0																0 0																														
24 Excavation of Shaft (rock) ^	106	- 0																0	0																													
25 Excavation of Tunnel / Adits (rock) ^	100	- 0																	0	0																								1				
26 Excavation of Tunnel / Adits (soft)	100	- 0																						0	0	0 0	0	0 0	0	0																		
27 Lining	94	- 0																						0	0	0 0	0	0 0	0	0																		
Works Area B - Abattoir Site																																																
28 Construct Site Offices + Crusher + Barging Point	98	- 0	0	0 0	0	0 0	0 0	0	0 0																																							
29 Rock Crusher Operation	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	0													\square				
30 Reinstatement	97	- 0																														0	0	0														
31 Transport spoil to the barge	102	- 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																
Works Area MA - Underground Magazine Site																																																
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34a Operation of Magazine - Ventilation Fan	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																		
34b Operation of Magazine - Truck	94	- 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																		
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	Ex																																															

 Remarks:

 1. Noise sources at more than 300m from the sensitive receiver are not considered in cumulative noise assessment due to large distance attenuation effect.

 2. Slant distance (m)

 3. 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.

 * No PMEs used at surface

* Construction activities would not be conducted simultaneously, so the max SPL among these activities would be used for the calculation of construction noise of that particular month 17, act. 2-4 in month 17, act. 4-7 in month 25, act. 1 & 8 in month 28, act. 1 & 8 in month 28, act. 21-23 in month 22, act. 23 & 24 in month 23, act 4 & 25 in month 24. Noise Exceedance

The use of PME would not be visible when viewed from the assessment facade of NSR. The NSR is considered to be totally screened. According to GW-TM, a noise reduction of 10 dB(A) would be achieved.

NSR :KET P1 - Kwun Lung Lau Planned Receiver

			[2	009								20	10									2011								20	12								2013	3						2014	4		
Network Netwo	Act No. Construction Element	CW/1 D: 12 CDI	Feb	Mar	Apr Ma	iy Jun 🗸	lul Aug	g Sep	Oct N	ov Dec	Jan	Feb N	ar Api	r May	Jun	Jul A	Aug S	iep Oct	Nov	Dec	Jan Fe	eb Mar	Apr	May Ju	un Jul	Aug :	Sep Oct	Nov I	Dec Ja	an Feb	Mar /	Apr Ma	y Jun	Jul A	ug Sep	o Oct	Nov De	c Jan	Feb M	lar Apr	May	Jun	Jul Aug	Sep (Oct Nov	Dec	Jan Fel	b Mar	Apr May	y Jun	Jul A	.ug Sep
	Act No. Construction Element	SWL DIST SPL	1	2	3 4	5	6 7	8	9 1	0 11	12	13 1	4 15	i 16	17	18	19 2	20 21	22	23	24 2	5 26	27	28 2	9 30	31	32 33	34	35 3	6 37	38	39 40) 41	42 4	43 44	45	46 47	48	49 5	50 51	52	53	54 55	56	57 58	59	60 61	62	63 64	65	66 (68 7ز
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Remarks:

Remarks:

1. Noise sources at more than 300m from the sensitive receiver are not considered in cumulative noise assessment due to large distance attenuation effect.
2. Slant distance (m)
3. Sort deculuation 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.
* No PMEs used at surface
According to the conducted simultaneously, so the max SPL among these activities would be used for the calculation of construction noise of that particular month. These activities include: act. 1-3 in month 17, act. 2-4 in month 17-23, act. 4-7 in month 25-28, act. 7 & 8 in month 32, act. 11 & 12 in month 28, act. 21-23 in month 22, act. 23 & 24 in month 23, and act. 24 & 25 in month 24.
The used of NBR. The NSR is considered to be totally screened. According to BCW-TM, an oise reduction of 10 dB(A) would be according to BCW-TM, an oise reduction of 10 dB(A) would be achieved.

NSR :KET 9 - Hong Kong Institute of Vocation Education (Tsing Yi) Kennedy Town Centre

							2009								2010								20									2012								20	13							2014		
Act No. C	Construction Element	SWL	Dist ² SPL							Oct Nov De																																		Nov De				Apr May		
			2.51	1 2	3	4	5 6	7	8	9 10 1	1 12	13	14 15	5 16	17 1	8 19	20	21	22 23	24 2	25 26	27 28	8 29	30 3	1 32	33	34 3	35 36	37	38 3	9 40	41 42	2 43	44 45	46	47 4	8 49	50	51 52	53	54 5	55 56	57	58 59	э 60	61	62 6	63 64	65 66	<u>⇒ 67</u>
Works Area C - West of KE	ET (Forbes Street Site)				_																																			_					4	4				4
1 Initial possession ^		100	- 0										0 0	0																															_					
2 Utility Diversions ^		102	- 0																0 0																										_					
3 Piling/walling ^		109	- 0												0	0 0	0	0	0																															
4 Bulk Excavation - se	soft ^	101	- 0																0 0			0 0																												
5 Bulk Excavation - w	veak rock ^	103	- 0																		0 0	0 0)																											
6 Excavate rock and I	base ^	102	- 0																			0 0																												
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10 Reinstate Forbes St	treet and Smithfield	94	- 0																																	C	0 0	0	0 0	0	0	0 0	0	0 0	J	-				
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22 Piling/walling (only		114			_			_			'						_		70												_												_		_					
23 Excavation of Shaft			97 80		_			_			'						_		80 80												_												_		_					
24 Excavation of Shaft			97 80																80	80																									_					
25 Excavation of Tunn	nel / Adits (rock) ^		97 72																	72 7	72																								_					
26 Excavation of Tunn	nel / Adits (soft)		97 72																										72																					
27 Lining		111	97 66																						66	66	66 6	66 66	66	66 6	6 66																			
Vorks Area B - Abattoir Sit	te																																													4				
28 Construct Site Offic	ces + Crusher + Barging Point		215 46	46 46	6 46	46 4	46 46	46	46 4	46 46																																								
29 Rock Crusher Oper	ration	104	189 54							5	54 54	54	54 54	4 54	54 5	64 54	54	54	54 54	54 5	54 54	54 54	4 54	54 5	4 54	54	54 5	64 54	54	54 54	4 54	54 54	4 54																	
30 Reinstatement		97	270 43																															43 43	43															
31 Transport spoil to th	he barge		158 53							5	j3 53	53	53 53	3 53	53 5	3 53	53	53	53 53	53 5	53 53	53 53	3 53	53 5	3 53	53	53 5	3 53	53	53 53	3 53	53 53	3 53																	
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Remarks: 1. Noise sources at more than 300m from the sensitive receiver are not considered in cumulative noise assessment due to large distance attenuation effect. 2. Slant distance (m) 3. 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 Pilling" by EPD.

[•] No PMEs used at surface ^ Construction activities would not be conducted simultaneously, so the max SPL among these activities would be used for the calculation of construction noise of that particular month. These activities include: act. 1-3 in month 17, act. 2-4 in month 17-23, act. 4-7 in month 25-28, act. 7 & 8 in month 32, act. 11 & 12 in month 28, act. 21-23 in month 28, act. 21-23 in month 22, act. 23 & 24 in month 23, and act. 24 & 25 in month 24. Noise Exceedance

The use of PME would not be visible when viewed from the assessment facade of NSR. The NSR is considered to be totally screened. According to GW-TM, a noise reduction of 10 dB(A) would be achieved.

Construction Noise Impact Assessment – UNI Station

Works Area J2 - UNI Entrance B1

Possession of site

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Mini backhoe	CNP082	1	94	50%			91
Truck	CNP067	1	117	30%			112
Air Compressor	CNP002	1	102	100%			102
Hand-held Breaker	CNP024	1	108	50%			105
						Total	113

Demolition of Whitty Public Toilet Block

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)	dB(A)
Concrete Corer	CNP042	1	117	80%				116		
Saw, wire	CNP205	1	101	80%					100	
Concrete Crusher	CNP055	1	103	80%						102
Mini backhoe	CNP082	3	94	90%			98			
Truck	CNP067	1	117	30%			112			
Air Compressor	CNP002	1	102	100%			102			
						Total	112	116	100	102

Piling/Walling

3 3								
Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Pile Rig	BS C11/2	1	112	70%				110
Air Compressor	CNP002	1	102	100%			102	
Generator, super silenced	CNP103	1	95	100%			95	
						Total	103	110

Bulk Excavation-Soft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Backhoe	CNP081	1	112	50%				109	
Truck	CNP067	1	117	30%				112	
Water pump, submersible (electric)	CNP283	1	85	100%				85	
Ventilation fan	CNP241	1	108	100%				108	
Conveyor	CNP041	1	90	30%				85	
Drill Rig	CNP072	1	110	70%					108
Grout Pump	CNP106	1	105	20%			98		
Grout Mixer	CNP105	1	90	30%			85		
Shotcrete Pump	CNP047	1	109	20%			102		
						Total	104	115	108

Bulk Excavation-weak Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP028	1	122	50%				119	
Backhoe	CNP081	1	112	50%				109	
Ventilation fan	CNP241	1	108	100%				108	
Water pump, submersible (electric)	CNP283	1	85	100%				85	
Truck	CNP067	1	117	30%				112	
Grout Pump	CNP106	1	105	20%			98		
Grout Mixer	CNP105	1	90	30%			85		
Drill Rig	CNP072	1	110	30%					105
Conveyor	CNP041	1	90	30%			85		
Electric Winch	CNP262	1	95	10%			85		
Shotcrete Pump	CNP047	1	109	20%			102		
						Total	104	120	105

Works Area J2 - UNI Entrance B1

Excavation - Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP028	1	122	50%					119
Backhoe	CNP081	1	112	50%				109	
Ventilation fan	CNP241	1	108	100%			108		
Water pump, submersible (electric)	CNP283	1	85	100%			85		
Rock Drill	CNP182	1	123	40%			119		
Truck	CNP067	1	117	30%			112		
Conveyor	CNP041	1	90	30%			85		
Electric Winch	CNP262	1	95	10%			85		
Shotcrete Pump	CNP047	1	109	20%			102		
						Total	120	109	119

Construct Ground Level Entrance

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Air Compressor	CNP002	1	102	100%			102	
Concrete pump	CNP047	1	109	100%			109	
Concrete Lorry Mixer	CNP044	1	109	30%			104	
Poker, vibratory, hand-held	CNP170	2	113	100%				116
Water pump, submersible (electric)	CNP283	1	85	100%			85	
						Total	111	116

Works Area H - UNI Entrance C2

Possession of site

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Hand-held Breaker	CNP024	2	108	50%			108
Mini backhoe	CNP082	1	94	50%			91
Truck	CNP067	1	117	30%			112
						Total	114
Utilities Diversions						·	
Utilities Diversions							
Utilities Diversions Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
	TM Ref./ other Ref.	No. of Items	SWL/Item dB(A)	On-time %	Noise Mitigation Measure	Noise Barrier Reduction	Total SWL dB(A)
Powered Mechanical Equipment		No. of Items			6		
Powered Mechanical Equipment (PME)	other Ref.		dB(A)	%	6		dB(A)
Powered Mechanical Equipment (PME) Air Compressor	other Ref. CNP002	1	dB(A) 102	% 100%	6		dB(A) 102
Powered Mechanical Equipment (PME) Air Compressor Hand-held Breaker	other Ref. CNP002 CNP024	1	dB(A) 102 108	% 100% 50%	6		dB(A) 102 108

Piling/Walling

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Pile Rig	BS C11/2	1	112	70%			110
Air Compressor	CNP002	1	102	100%			102
Generator, super silenced	CNP103	1	95	100%			95
						Total	111

Bulk Excavation-Soft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Backhoe	CNP081	1	112	50%			109
Truck	CNP067	2	117	30%			115
Water pump, submersible (electric)	CNP283	1	85	100%			85
						Total	116

Bulk Excavation-weak Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Breaker	CNP028	1	122	70%			120	
Backhoe	CNP081	1	112	50%			109	
Ventilation fan	CNP241	2	108	100%			111	
Water pump, submersible (electric)	CNP283	1	85	100%			85	
Truck	CNP067	2	117	30%				115
Crane	CNP048	1	112	30%				107
						Total	121	115

Works Area H - UNI Entrance C2

Excavate Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Breaker	CNP028	1	122	70%			120	
Backhoe	CNP081	1	112	50%			109	
Ventilation fan	CNP241	1	108	100%			108	
Water pump, submersible (electric)	CNP283	1	85	100%			85	
Rock Drill	CNP182	1	123	35%				118
Truck	CNP067	2	117	30%			115	
Crane	CNP048	1	112	30%			107	
						Total	122	118

Construct Ground Level Entrance

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Concrete pump	CNP047	1	109	100%			109
Concrete Lorry Mixer	CNP044	1	109	30%			104
Poker, vibratory, hand-held	CNP170	4	113	100%			119
Water pump, submersible (electric)	CNP283	1	85	100%			85
						Total	120

Works Area I - UNI Entrance C1 + VS + Chiller

Possession of site

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Hand-held Breaker	CNP024	3	108	50%			110
Air Compressor	CNP002	2	102	100%			105
Mini backhoe	CNP082	1	94	50%			91
Truck	CNP067	1	117	30%			112
						Total	114

Utilities Diversions

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	2	102	100%			105
Hand-held Breaker	CNP024	3	108	50%			110
Mini backhoe	CNP082	1	94	50%			91
Truck	CNP067	1	117	30%			112
						Total	114

Piling/Walling - Some 60 Nos. Bored Piles

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Pile Rig	BS C11/2	1	112	70%			110
Air Compressor	CNP002	1	102	100%			102
Generator, super silenced	CNP103	1	95	100%			95
Concrete Lorry Mixer	CNP044	1	109	30%			104
Crane	CNP048	1	112	30%			107
						Total	113

Bulk Excavation-Soft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Backhoe	CNP283	1	112	70%			110
Truck	CNP067	2	117	30%			115
Water pump, submersible (electric)	CNP283	1	85	100%			85
Crane	CNP048	1	112	10%			102
						Total	116

Bulk Excavation-weak Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Breaker	CNP028	1	122	50%			119
Backhoe	CNP081	1	112	50%			109
Ventilation fan	CNP241	2	108	100%			111
Water pump, submersible (electric)	CNP283	1	85	100%			85
Truck	CNP067	2	117	30%			115
Crane	CNP048	1	112	30%			107
						Total	121

Permanent Shaft Lining

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Air Compressor	CNP002	1	102	100%				102
Concrete pump	CNP047	2	109	100%				112
Crane	CNP048	1	112	30%				107
Concrete Lorry Mixer	CNP044	4	109	30%			110	
Poker, vibratory, hand-held	CNP170	6	113	100%			121	
	•					Total	121	113

Construct above-ground Lift Shaft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Concrete pump	CNP047	1	109	100%			109
Concrete Lorry Mixer	CNP044	1	109	30%			104
Poker, vibratory, hand-held	CNP170	4	113	100%			119
Crane	CNP048	1	112	20%			105
						Total	120

Works Area I - UNI Entrance C1 + VS + Chiller

Sheet Piling for Vent Ducts

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Sheet Piling Machine	BS C4/13	1	106	70%			104
						Total	104

Bulk Excavation-Soft for Vent Ducts

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Backhoe	CNP081	1	112	50%			109
Truck	CNP067	2	117	30%			115
Water pump, submersible (electric)	CNP283	1	85	100%			85
						Total	116

Horizontal Duct

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Breaker	CNP028	1	122	20%				115
Backhoe	CNP081	1	112	50%				109
Water pump, submersible (electric)	CNP283	1	85	100%				85
Crane	CNP048	1	112	30%			107	
Truck	CNP067	2	117	30%			115	
						Total	115	116

Concreting Vent Ducts and Vent Building

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Concrete pump	CNP047	1	109	100%			109
Concrete Lorry Mixer	CNP044	1	109	30%			104
Poker, vibratory, hand-held	CNP170	4	113	100%			119
Water pump, submersible (electric)	CNP283	1	85	100%			85
Mobile Crane	CNP048	1	112	20%			105
						Total	120

Reinstatement

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)	dB(A)
Pile Extractor	BS C4/22	1	125	20%			118			
Truck	CNP067	1	117	30%				112		
Power Rammer	CNP169	1	108	100%				108		
Roller, vibratory	CNP186	1	108	100%				108		
Air Compressor	CNP002	1	102	100%					102	
Concrete Lorry Mixer	CNP044	1	109	100%					109	
Poker, vibratory, hand-held	CNP170	2	113	100%					116	
Asphalt Paver	CNP004	1	109	100%						109
						Total	118	114	117	109

Station Fitout

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Truck	CNP067	2	117	100%			120
						Total	120

Works Area J - UNI Entrance B2

Possession of site / Mobilization

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Air Compressor	CNP002	1	102	100%				102
Hand-held Breaker	CNP024	2	108	50%				108
Mini Backhoe	CNP082	1	94	50%			91	
Truck	CNP067	1	117	30%			112	
Air Compressor	CNP002	1	102	100%			102	
Hand-held Breaker	CNP024	1	108	50%			105	
						Total	113	109

Demolition of Hill Road Rest Garden

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Mini Backhoe	CNP082	2	94	50%			94	
Truck	CNP067	2	117	30%			115	
Air Compressor	CNP002	2	102	100%				105
Hand Held Breaker	CNP024	4	108	50%				111
						Total	115	112

Piling/Walling

a a								
Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Pile Rig	BS C11/2	2	112	70%				113
Air Compressor	CNP002	2	102	100%			105	
Generator, super silenced	CNP103	1	95	100%			95	
						Total	105	113

Bulk Excavation-weak Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP028	2	122	40%				121	
Backhoe	CNP081	2	112	50%			112		
Ventilation fan	CNP241	1	108	100%				108	
Water pump, submersible (electric)	CNP283	2	85	100%				88	
Truck	CNP067	4	117	30%					118
Crane	CNP048	1	112	30%			107		
						Total	113	121	118

Excavation - Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP028	2	122	50%				122	
Backhoe	CNP081	2	112	70%				113	
Ventilation fan	CNP241	1	108	100%			108		
Water pump, submersible (electric)	CNP283	2	85	100%			88		
Rock Drill	CNP182	1	123	20%			116		
Truck	CNP067	4	117	30%					118
Crane	CNP048	1	112	30%					107
						Total	117	123	118

Excavate adit and running tunnel

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)	dB(A)
Air Compressor	CNP002	1	102	100%			102			
Concrete Lorry Mixer	CNP044	2	109	30%			107			
Concrete pump	CNP047	1	109	30%			104			
Water pump, submersible (electric)	CNP283	1	85	100%			85			
Ventilation fan	CNP241	4	108	100%			114			
Excavator	CNP081	1	112	65%				110		
Rock Drill	CNP182	1	123	40%					119	
Mobile Crane	CNP048	1	112	30%						107
Truck	CNP067	2	117	65%						118
Shotcrete Pump	CNP047	1	109	20%					102	
Concrete Mixer Truck	CNP044	2	109	65%				110		
Ventilation fan	CNP241	2	108	100%				111		
						Total	115	115	119	118

Works Area J - UNI Entrance B2

Concrete Adit

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Backhoe	CNP081	1	112	50%			109	
Truck	CNP067	2	117	30%				115
Water pump, submersible (electric)	CNP283	1	85	100%			85	
Ventilation fan	CNP241	4	108	100%			114	
						Total	115	115

Construct Ground Level Entrance

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Concrete pump	CNP047	1	109	100%			109
Concrete Lorry Mixer	CNP044	1	109	30%			104
Poker, vibratory, hand-held	CNP170	4	113	100%			119
Water pump, submersible (electric)	CNP283	1	85	100%			85
						Total	120

Station Fitout

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Truck	CNP067	2	103	100%			106
						Total	106

Works Area J3 - UNI Entrance A

Possession of site

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Hand-held Breaker	CNP024	2	108	50%			108
Air Compressor	CNP002	1	102	100%			102
Mini backhoe	CNP082	1	94	50%			91
Truck	CNP067	1	117	30%			112
						Total	114

Utilities Diversions

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Hand-held Breaker	CNP024	2	108	50%			108
Mini backhoe	CNP082	1	94	50%			91
Truck	CNP067	1	117	30%			112
						Total	114

Piling/Walling - Some 40 Nos. Bored Piles

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Pile Rig	BS C11/2	1	112	70%			110
Air Compressor	CNP002	1	102	100%			102
Generator, super silenced	CNP103	1	95	100%			95
Concrete Lorry Mixer	CNP044	1	109	30%			104
						Total	112

Bulk Excavation-Soft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Backhoe	CNP081	1	112	70%			110
Truck	CNP067	2	117	30%			115
Water pump, submersible (electric)	CNP283	1	85	100%			85
						Total	116

Bulk Excavation-weak Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Breaker	CNP028	1	122	50%			119
Backhoe	CNP081	1	112	50%			109
Ventilation fan	CNP241	1	108	100%			108
Water pump, submersible (electric)	CNP283	1	85	100%			85
Truck	CNP067	1	117	30%			112
Crane	CNP048	1	112	30%			107
						Total	121

Horizontal Adit

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Breaker	CNP028	2	122	50%				122
Backhoe	CNP081	1	112	50%				109
Ventilation fan	CNP241	1	108	100%				108
Water pump, submersible (electric)	CNP283	1	85	100%				85
Crawler mounted rock drill trucks	CNP182	1	123	40%				119
Crane	CNP048	1	112	30%			107	
Truck	CNP067	2	117	30%			115	
						Total	115	124

Sheet Piling

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Sheet Piling Machine	BS C4/13	1	106	70%			104
						Total	104

Bulk Excavation-Soft for Lower Ground Lobby

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Backhoe	CNP081	1	112	50%			109
Truck	CNP067	1	117	30%			112
Water pump, submersible (electric)	CNP283	1	85	100%			85
						Total	114

Works Area J3 - UNI Entrance A

Construct Lower Ground Lobby

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Concrete pump	CNP047	1	109	100%			109
Concrete Lorry Mixer	CNP044	1	109	30%			104
Poker, vibratory, hand-held	CNP170	4	113	100%			119
Water pump, submersible (electric)	CNP283	1	85	100%			85
						Total	120

Permanent Shaft Lining

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Air Compressor	CNP002	1	102	100%				102
Concrete pump	CNP047	2	109	100%				112
Crane	CNP048	1	112	15%				104
Concrete Lorry Mixer	CNP044	2	109	30%			107	
Poker, vibratory, hand-held	CNP170	4	113	100%			119	
						Total	119	113

Construct above-ground Lift Shaft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Concrete pump	CNP047	1	109	100%			109
Concrete Lorry Mixer	CNP044	1	109	30%			104
Poker, vibratory, hand-held	CNP170	4	113	100%			119
Water pump, submersible (electric)	CNP283	1	85	100%			85
					-	Total	120

Reinstatement

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)	dB(A)
Sheet Piling Machine	BS C4/13	1	106	70%			104			
Truck	CNP067	1	117	30%				112		
Power Rammer	CNP169	1	108	100%				108		
Roller, vibratory	CNP186	1	108	100%				108		
Air Compressor	CNP002	1	102	100%					102	
Concrete Lorry Mixer	CNP044	1	109	100%					109	
Poker, vibratory, hand-held	CNP170	2	113	100%					116	
Asphalt Paver	CNP004	1	109	100%						109
						Total	104	114	117	109

Station Fitout

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Truck	CNP067	1	117	100%			117
						Total	117

Works Area J1 - UNI Vent Shaft VS Y

Possession of site

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Hand-held Breaker	CNP024	1	108	50%				105
Air Compressor	CNP002	1	102	100%			102	
Mini backhoe	CNP082	1	94	50%			91	
Truck	CNP067	1	117	30%			112	
						Total	112	105

Utilities Diversions

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Hand-held Breaker	CNP024	1	108	50%			105
Mini backhoe	CNP082	1	94	50%			91
Truck	CNP067	1	117	30%			
						Total	107

Piling/Walling

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Pile Rig	BS C11/2	1	112	40%			108
Air Compressor	CNP002	1	102	100%			102
Generator, super silenced	CNP103	1	95	100%			95
Electric Winch	CNP262	1	95	10%			85
						Total	109

Bulk Excavation-Soft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Backhoe	CNP081	1	112	50%			109
Truck	CNP067	1	117	30%			112
Water pump, submersible (electric)	CNP283	1	85	100%			85
	-					Total	114

Bulk Excavation-weak Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP028	1	122	50%			119		
Backhoe	CNP081	1	112	50%			109		
Ventilation fan	CNP241	2	108	100%			111		
Water pump, submersible (electric)	CNP283	1	85	100%			85		
Truck	CNP067	1	117	30%				112	
Crane	CNP048	1	112	30%			107		
Rock Drill	CNP182	1	123	35%					118
						Total	120	112	118

Horizontal Adit

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP028	1	122	50%			119		
Backhoe	CNP081	1	112	50%			109		
Ventilation fan	CNP241	1	108	100%			108		
Water pump, submersible (electric)	CNP283	1	85	100%			85		
Crawler mounted rock drill trucks	CNP182	1	123	40%					119
Crane	CNP048	1	112	30%				107	
Truck	CNP067	1	117	30%				112	
						Total	120	113	119

Permanent Shaft Lining

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Air Compressor	CNP002	1	102	100%				102
Concrete pump	CNP047	1	109	100%				109
Crane	CNP048	1	112	30%				107
Concrete Lorry Mixer	CNP044	1	109	30%			104	
Poker, vibratory, hand-held	CNP170	2	113	100%			116	
						Total	116	112

Works Area J1 - UNI Vent Shaft VS Y

Concreting of above-ground Vent Shaft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Concrete pump	CNP047	1	109	100%			109
Concrete Lorry Mixer	CNP044	1	109	30%			104
Poker, vibratory, hand-held	CNP170	2	113	100%			116
Water pump, submersible (electric)	CNP283	1	85	100%			85
Crane	CNP048	1	112	20%			105
						Total	117

Reinstatement

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)	dB(A)
Truck	CNP067	1	117	30%						112
Power Rammer	CNP169	1	108	70%			106			
Roller, vibratory	CNP186	1	108	70%			106			
Air Compressor	CNP002	1	102	100%				102		
Concrete Lorry Mixer	CNP044	1	109	30%				104		
Poker, vibratory, hand-held	CNP170	2	113	100%				116		
Asphalt Paver	CNP004	1	109	100%					109	
						Total	109	116	109	112

Works Area G - UNI Construction Shaft (at Kennedy Town Praya) - Conveyor Options

Possession of site / Mobilization

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Hand-held Breaker	CNP024	2	108	50%			108
Mini backhoe	CNP082	1	94	50%			91
Truck	CNP067	1	117	30%			112
						Total	114

Piling/Walling - Some 40 Nos. Bored Piles

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Pile Rig	BS C11/2	2	112	70%			113
Air Compressor	CNP002	2	102	100%			105
Generator, super silenced	CNP103	1	95	100%			95
Concrete Lorry Mixer	CNP044	2	109	30%			107
Crane	CNP048	1	112	30%			107
						Total	115

Bulk Excavation-Soft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Backhoe	CNP081	2	112	50%			112
Truck	CNP067	4	117	30%			118
Water pump, submersible (electric)	CNP283	2	85	100%			88
						Total	119

Bulk Excavation-weak Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Breaker	CNP028	2	122	50%			122
Backhoe	CNP081	2	112	50%			112
Ventilation fan	CNP241	4	108	100%			114
Water pump, submersible (electric)	CNP283	2	85	100%			88
Truck	CNP067	4	117	30%			118
Crane	CNP048	2	112	30%			110
						Total	124

Excavation - Rock (Horizontal Adit)

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP028	2	122	50%			122		
Backhoe	CNP081	2	112	50%			112		
Ventilation fan	CNP241	2	108	100%			111		
Water pump, submersible (electric)	CNP283	2	85	100%			88		
Rock Drill	CNP182	1	123	35%				118	
Truck	CNP067	4	117	30%					118
Crane	CNP048	2	112	30%					110
						Total	123	118	118

Works Area G - UNI Construction Shaft (at Kennedy Town Praya) - Conveyor Options

Mucking-out / Transporting of spoil

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Air Compressor	CNP002	1	102	100%			102		
Concrete pump	CNP047	1	109	50%			106		
Water pump, submersible (electric)	CNP283	1	85	100%			85		
Ventilation fan	CNP241	4	108	100%			114		
Mobile Crane	CNP048	1	112	30%				107	
Truck	CNP067	2	117	65%				118	
Conveyor	CNP041	2	90	100%			93	93	93
Concrete Mixer Truck	CNP044	2	109	65%				110	
Barge	CNP061	2	104	100%					107
Crane	CNP048	2	112	30%					110
						Total	115	119	112

Construction Access

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Truck	CNP067	2	117	30%			115
Water pump, submersible (electric)	CNP283	1	85	100%			85
Ventilation fan	CNP241	4	108	100%			114
						Total	117

Station Fitout

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Truck	CNP067	2	117	100%			120
Ventilation fan	CNP241	4	108	100%			114
Water pump, submersible (electric)	CNP283	1	85	100%			85
						Total	121

Backfill

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Concrete Lorry Mixer	CNP044	4	109	30%			110
Concrete pump	CNP047	1	109	100%			109
						Total	112

Works Area E & F - PCWA Barging Point

Possession of site

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Breaker	CNP025	1	111	100%			111
Backhoe	CNP081	1	112	80%			111
Concrete saw	CNP203	1	115	60%			113
Compressor	CNP002	1	102	100%			102
Hand held Breaker	CNP024	2	108	100%			111
Truck	CNP067	1	117	100%			117
						Total	120

Construction

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Mobile Crane	CNP048	1	112	70%			110
Compressor	CNP002	1	102	100%			102
Concrete Mixer Truck	CNP044	1	109	40%			105
Concrete poker	CNP170	2	113	40%			112
Truck	CNP067	1	117	70%			115
						Total	118

Operation

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Conveyor belts	CNP041	1	90	100%			90
Barge	CNP061	1	104	100%			104
Trucks	CNP067	3	117	100%			122
Crusher	EIA Ref.	1	118	100%			118
Front end loader	BS C3/97	1	105	60%			103
Mobile crane	CNP048	1	112	80%			111
						Total	124

EIA Ref. : The SWL of crusher was made reference to the approved EIA Report of Development at Anderson Road, 1998.

Act Construction Element	_			Feb Ma	ar Apr	May	2009 Jun Jul	Augiss	n Oct N		c Jan	Feb M	ar An-	May	2010 Jun Ju		Sep Oct	Nov D	c .lan E	eh Mar	Anr M	20 av Jun		in Sen	Oct No	(Dec	lan Fo	h Mar	Anr May	201		in Ser		Nov D	ec la	n Foh	Mar A	or May	2013 Jun Ju		1 Sen ()ct
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/orks Area J2 - UNI Entrance B1					-																														Ť							È
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6 Excavation - Rock	104	8.1	81																		81																					
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8 Possession of site / Mobilization	98	142			_	50	50 50	50 50					_														_		_			_	\vdash		+	_	\rightarrow	<u> </u>	\vdash	<u> </u>	++	_
9 Demolition of Hill Road Rest Garden ^ 10 Piling/Walling ^	101 103	142 136			_			53 53 55	5 55 5	55 55	i		_														-					_	\vdash		+			'	\vdash		++	
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17 Possession of site	99		0																0																						\square	
18 Utilities Diversions	99	-	0		_					_	_		_								0 0	_	0						_			_	\vdash		+		\rightarrow	<u> </u>	\vdash	'	++	_
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25 Utilities Diversions 26 Piling/Walling - Some 60 Nos. Bored Piles ^	100 101	284 236	46 49		_					_		4	6 46		40	9 49	49										_		_			_	\mapsto		—				\vdash	+	++	-+
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30 Permanent Shaft Lining 31 Construct above-ground Lift Shaft	98 98	284 284	44 44		_					_			_											44	44		_		44	44		_	\mapsto		—				\vdash	+	++	-
32 Sheet Piling for Vent Ducts																													42						+		-	+		+	++	-
33 Bulk Excavation-Soft for Vent Ducts	94	284	40																											40												
34 Horizontal Duct	94	284	40																+												4	0 40						'	\square	'		
35 Concreting Vent Ducts and Vent Building 36 Reinstatement	98 108	284	44 54		-					_	-		-						+ $+$					+			_					-	44		54 54	1 54	+	<u> </u>	\vdash	+	++	-
37 Station Fitout	96	284																																0			42 4	2 42	42 4	42 42	42	42
Works Area J3 - UNI Entrance A																																										
38 Possession of site	99	220	47									47																							_		-	T	F			
39 Utilities Diversions	99	220												47	47																										TL	_
40 Piling/Walling - Some 40 Nos. Bored Piles ^	101	216															49	49 4																	_				\square		++	
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Works Area J1 - UNI Vent Shaft VS Y	93	220	41																												_	41	41	41	+		_			+	┢━┢	_
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52 Possession of site 53 Utilities Diversions	100 99	96 96	55 54		-					_	-		-						+ $+$						55 54		_					-	┢─┤	_	+		+	<u> </u>	\vdash	+	++	-
54 Piling/Walling ^	101		57																					57	57 57		57								+		-	+		+	++	-
55 Bulk Excavation-Soft ^	94		49																								49															
56 Bulk Excavation-weak Rock ^ 57 Excavate Rock Shaft *	100	96	55		_					_	_		_														55 55 0 0		_			_	\vdash		+		\rightarrow	<u> </u>	\vdash	'	++	_
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59 Permanent Shaft Lining ^	95		50																											50	50											_
60 Concreting of above-ground Vent Shaft	98	96																													5	3 53	53	53								
61 Reinstatement Norks Area G - UNI Construction Shaft (at Kennedy	99	96	54		_			_					_		_		_				_		_		_		_		_		_	_	⊢		╧		_	_		'	┢═╈╸	_
Fown Praya)		1																																								
62 Possession of site / Mobilization ^	99		0			0	0 0	0													_										_						_			_		
63 Piling/Walling - Some 40 Nos. Bored Piles ^	104	-	0					0 0																																		
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Remarks:

1. Noise sources at more than 300m from the sensitive receiver are not considered in cumulative noise assessment due to large distance attenuation effect.

2. Slant distance (m)

3. 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.

* No PMEs used at surface

A Construction activities would not be conducted simultaneously, so the max SPL among these activities would be used for the calculation of construction noise of that particular month. These activities include: act. 2 & 3 in month 31, act. 42 & 44 in month 22, act. 40 & 41 in month 23, act. 41 & 42 in month 24, act. 44 & 48 in month 31, act. 42 & 44 in month 31, act. 42 & 44 in month 30, act. 52 & 55 in month 40, act. 52 & 55 in month 11.

Noise Exceedance

The use of PME would not be visible when viewed from the assessment facade of NSR. The NSR is considered to be totally screened. According to GW-TM, a noise reduction of 10 dB(A) would be achieved.

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NSR: UNI4 - The Belcher's (Tower 8) 2009
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 Image: Constraint of the Works Area I - UNI Entrance C1 + VS + Chiller 24 Possession of site
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Remarks:

1. Noise sources at more than 300m from the sensitive receiver are not considered in cumulative noise assessment due to large distance attenuation effect

2. Slant distance (m)

3. 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.

* No PMEs used at surface

^ Construction activities would not be conducted simultaneously, so the max SPL among these activities would be used for the calculation of construction noise of that particular month 21, act. 2 & 3 in month 31, act. 42 & 44 in month 31, act. 40 & 41 in month 22, act. 41 & 42 in month 32, act. 41 & 42 in month 31, act. 41 & 42 & & 49 in month 41, act. 54, 55 & 56 in month 36, act. 58 & 59 in month 40, act. 62 & 63 in month 7, and act. 64, 65 & 66 in month 11,

Noise Exceedance

The use of PME would not be visible when viewed from

the assessment facade of NSR. The NSR is considered to be totally screened. According to GW-TM, a noise reduction of 10 dB(A) would be achieved.

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NSR: UNI 11- Sik On Building			F				000	0								010				-				0011								0010				-			<u> </u>	040				T		00			
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18 Utilities Diversions	99		45						-	-		-								43		45	45											-			-		+		_		-		+				_
19 Piling/Walling	101	293.0	47																				4	7 47																									
20 Bulk Excavation-Soft ^	94		40			LТ					\square			ЦТ				ЦТ							40						$+\top$		LT		\square	\square		\square			42	\square		LТ	Ц				+ - 1
21 Bulk Excavation-weak Rock ^ 22 Excavate Rock ^	100	296.0 296.0	46 52	_	+	\vdash		+		-	+		-	\vdash		+ +	+	\vdash	-+	+		+	-+			6 46 2 52				\vdash	++	_	\vdash	+	\vdash	+	-	++	+	++	<u>+</u> _'	\vdash	_	++	+		_	\vdash	+ - 1
22 Excavate Rock ^ 23 Construct Ground Level Entrance		296.0 296.0	52 44	+	+	┝─┼		+	-+	_	+	-+	+	\vdash		+ +	+	\vdash	+	╉╌┤		╉╌╉		+	52 52	< 52	JZ 5	52		\vdash	44 4	4 44	44 A	4 44	\vdash	+	+	+ +	+	++	+'	\vdash		++	+	-+	+	+ +	+ - 1
Works Area I - UNI Entrance C1 + VS + Chiller	00	-55.0																																															
24 Possession of site	100	116.0	54										4 54	E4								+	-	-				-											_		42								
24 Possession of site 25 Utilities Diversions		116.0	54 54			\vdash		+			+	54	1 54 54			+ +		\vdash	+	+		+			+	+		+	+		+ +	-	\vdash			+		+	+	+ $+$	+'	+			+		+	+	+1
26 Piling/Walling - Some 60 Nos. Bored Piles ^		114.0	55													55 5	55																			\mathbf{L}^{\dagger}			╧						++				
27 Bulk Excavation-Soft ^	96		50														50		50																														
28 Bulk Excavation-weak Rock ^	100	116.0	54		_			_											54 54	54	54 54	54	54																_		'								
29 Excavate Rock Shaft * 30 Permanent Shaft Lining	- 98	- 116.0	0 52		_			_			_		_						0 0	0	0 0	0	0		52	2 52		_	-										—		+/				+		_		
31 Construct above-ground Lift Shaft	98		52							_															02						52 5	2							+						+				
32 Sheet Piling for Vent Ducts	94	104.0	49																												49																		
33 Bulk Excavation-Soft for Vent Ducts	94		48																												4	8 48									\square				\square				
34 Horizontal Duct 35 Concreting Vent Ducts and Vent Building	94	116.0 116.0	48 52							_			_						_	-												_	48 4	-8 52	50				+		<u> </u>				+		_		
36 Reinstatement	108		62						-	-		-											-											52	62	62	62		+		_		-		+				_
37 Station Fitout		116.0																																				50 5	50 50	0 50 5	j0 50	50	50 50	50 5	3				
Works Area J3 - UNI Entrance A																																																	
38 Possession of site	99	228.0	47									47	7																							1 1			_		_				+				
39 Utilities Diversions	99		47												47 47																										-								
40 Piling/Walling - Some 40 Nos. Bored Piles ^	101		49															49	49 49																														
41 Bulk Excavation-Soft ^	95		43 46							_									43	43	10 10		10 1	0 40	10									_			_		+		+		_		\rightarrow		_		
42 Bulk Excavation-weak Rock ^ 43 Excavate Rock *	98	- 228.0	46		-					_										46	46 46	46	46 4	0 40	46							_		_					—		_				+		_		_
44 Horizontal Adit ^	100	228.0	48																				-		48 48	8 48	48 4	18																					
45 Sheet Piling	94		42																	42																													
46 Bulk Excavation-Soft for Lower Ground Lobby	93		41							_											41	_	10 1	0										_			_		+		+		_		\rightarrow		_		\rightarrow
47 Construct Lower Ground Lobby 48 Permanent Shaft Lining ^	98 98	228.0	46 46		_					_			_										46 4	6			4	46 46	46	46 46	46 4	6		_							+				+		_		
49 Construct above-ground Lift Shaft ^	98		46			\vdash		+			+			\vdash		++		\vdash		+		++		+	\vdash				10		.0 .	6 46	46	+		+		++	+	++	+	\vdash			++			++	+ +
50 Reinstatement		228.0	47																									47	47																				
51 Station Fitout	93	228.0	41			Ц		+			\square									ĻĮ		\square									\square		4	1 41	41						\perp				┶┛				$ \rightarrow $
Works Area J1 - UNI Vent Shaft VS Y																																																	
52 Possession of site			87																							87																							
53 Utilities Diversions		10.3			+	\vdash		+	-+	-	+		_	\vdash		++		\vdash		+		+	-+	+		4 01	82	4	+	\vdash	++	_	\vdash	+		+		++	+	++	<u> </u>	\vdash		++	+		+	\vdash	+
54 Piling/Walling ^ 55 Bulk Excavation-Soft ^			84 89	-+	+	┝┼		+	-+	+	+	-+	+	\vdash		+ +	+	\vdash	+	╉╌┤		╉╌╉	+	+	84	4 84	84 8	84 84 89		\vdash	++	-	\vdash	+	\vdash	╉╌┼	+	+	+	++	+-'	\vdash		++	+		+	++	+ - 1
56 Bulk Excavation-weak Rock ^			95			\vdash		+		-	+			\vdash		++		\vdash		+		+	+	+	\vdash	+	\vdash		95		++	_	\vdash			+		++	+	++	+	\vdash			++			++	++
57 Excavate Rock Shaft *	-	-	0																										0																				
58 Horizontal Adit ^			95			LТ		\square			\square			LТ				ЦТ				$+ \mp$	$-\top$		ЦТ	\square	ЦТ		+ - 1		95		LТ		\square	\square		$+ \top$	$-\!$	$+\top$	47	ĻТ		\square	$+ \square$				\square
59 Permanent Shaft Lining ^ 60 Concreting of above-ground Vent Shaft			91 92	_	+	\vdash		+		_	+	_		\vdash		+ +		\vdash	_	+		+		+	\vdash	+	\vdash	+	+	\vdash	91 9	91	92 9	2 92	92	++	_	+ +	+	++	+-'	\vdash	_	++	+		+	+	+ - 1
61 Reinstatement			92			+		+								+ +		\vdash	+	+		+		+				+	+		+		52 9	- 52	32	╉╌┼			+	+ +	+-'			91	++		+	+	+ - 1
Works Area G - UNI Construction Shaft (at Kennedy										_																																							
Town Praya)																																																	
62 Possession of site / Mobilization ^	99	-	0		\square	0	0 0				$+ \neg$			\square				ĻТ		\square		μŢ	$-\Gamma$		\square	$+ \Box$	ЦГ		$+ \neg$		+ T		ĻГ		\square	ĻТ	$- \square$	+ T	<u> </u>	+ T	47	ĻТ		$+ \Box$	ᆔᅴ		-	\square	+
63 Piling/Walling - Some 40 Nos. Bored Piles ^ 64 Bulk Excavation-Soft ^	104 97	-	0	_	+	\vdash		0	0		0	_		\vdash		++	+	\vdash	_	+		+	_		\vdash	+	\vdash		+	\vdash	+ +	+	\vdash	+	\vdash	++	_	+ +	+	++	+-'	\vdash	_	++	+		+	+	+ - 1
64 Bulk Excavation-Soft ^ 65 Bulk Excavation-weak Rock ^	97	-	0		+	\vdash		+		0		0 0		\vdash	_	++		\vdash				++		-	\vdash	+	-+	+	+	\vdash	+	_	\vdash		\vdash	++	-	+	+	++	+	\vdash	-	++	++			++	++
66 Excavation - Rock (Horizontal Adit) ^	101	-	0									0 0		0	0 0	0						$\pm \pm$		1												\mathbf{L}^{\dagger}			╧						<u>+</u> +	_1			
67 Mucking-out / Transporting of spoil	103	-	0													(0 C	0	0 0	0	0 0	0	0 0	0 C	0 0	0	0 (0 0	-												\Box								
68 Construction Access	100	-	0			\vdash		+		_	+		_	\vdash		+		\square		+		+			\square	+		0	0	0 0										+	<u>+</u> _'	\square		\vdash	+		_	\square	+
69 Station Fitout 70 Backfill	101 96	-	0			\vdash		+		_	+		_	\vdash	_	++		\vdash		+		+			\vdash	+	-+	_	+	\vdash	+	J 0	0 (5 0	0 0	U	0 0	U	0	0 0	0 0	0	_	++	+		_	\vdash	++
Works Area E & F - PCWA Barging Point	90	-	U																																						, ,	0			╆┹				
71 Possession of site / Mobilization	106	•	0									0																1											-										
72 Construction	103	-	0										0	0	0 0	0 (D																																
73 Operation	101	-	0		\square									LТ												_		_	-	0 0						\vdash		\square	$-\!\!\!-$		47	LТ		ЦŢ	┯┓				\square
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Remarks:

1. Noise sources at more than 300m from the sensitive receiver are not considered in cumulative noise assessment due to large distance attenuation effect.

2. Slant distance (m)

2. Slart distance (m)
3. 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.
* No PMEs used at surface
^ Construction activities would not be conducted simultaneously, so the max SPL among these activities would be used for the calculation of construction noise of that particular month. These activities include: act. 2 & 3 in month 21, act. 9 & 10 in month 8, act. 20, 21 & 22 in month 31, act. 42 & 44 in month 31, act. 26 & 27 in month 20, act. 27 & 28 in month 22, act. 40 & 41 in month 23, act. 41 & 42 in month 24, act. 44 & 48 in month 35, act. 48 & 48 in month 36, act. 28 & 3 in month 21, act. 9 & 10 in month 8, act. 20, 21 & 22 in month 31, act. 42 & 44 in month 31, act. 26 & 27 in month 20, act. 27 & 28 in month 22, act. 40 & 41 in month 23, act. 41 & 42 in month 42, act. 44 & 48 in month 35, act. 48 & 48 in month 30, act. 40 & 41 in month 23, act. 41 & 42 in month 42, act. 44 & 48 in month 35, act. 48 & 48 in month 30, act. 40 & 41 in month 23, act. 41 & 42 in month 42, act. 44 & 48 in month 35, act. 48 & 48 in month 30, act. 48 & 48 in month 40, act. 60 & 68 in month 7, and act. 64, 65 & 66 in month 10.
Noise Exceedance
The use of PME would not be visible when viewed from the assessment facade of NSR. The NSR is considered to be totally screened. According to GW-TM, an obse total according to GW-TM, an obse total according to GW-TM.

Construction Noise Impact Assessment – SYP Station

Works Area N1 - SYP Entrance A1 & A2

Possession of site

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Mini backhoe	CNP082	1	94	50%			91
Truck	CNP067	1	117	30%			112
Air Compressor	CNP002	1	102	100%			102
Hand Held Breaker	CNP024	2	108	50%			108
Lorry Crane	CNP145	1	105	30%			100
Generator, super silenced	CNP103	1	95	100%			95
						Total	114

Utilities Diversions

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Mini backhoe	CNP082	1	94	50%			91
Truck	CNP067	1	117	50%			114
Air Compressor	CNP002	3	102	100%			107
Hand Held Breaker	CNP024	2	108	50%			108
						Total	116

Demolition of Existing Building

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Hydraulic Breaker	CNP028	2	122	80%				124
Mini backhoe	CNP082	3	94	50%			96	
Truck	CNP067	1	117	50%			114	
						Total	114	124

Install sheet piles and bored piles at playground

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Pile Rig	BS C11/2	1	112	70%					110
Air Compressor	CNP002	1	102	100%				102	
Generator, super silenced	CNP103	1	95	100%				95	
Concrete Lorry Mixer	CNP044	2	109	30%				107	
Gikken Pile Drawer	other Ref.	1	100.8	40%			97		
						Total	97	108	110

Excavate to top slab level

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Backhoe	CNP081	1	112	70%			110	
Truck	CNP067	2	117	30%				115
Water pump, submersible (electric)	CNP283	2	85	100%			88	
						Total	110	115

Build up fill platform to +7mPD

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Backhoe	CNP081	1	112	50%			109
Roller, vibratory	CNP186	1	108	100%			108
						Total	112

Concrete roof slab

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Concrete Lorry Mixer	CNP044	2	109	30%			107
Concrete pump	CNP047	1	109	100%			109
Air Compressor	CNP002	1	102	100%			102
Poker, vibratory, hand-held	CNP170	4	113	100%			119
						Total	120

Works Area N1 - SYP Entrance A1 & A2

Install bored piles and H-piles for shaft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Pile Rig	BS C11/2	1	112	70%				110
Air Compressor	CNP002	1	102	100%			102	
Generator, super silenced	CNP103	1	95	100%			95	
Concrete Lorry Mixer	CNP044	1	109	30%			104	
						Total	106	110

Excavate under top slab level

Enternate anales top class letter								
Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Backhoe	CNP081	1	112	50%			109	
Truck	CNP067	2	117	30%				115
Water pump, submersible (electric)	CNP283	2	85	100%			88	
Ventilation fan	CNP241	1	108	100%			108	
Crane	CNP048	1	112	30%			107	
						Total	113	115

Excavate to tunnel level

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Hand Held Breaker	CNP024	1	108	50%			105		
Backhoe	CNP081	1	112	80%			111		
Ventilation fan	CNP241	1	108	100%			108		
Water pump, submersible (electric)	CNP283	2	85	100%			88		
Truck	CNP067	1	117	30%					112
Rock Drill	CNP182	1	123	35%				118	
Steel Bender	CNP021	1	90	50%			87		
Welder	other Ref.	1	78	50%			75		
Crane	CNP048	1	112	30%					107
					•	Total	113	118	113

Concreting Air Compressor Room and Backfill top slab

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Concrete Lorry Mixer	CNP044	2	109	30%			107
Concrete pump	CNP047	1	109	100%			109
Air Compressor	CNP002	1	102	100%			102
Poker, vibratory, hand-held	CNP170	4	113	100%			119
					•	Total	120

Construct Noise Insulating Cover and Install Compressed Air Equipment

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Generator, super silenced	CNP103	1	95	100%			95
Mobile Crane	CNP048	1	112	70%			110
Truck	CNP067	1	117	30%			112
						Total	114

Tunnel Construction

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	5	102	100%			109
Ventilation fan	CNP241	2	108	100%			111
Water Cooling Tower	other Ref.	5	105	100%			112
						Total	116

Works Area N1 - SYP Entrance A1 & A2

Construct Box Tunnel Adit

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Electric Winch	CNP262	1	95	10%			85
Air Compressor	CNP002	2	102	100%			105
Concrete Lorry Mixer	CNP044	2	109	30%			107
Concrete pump	CNP047	1	109	100%			109
Poker, vibratory, hand-held	CNP170	6	113	100%			121
Water pump, submersible (electric)	CNP283	2	85	100%			88
Ventilation fan	CNP241	2	108	100%			111
Truck	CNP067	2	117	30%			115
						Total	123

Construct Escalator Well at playground

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Hand Held Breaker	CNP024	1	108	50%			105	
Backhoe	CNP081	2	112	50%			112	
Ventilation fan	CNP241	1	108	100%			108	108
Water pump, submersible (electric)	CNP283	2	85	100%			88	
Truck	CNP067	2	117	30%				115
Crane	CNP048	1	112	30%			107	
						Total	115	116

Construct Ventilation Shaft and Plant Room / Construct Ground Level Entrance

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Mobile Crane	CNP048	1	112	30%			107
Air Compressor	CNP002	2	102	100%			105
Concrete Lorry Mixer	CNP044	2	109	30%			107
Concrete pump	CNP047	1	109	100%			109
Poker, vibratory, hand-held	CNP170	6	113	100%			121
Water pump, submersible (electric)	CNP283	1	85	100%			85
						Total	121

Note:

Other Ref. : The SWL of welder was made reference to the Spur Line EIA

Other Ref. : The SWL of water cooling tower was made reference to the "Good Practices on Ventilation System Noise Control"

Works Area M1 - SYP Entrance B1 & B2

Demolition of Existing Building

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)	dB(A)
Concrete Corer	CNP042	1	117	80%				116		
Saw, wire	CNP205	1	101	80%					100	
Concrete Crusher	CNP055	1	103	80%						102
Backhoe	CNP081	1	112	50%			109			
Truck	CNP067	1	117	30%			112			
						Total	114	116	100	102

Piling/Walling

Plling/wailing									
Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Pilling, auger	CNP167	2	114	70%				115	
Air Compressor	CNP002	2	102	100%			105		
Crane	CNP048	1	112	30%			107		
Truck	CNP067	1	117	30%					112
						Total	109	115	112

Bulk Excavation-Soft

Crane	CNP048	1	112	60%		Total	110 112	113	115
Truck	CNP067	1	117	60%					115
Water pump, submersible (electric)	CNP283	2	85	100%			88		
Ventilation fan	CNP241	2	108	100%				111	
Backhoe	CNP081	1	112	50%			109		
Breaker	CNP025	1	111	50%				108	
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL

Bulk Excavation-weak Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	BS C8/12	1	106	50%				103	
Backhoe	BS C3/97	1	105	50%			102		
Ventilation fan	CNP241	2	108	100%				111	
Water pump, submersible (electric)	CNP283	2	85	100%			88		
Truck	BS C9/39	1	103	60%					101
Crane	BS C7/114	1	101	60%			99		
					•	Total	104	112	101

Excavate Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP025	1	111	50%				108	
Backhoe	CNP081	1	112	50%			109		
Ventilation fan	CNP241	2	108	100%			111		
Water pump, submersible (electric)	CNP283	2	85	100%				88	
Rock Drill	CNP182	1	123	70%				121	
Truck	CNP067	1	117	30%					112
Crane	CNP048	1	112	30%			107		
						Total	114	122	112

Concrete vertical shaft

Water pump, submersible (electric) Ventilation fan	CNP283 CNP241	1	85 108	100%			85 111		
Poker, vibratory, hand-held	CNP170	5	113	100%			120		
Concrete pump	CNP047	1	109	100%					109
Concrete Lorry Mixer	CNP044	2	109	30%				107	
Air Compressor	CNP002	1	102	100%				102	
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL

Works Area M1 - SYP Entrance B1 & B2

Construct Ground Level Entrance

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Mobile Crane	CNP048	1	112	30%				107	
Air Compressor	CNP002	1	102	100%				102	
Concrete Lorry Mixer	CNP044	2	109	30%				107	
Concrete pump	CNP047	1	109	100%					109
Poker, vibratory, hand-held	CNP170	3	113	100%			118		
Ventilation fan	CNP241	1	108	100%			108		
						Total	118	110	109

Station Fitout

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Truck	CNP067	2	117	70%			118
						Total	118

Works Area L1 - SYP Entrance B3

Possession of site

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Hand Held Breaker	CNP024	2	108	50%			108
Truck	CNP067	1	117	30%			112
						Total	114

Utilities Diversions

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Mini backhoe	CNP082	1	94	50%			91	
Truck	CNP067	1	117	30%			112	
Air Compressor	CNP002	1	102	100%				102
Hand Held Breaker	CNP024	2	108	50%				108
	-					Total	112	109

Piling/Walling

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Pilling, auger	CNP167	1	114	70%				112
Air Compressor	CNP002	2	102	100%				105
Crane	CNP048	1	112	30%				107
Truck	CNP067	1	117	30%				112
Water pump, submersible (electric)	CNP283	1	85	100%			85	
Generator, super silenced	CNP103	1	95	100%			95	
						Total	95	116

Bulk Excavation-Soft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP025	1	111	50%				108	
Backhoe	CNP081	1	112	50%			109		
Ventilation fan	CNP241	1	108	100%			108		
Water pump, submersible (electric)	CNP283	2	85	100%				88	
Truck	CNP067	2	117	30%					115
Crane	CNP048	1	112	30%				107	
						Total	112	110	115

Installation of Pipe Pile for Soft Ground Tunnel

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Pilling, auger	CNP167	1	114	60%				112
Air Compressor	CNP002	1	102	100%			102	
Water pump, submersible (electric)	CNP283	1	85	100%			85	
Generator, super silenced	CNP103	1	95	100%			95	
Crawler Crane	BS C7/112	1	102	30%			97	
Grout Mixer	CNP105	1	90	30%			85	
Grout Pump	CNP106	1	105	20%			98	
Ventilation fan	CNP241	2	108	100%			111	
		•				Total	112	112

Excavation along soft ground tunnel

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Backhoe	CNP081	1	112	50%				109
Truck	CNP067	1	117	30%				112
Water pump, submersible (electric)	CNP283	1	85	100%				85
Ventilation fan	CNP241	2	108	100%			111	
Shotcrete Pump	CNP047	1	109	100%			109	
Electric Winch	CNP262	1	95	100%			95	
Crane	CNP048	1	112	30%			107	
						Total	114	114

Works Area L1 - SYP Entrance B3

Concrete Soft Ground Tunnel

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Mobile Crane	CNP048	1	112	30%				107	
Air Compressor	CNP002	1	102	100%				102	
Concrete Lorry Mixer	CNP044	2	109	30%				107	
Concrete pump	CNP047	1	109	100%					109
Poker, vibratory, hand-held	CNP170	5	113	100%			120		
Water pump, submersible (electric)	CNP283	1	85	100%					85
Ventilation fan	CNP241	1	108	100%					108
						Total	120	110	112

Concrete Escalator Inclined

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Mobile Crane	CNP048	1	112	30%				107	
Air Compressor	CNP002	2	102	100%				105	
Concrete Lorry Mixer	CNP044	2	109	30%				107	
Concrete pump	CNP047	1	109	30%					104
Poker, vibratory, hand-held	CNP170	5	113	100%			120		
Water pump, submersible (electric)	CNP283	1	85	100%			85		
Ventilation fan	CNP241	2	108	100%			111		
Grout Mixer	CNP105	1	90	30%					85
Grout Pump	CNP106	1	105	20%					98
						Total	121	111	105

Construct Ground Level Entrance

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Mobile Crane	CNP048	1	112	30%				107	
Air Compressor	CNP002	1	102	100%				102	
Concrete Lorry Mixer	CNP044	2	109	30%				107	
Concrete pump	CNP047	1	109	30%					104
Poker, vibratory, hand-held	CNP170	3	113	100%			118		
Water pump, submersible (electric)	CNP283	1	85	100%			85		
						Total	118	110	104

Note:

Other Ref. : The SWL of crawler crane was made reference to the specification of the plant provided by the Engineer

Works Area M3 - SYP Entrance C

Possession of site

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	1	102	100%			102
Hand Held Breaker	CNP024	2	108	50%			108
Truck	CNP067	1	117	30%			112
						Total	114

Demolition of Existing Building

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Hydraulic Breaker	CNP028	1	122	30%				117	
Concrete Crusher	CNP055	1	103	70%					101
Backhoe	CNP081	2	112	50%			112		
Truck	CNP067	2	117	30%			115		
						Total	117	117	101

Piling/Walling

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Pilling, auger	CNP167	1	114	70%				112	
Air Compressor	CNP002	2	102	100%			105		
Crane	CNP048	1	112	30%			107		
Truck	CNP067	2	117	30%					115
						Total	109	112	115

Bulk Excavation-Soft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP025	2	111	50%				111	
Backhoe	CNP081	2	112	50%			112		
Ventilation fan	CNP241	2	108	100%				111	
Water pump, submersible (electric)	CNP283	2	85	100%			88		
Truck	CNP067	2	117	30%					115
Crane	CNP048	1	112	30%					107
Concrete Lorry Mixer	CNP044	1	109	20%			102		
						Total	112	114	115

Bulk Excavation-weak Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP025	2	111	50%				111	
Backhoe	CNP081	2	112	50%			112		
Ventilation fan	CNP241	2	108	100%				111	
Water pump, submersible (electric)	CNP283	2	85	100%			88		
Truck	CNP067	2	117	30%					115
Crane	CNP048	1	112	30%					107
Concrete Lorry Mixer	CNP044	1	109	20%			102		
						Total	112	114	115

Excavate Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP025	2	111	80%				113	
Backhoe	CNP081	1	112	50%			109		
Ventilation fan	CNP241	2	108	100%			111		
Water pump, submersible (electric)	CNP283	2	85	100%				88	
Rock Drill	CNP182	2	123	35%				121	
Truck	CNP067	2	117	30%					115
Crane	CNP048	1	112	30%					107
		-			·	Total	113	122	115

Works Area M3 - SYP Entrance C

Excavate Rock Adit (Hard Rock Excavation)

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Breaker	CNP025	1	111	70%				109
Backhoe	CNP081	1	112	50%				109
Ventilation fan	CNP241	1	108	100%				108
Water pump, submersible (electric)	CNP283	1	85	100%				85
Crawler mounted rock drill trucks	CNP182	1	123	35%			118	
Truck	CNP067	2	117	30%			115	
Shotcrete Pump	CNP047	1	109	20%			102	
Concrete Lorry Mixer	CNP044	1	109	20%			102	
						Total	120	114

Concrete vertical shaft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Air Compressor	CNP002	1	102	100%				102	
Concrete Lorry Mixer	CNP044	2	109	30%				107	
Concrete pump	CNP047	1	109	100%				109	
Poker, vibratory, hand-held	CNP170	5	113	100%					120
Water pump, submersible (electric)	CNP283	1	85	100%			85		
Ventilation fan	CNP241	2	108	100%			111		
Crane	CNP048	1	112	50%			109		
						Total	113	112	120

Construct Ground Level Entrance, Plant Room and Vent Shaft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Mobile Crane	CNP048	1	112	30%				107	
Air Compressor	CNP002	1	102	100%				102	
Concrete Lorry Mixer	CNP044	2	109	30%				107	
Concrete pump	CNP047	1	109	100%					109
Poker, vibratory, hand-held	CNP170	3	113	100%			118		
Ventilation fan	CNP241	1	108	100%			108		
						Total	118	110	109

Station Fitout

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Truck	CNP067	2	117	100%			120
						Total	120

Works Area M - KGV Construction Shaft

Possession of site

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)
Air Compressor	CNP002	2	102	100%			105
Hand Held Breaker	CNP024	1	108	50%			105
						Total	108

Utilities Diversions

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Mini backhoe	CNP082	1	94	50%			91	
Truck	CNP067	1	117	30%			112	
Air Compressor	CNP002	1	102	100%				102
Hand Held Breaker	CNP024	2	108	50%				108
						Total	112	109

Piling/Walling

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Pilling, auger	CNP167	1	114	70%				112	
Air Compressor	CNP002	4	102	100%			108		
Crane	CNP048	1	112	30%			107		
Truck	CNP067	2	112	30%					110
Rock Drill	CNP182	1	123	70%			121		
						Total	122	112	110

Bulk Excavation-Soft

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP025	2	111	50%				111	
Backhoe	CNP081	2	112	50%			112		
Ventilation fan	CNP241	4	108	100%				114	
Water pump, submersible (electric)	CNP283	2	85	100%			88		
Truck	CNP067	4	117	30%					118
Crane	CNP048	2	112	30%			110		
						Total	114	116	118

Excavate Rock

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Breaker	CNP025	2	111	50%				111	
Backhoe	CNP081	2	112	50%			112		
Ventilation fan	CNP241	2	108	100%			111		
Water pump, submersible (electric)	CNP283	2	85	100%				88	
Rock Drill	CNP182	1	123	70%				121	
Truck	CNP067	3	117	30%					117
Crane	CNP048	1	112	30%			107		
						Total	115	122	117

Works Area O1, O2 and O3 - Ground Treatment

Utilities Diversions

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Mini backhoe	CNP082	1	94	50%			91	
Truck	CNP067	1	117	30%			112	
Air Compressor	CNP002	1	102	100%				102
Hand Held Breaker	CNP024	2	108	50%				108
						Total	112	109

Ground Treatment

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)
Drill rig	CNP072	2	110	50%			110	
Truck	CNP067	1	117	30%			112	112
Air Compressor	CNP002	1	102	100%			102	102
Grout Mixer	CNP105	3	90	80%				94
Grout Pump	CNP106	3	105	60%				108
						Total	114	114

Reinstatement

Powered Mechanical Equipment	TM Ref./	No. of Items	SWL/Item	On-time	Noise Mitigation	Noise Barrier	Total SWL	Total SWL	Total SWL
(PME)	other Ref.		dB(A)	%	Measure	Reduction	dB(A)	dB(A)	dB(A)
Truck	CNP067	1	117	30%				112	
Power Rammer	CNP169	1	108	100%				108	
Roller, vibratory	CNP186	1	108	100%					108
Air Compressor	CNP002	1	102	100%			102		
Concrete Lorry Mixer	CNP044	1	109	30%			104		
Poker, vibratory, hand-held	CNP170	2	113	100%			116		
						Total	116	113	108

Remarks: Utilities diversions and ground treatment would not be carried out simultaneously, thus there would not be any cumulative effect for these two activities.

NSR: SYP1 - No. 18-20 Eastern St

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Remarks:

1. Noise sources at more than 300m from the sensitive receiver are not considered in cumulative noise assessment due to large distance attenuation effect. 2. Slant distance (m)

2. Some detailed (iii)
3. 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.
* No PMEs used at surface

4 Construction activities would not be conducted simultaneously, so the max SPL among these activities would be used for the calculation of construction noise of that particular month. These activities include: act. 4 & 5 in month 24-27, act. 31, 32 & 33 in month 24-27, act. 32, 33 & 34 in month 24-27, act. 32, 33 & 35 in month 28-29, act. 38 & 39 in month 30, act. 39 & 40 in month 32, act. 41, 42, 43 & 46 in month 40-41, act. 48 & 49 in month 18, and act. 71 & 72 in month 24.

Noise Exceedance The use of PME would not be visible when viewed from the assessment facade of NSR. The NSR is considered to be totally screened. According to GW-TM, a noise reduction of 10 dB(A) would be achieved.

NSR: SYP8 - Ivy To	wer																															1	<u> </u>		
Act No.	Construction Element	SWL	Dist ² SI	PL Feb Mar	Apr May	2009 Jun Jul /	Aug Sep	Oct Nov D	Dec Jan	Feb Mar		2010 un Jul A	ug Sep O	ct Nov [Dec Jan Fe	eb Mar Ar		2011 n Jul Au	g Sep Oct	Nov Dec	Jan Feb N	lar Apr M	2012 ay Jun Jul	Aug Sep	Oct Nov	Dec Jan F	eb Mar	Apr May	2013 Jun Jul Ai	ug Sep Oc	t Nov Dec	Jan Feb		2014 May Jun	Jul Aug Sep
																																			66 67 68
	YP Entrance A1 & A2																																		
1 Possession of 2 Utilities Diversion			266.0 4 266.0 4				44		_																										
3 Demolition of			266.0 4 285.0 4					44 44	48 48	48 48		++		+			++	+						+	+										
	iles and bored piles at playground^		266.0 4								47 47 4	7 47 4	47 47																						
5 Excavate to to		94 2											41																						
6 Build up fill pl 7 Concrete roof			298.0 4 266.0 4								41		4	5																					
	biles and H-piles for shaft		266.0 4								47 47 4	7 47																							
9 Excavate und			266.0 4											41																					
10 Excavate to tu			266.0 4								4	3 43 4	43 43 4																	_					
	r Compressor Room and Backfill top slab		266.0 4											45																					
	se Enclosure and Install Compressed Air Equipment	93 2													40 4	0 40																			
13 Tunnel Const 14 Construct Box		103 2 99 2	266.0 5 266.0 4			_							_			5	0 50 50				50 50 5 46 46				50 50	50				_					
15 Not Used	(Tunner Adit	-	- 4															40 40	40 40	40 40	40 40	+0 +0 +	0 40 40										$\rightarrow \rightarrow$		
16 Construct Esc	calator Well at playground	96 2	266.0 4	3																						43	43 43	43							
17 Construct Ver Entrance	ntilation Shaft and Plant Room / Construct Ground Level	94 2	266.0 4	1																					41	41 41							.		
	YP Entrance B1 & B2																																		
	ting SYP Cooked Food Market to proposed location *		-																																
19 Demolition of			9.5 9												91 91 9					\square				+ -									\square		
20 Piling/Walling 21 Bulk Excavati			4.8 9 10.2 9		+ $+$ $+$		\rightarrow					++	++	+		9	6 96 96	96 96		90 90	\vdash			+ +		╞╌╂╌┝	+			+		- -			
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23 Excavate Roc	k^		10.2 9	7																	97 97 9														
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25 Concrete vert 26 Construct Gro			10.2 9		+ + +	-++	+				-++	+	+	+	++		+ +	+ $+$	+ $+$	96 96	96 96	++	93 03	93 03	93 93	93 93	93 93		$\left \right $	+ $+$	+ +	+	-+-+		
27 Station Fitout			10.2 9														++									93 93									
Works Area L1 - S																																			
28 Possession of		95 1	108.0 4	9				4	49																										
29 Utilities Divers	sions	94 1	108.0 4	8					48																										
30 Piling/Walling			108.0 5		$+ \square$					\square		Ę	57					$+ \top$	$+ \top$	$\vdash \square$		$+ \mp$		$+ \top$	$+ \top$		\square				$+ \top$				
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	ong soft ground tunnel^		108.0 5												51 51 5																				
34 Concrete soft	ground tunnel^	97 1	108.0 5	1											51 5	1 51 5																			
35 Concrete Esc			108.0 5														53 53	3 53 53	3 53 53	17 17										_					
36 Construct Gro		93 1	108.0 4	./																47 47															
Works Area M3 - S																0 10																			
37 Possession of 38 Demolition of			244.0 4 244.0 4												42 4	2 42	3 43 43	13																	
39 Piling/Walling			244.0 4														0 40 40	49 49	9 49																
40 Bulk Excavati	on-Soft^		244.0 4																46 46	46 46															
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44 Concrete vert			244.0 4																					44 44	44 44	44									
45 Construct Gro	ound Level Entrance, Plant Room and Vent Shaft	96 2	244.0 4	3																				43 43	43 43	43 43							.		
46 Station Fitout			244.0 4										_									1	3 //3 //3			43 43	43								
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63 Ground Treat 64 Reinstatemen		100 98)	+ +							0	0					+ +	+		\vdash			+ $+$		┝─╂─┼							_++		
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72 Ground Treat		100	- (0			+	+																
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		Total S	SPL, dB	(A)	- -		- 44	44 44 5	52 52	50 49	51 52 5	i2 53 5	58 54 5																- - -				<u>- - </u>		
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Remarks:																																			

Remarks:

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2. Stant distance (m)
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* No PMEs used at surface
^ Construction activities would not be conducted simultaneously, so the max SPL among these activities would be used for the calculation of construction noise of that particular month. These activities include: act. 4 & 5 in month 20, act. 19 & 20 in month 27, act. 21-23 & 25 in month 34-37, act. 31, 32 & 33 in month 21, act. 32, 33 & 34 in month 24-27, act. 32, 33 & 35 in month 28-29, act. 38 & 39 in month 30, act. 39 & 40 in month
32, act. 41, 42, 43 & 46 in month 140-41, act. 43 & 49 in month 16, act. 49, 50 & 51 in month 18, and act. 71 & 72 in month 24.
Noise Exceedance
The use of PME would not be to tailly screened. According
to GW-TM, a noise reduction of 10 dE(A) would be achieved.

NSR: GT5 - Ka On Building

Posses Vilities Vi	Construction Element N1 - SYP Entrance A1 & A2 ession of site es Diversions littion of Existing Building I sheet piles and bored piles at playground^ tate to top slab level^ up fill platform to +7mPD	97 - 97 -	² SPL		200 Apr May Jun Jul 3 4 5 6	Aug Sep		Dec Jan	Feb Mar	r Apr May	2010	Aug. Son	Ort. New			2011					2012				A 14	2013	Aug. 0-12. 0		L	2014		
Image: space of the second s	N1 - SYP Entrance A1 & A2 ession of site so Diversions littion of Existing Building isheet piles and bored piles at playground^ rate to top slab level^ up fili platform to +7mPD	97 - 97 -	Or L					Dec Jan	i cu ivial	. ∽µ⊨ ividy				Dec Jan Ech	Mar Apr Mer		Aug Son C	Oct New "	Dec lon	Feb Mar Ann Mar	Jun Jul A	Sen Oct M	V Dec	an Eoh M								.lul A-
Posses Vilities Vi	ession of site es Diversions littion of Existing Building I sheet piles and bored piles at playground ^A vate to top slab level ^A up fill platform to +7mPD	97 -					9 10	11 12	13 14											37 38 39 40												
Posses Vilities Vi	ession of site es Diversions littion of Existing Building I sheet piles and bored piles at playground ^A vate to top slab level ^A up fill platform to +7mPD	97 -																			10											
2 Utilities 2 Utilities 3 Demoli 3 Demoli 5 Excava 8 Install I 9 Excava 9 Concre 2 Constru- 1 Concre 2 Constru- 1 Concre 2 Constru- 3 Tunnel 4 Constru- 5 Not Us 6 Constru- 5 Not Us 6 Constru- 5 Not Us 6 Constru- 7 Constru- 8 Move the 8 Move the 9 Demoli 9 Demoli 1 Bulk E: 3 Excava 4 Station 7	is Diversions littion of Existing Building I sheet piles and bored piles at playground ^A vate to top slab level ^A up fill platform to +7mPD	97 -	0			0																							+++			
4 Install 4 4 Install 5 5 Excava 6 Excava 7 Concre 8 Install 11 9 Excava 1 Concre 2 Contre 2 Contre 3 Turnel 4 Constr 5 Constr 6 Constructor 7 Constr 7 Constructor 9 Demoli 9 Demoli 9 Demoli 9 Demoli 9 Demoli 9 Excava 11 Bulk Exit 12 Excava 13 Excava 14 Station 7 Station 7 Station 13 Excava 14 Station 15 Concret 16 Constru 17	I sheet piles and bored piles at playground [^] rate to top slab level [^] up fill platform to +7mPD		0				0 0																						\vdash			
5 Excava 5 Excava 7 Concret 8 Install II 9 Excava 9 Excava 1 Concret 2 Construct 3 Tunnel 4 Construct 5 Not Us 6 Construct 7 Construct 8 Move the 9 Demoli 11 Bulk Exition 12 Excava 13 Excava 14 Station 15 Postese 16 Concerte 17 Station 18 Bulk Exit 19 Villing/U 110 Station 12 Installali <t< td=""><td>rate to top slab level^A up fill platform to +7mPD</td><td>102 -</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td>0 0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	rate to top slab level ^A up fill platform to +7mPD	102 -	0						0 0																							
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7 Concret 8 Install III 9 Install III 10 Excava 0 Excava 11 Concret 23 Concret 24 Constr 25 Constr 26 Constr 27 Constr 28 Move tt 90 Demoli 90 Demoli 91 Demoli 92 Demoli 93 Excava 94 Station 75 Concret 65 Construct 76 Station 77 Station 78 Paule E 90 Dilling/U 91 Dilling/		94 -	0									0						_	_						_				+++			
8 Install II 9 Excava 9 Excava 1 Concre 2 Construint 3 Tunnel 4 Construint 5 Not Us 6 Construint 7 Construint 7 Construint 8 Move the Demoli 9 Demoli 9 Demoli 9 Demoli 11 Bulk Exit 12 Station 7 Station 18 Politilities 9 Dilling/V 12 Install Bulk Exit 13 Excava 4 Construint 13 Excava 14 Construint 15 Co	ate reat eleb	95 - 98 -	0							0			0						_										+++			
B Excava Excava Excava Excava Excava Excava Excava Construct Construct Construct Construct Construct Construct Construct Construct Construct Entran Move tu Entran Move tu Entran Entran Move tu Entran Entran Move tu Entran	l bored piles and H-piles for shaft	100 -	0							0 0	0 0		U																+++			
1 Concre 1 Constru 2 Constru 3 Tunnel 5 Not Us 6 Constru 7 Entrant 7 Entrant 8 Move the Demoli 9 Demoli 9 Demoli 9 Demoli 11 Bulk E 22 Eucava 44 Station 7 Station 76 Constru 77 Station 78 Posses 90 Dilling/U 12 Installant 13 Excava 33 Excava 44 Sconstru	vate under top slab level	94 -	0										0	0																		
2 Constru 3 Tunnel 4 Constru 5 Not Us 6 Constru 7 Constru 8 Move tet 8 Move tet 9 Demoli 0 Piling/v 12 Bulk E: 3 Excava 4 Station 7 Station 7 Station 7 Station 7 Station 7 Station 9 Dilling/v 12 Bulk E: 8 Posses 9 Demoli 9 Demoli 13 Excava 14 Station 15 Concre 16 Constru 12 Bulk E: 13 Excava 14 Station 15 Concre 16 Constru 12 Bulk E: 13 Excava 14 Station 15 Concre 16 Constru 16 Constru 17 Concre 16 Constru 17 Concre 18 Concre 1	vate to tunnel level	96 -	0								0 0	0 0	0 0	0																		
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Entrane E	ruct Escalator Well at playground ruct Ventilation Shaft and Plant Room / Construct Ground Level	96 -	0																					0 0	0 0				+++			
8 Move tt 9 Demoli 0 Piling/V. 11 Bulk E: 23 Excava 34 Station 55 Concre 6 Construct 77 Station 78 Posses 90 Utilities 100 Piling/V. 11 Bulk E: 12 Installast 13 Excava 14 Concret 15 Concret 16 Construct		94 -	0																			(0)								
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Excava Concre Concre Concre	lation of Pipe Pile for Soft Ground Tunnel ^A	96 -	0										-	0 0 0	0 0 0	0													+++			
4 Concre 5 Concre 6 Constru	vation along soft ground tunnel^	97 -	0												0 0 0																	
6 Constru	rete soft ground tunnel^	97 -	0												0 0																	
	rete Escalator Inclined ^A	99 -	0												0	0 0	0 0															
	ruct Ground Level Entrance	93 -	0															0	0										$ \longrightarrow $			_
rks Area M	M3 - SYP Entrance C																															
	ession of site	95 -	0											0 0																		
	lition of Existing Building^	96 -	0												0 0	0 0																
9 Piling/V	/Walling^ Excavation-Soft^	102 - 99 -	0													0		0 0	0				_	_					+++			
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3 Excava	vate Rock Adit (Hard Rock Excavation)^	100 -	0																	0 0	0											
4 Concre	rete vertical shaft	97 -	0				_														0 0	0 0 0	0									
5 Constru	ruct Ground Level Entrance, Plant Room and Vent Shaft	96 -	0																		0	0 0 0	0	0								
6 Station	n Fitout^	96 -	0																	0	0 0 0	0 0 0	0						+++			
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rks Area O	01, 02 and 03 - Ground Treatment Works																															
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	es Diversions (Stage 2)	98 -	0					+	+	0								+	+				++	+					+++	++-	+	
	nd Treatment (Stage 2)	100 -	0							0													++						++	++	++	
1 Reinsta	tatement (Stage 2)	98 -	0								0																					
	es Diversions (Stage 3)	94 274.0							\square	$+ \square$	40							$+ \top$					+ T	$+\top$		\square	-+-T		$\downarrow \downarrow \downarrow$	\perp	+ T	
	nd Treatment (Stage 3)	100 274.0				+ $-$	+ $-$	+ $-$	$\left - \right $	+ + -	46	44		\rightarrow		+ + +		+		_	+ + + -	+ + +	++	+		+ $+$ $+$			+++	+	+	
	tatement (Stage 3) es Diversions (Stage 4)	98 274.0 94 144.0				+ $+$	+ $+$	┼─╂─		+ $+$	+	44 46		++	+ + + -	+ + +		+	+			+ + + -	++	+		+ + +	-+-+-	+ + -	+++	++	++	-+
	nd Treatment (Stage 4)	100 144.0							+		+	52				+ + +		+											\vdash	++-		
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	tatement (Stage 4) es Diversions (Stage 5) nd Treatment (Stage 5)	114 20.4					<u> </u>	+	$\left \right $	+ $+$ $-$	+	$ \square $		85 87		+ + +		+	\rightarrow	_		+ + +	++			+ $+$ $+$		+ $+$	+++		+	
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Remarks:

Hemarks:

1. Noise sources at more than 300m from the sensitive receiver are not considered in cumulative noise assessment due to large distance attenuation effect.
2. Slant distance (m)
3. 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.
* No PMEs used at surface
Construction accivities would not be conducted simultaneously, so the max SPL among these activities would be used for the calculation of construction noise of that particular month. These activities include: act. 4 & 5 in month 20, act. 19 & 20 in month 27, act. 21-23 & 25 in month 34-37, act. 31, 32 & 33 in month 21, act. 32, 33 & 34 in month 24-27, act. 32, 33 & 35 in month 28-29, act. 38 & 39 in month 30, act. 39 & 40 in month 32, act. 41, 42, 43 & 49 in month 16, act. 49, 50 & 51 in month 18, and ct. 71 & 72 in month 24.
Noise Exceedance
The use of PME would not be totally screened.
According to GW-TM, a noise reduction of 10 dB(A) would be achieved.