
Construction Noise Impact
Assessment –
KET Station

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

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

Initial possession

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

Utility Diversions

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

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

Commence KET Turnback Tunnel

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No. of Items	SWL/Item dB(A)	On-time %	Noise Mitigation Measure	Noise Barrier Reduction	Total SWL dB(A)	Total SWL 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 (PME)	TM Ref./ other Ref.	No. of Items	SWL/Item dB(A)	On-time %	Noise Mitigation Measure	Noise Barrier Reduction	Total SWL 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 (PME)	TM Ref./ other Ref.	No. of Items	SWL/Item dB(A)	On-time %	Noise Mitigation Measure	Temporary Barrier (KET 1 to 3)		Movable Barrier (KET 4)	
						Noise Barrier Reduction	Total SWL dB(A)	Noise Barrier Reduction	Total SWL 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 (PME)	TM Ref./ other Ref.	No. of Items	SWL/Item dB(A)	On-time %	Noise Mitigation Measure	Noise Barrier Reduction	Total SWL dB(A)	Total SWL dB(A)	Total SWL 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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

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

Demolish Pools and Grandstand

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

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

Tunnel Lining for SYP to KET Tunnel

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area A - Ex-Police Quarter

Utility Diversions

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area B - Abattoir Site

Construct Site Offices + Crusher + Barging Point

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

Reinstatement

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

**Powered Mechanical Equipment (PME) for Different
Construction Tasks during Normal Daytime Working Hours
(Unmitigated Scenario)**

Works Area MA - Underground Magazine Site

Possession of Site

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

Operation of Magazine - Truck

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

Construction Noise Impact
Assessment –
UNI Station

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area J2 - UNI Entrance B1

Possession of site

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

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area J2 - UNI Entrance B1

Excavation - Rock

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area H - UNI Entrance C2

Possession of site

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

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

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area H - UNI Entrance C2

Excavate Rock

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area I - UNI Entrance C1 + VS + Chiller

Possession of site

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area I - UNI Entrance C1 + VS + Chiller

Sheet Piling for Vent Ducts

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

Bulk Excavation-Soft for Vent Ducts

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area J - UNI Entrance B2

Possession of site / Mobilization

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

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

**Powered Mechanical Equipment (PME) for Different
Construction Tasks during Normal Daytime Working Hours
(Unmitigated Scenario)**

Works Area J - UNI Entrance B2

Concrete Adit

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area J3 - UNI Entrance A

Possession of site

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

Bulk Excavation-Soft for Lower Ground Lobby

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area J3 - UNI Entrance A

Construct Lower Ground Lobby

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area J1 - UNI Vent Shaft VS Y

Possession of site

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area J1 - UNI Vent Shaft VS Y

Concreting of above-ground Vent Shaft

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

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

Possession of site / Mobilization

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

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

Mucking-out / Transporting of spoil

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area E & F - PCWA Barging Point

Possession of site

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

Construction Noise Impact
Assessment –
SYP Station

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area N1 - SYP Entrance A1 & A2

Possession of site

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

Concrete roof slab

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area N1 - SYP Entrance A1 & A2

Install bored piles and H-piles for shaft

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

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area N1 - SYP Entrance A1 & A2

Construct Box Tunnel Adit

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area M1 - SYP Entrance B1 & B2

Demolition of Existing Building

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

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

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No. of Items	SWL/Item dB(A)	On-time %	Noise Mitigation Measure	Noise Barrier Reduction	Total SWL dB(A)	Total SWL dB(A)	Total SWL 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		
Truck	CNP067	1	117	60%					115
Crane	CNP048	1	112	60%			110		
Total							112	113	115

Bulk Excavation-weak Rock

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

Powered Mechanical Equipment (PME)	TM Ref./ other Ref.	No. of Items	SWL/Item dB(A)	On-time %	Noise Mitigation Measure	Noise Barrier Reduction	Total SWL dB(A)	Total SWL dB(A)	Total SWL 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							121	108	109

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area M1 - SYP Entrance B1 & B2

Construct Ground Level Entrance

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area L1 - SYP Entrance B3

Possession of site

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area L1 - SYP Entrance B3

Concrete Soft Ground Tunnel

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area M3 - SYP Entrance C

Possession of site

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area M3 - SYP Entrance C

Excavate Rock Adit (Hard Rock Excavation)

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area M - KGV Construction Shaft

Possession of site

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

Utilities Diversions

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

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (Unmitigated Scenario)

Works Area O1, O2 and O3 - Ground Treatment

Utilities Diversions

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

