

Appendix 4-3B
Calculation of Construction Noise Levels
(Mitigated Scenario with QPMEs and
Movable Noise Barriers)

Appendix 4-3B-2 Plant Inventory and Calculated SWLs of Yau Mei San Tsuen Project (Mitigated with QPMEs and Movable Noise Barriers)

PMEs Inventory - Mitigated (with QPMEs and Noise Barriers)															
Construction Area	Construction Activity	Sub. Work Group	Powered Mechanical Equipment	Reference	SWL per unit	Qty	Total, SWL	Total SWL, dB(A)	At-source Noise Mitigation Measure	Noise Barrier Effect **	Total SWL (Mitigated)	Total SWL, dB(A)	Highest SWL of Each Construction Activity, dB(A)		
Wetland Restoration (Phase A)	(A) Reprofilng of pond and planting work	A1	Earthworks	Air Compressor	CNP001	100	1	100	107	Movable noise barrier	-10	90	101		
				Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88			
				Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	1	105		Movable noise barrier	-5	100			
				Excavator, wheeled/tracked	JCB model 8016 (EPD-01176)	93	3	98		Movable noise barrier	-5	93			
		A2	Ground stabilization	SAKAI model SW250-1 (EPD-00509)	95	3	100	108	Movable noise barrier	-5	95	99			
				Roller, vibratory	Dynapac model LT700 (EPD-00536)	107	1		107	Movable noise barrier	-10		97		
				Power rammer (petrol)											
		(B) Vegetation Clearance	B1	Vegetation Clearance	Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	1	105	106	Movable noise barrier	-5	100	101	
					Excavator, mini-robot mounted	EPD *	94	2	97		Movable noise barrier	-5	92		
					Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88		
Site Formation/preloading (Phase B)	(C) General site clearance	C1	General Site Clearance	Air Compressor	CNP001	100	2	103	119	Movable noise barrier	-10	93	111		
				Breaker, mini-robot mounted	EPD *	115	2	118		Movable noise barrier and Installation of commercially made sound proof hammer bracket ** & #	-10	108			
				Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	2	108				108			
				Excavator, wheeled/tracked	KATO model HD820V (EPD-01233)	99	4	105		Movable noise barrier	-5	100			
				Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88			
				Water Pump, Submersible (electric)	CNP283	85	2	88		Movable noise barrier	-10	78			
		D1	Earthwork	Breaker, mini-robot mounted	EPD *	115	1	115	116	Movable noise barrier and Installation of commercially made sound proof hammer bracket ** & #	-10	105	109		
				Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	1	105				105			
				Excavator, wheeled/tracked	KATO model HD820V (EPD-01233)	99	3	104		Movable noise barrier	-5	99			
				Water Pump, Submersible (electric)	CNP283	85	2	88		Movable noise barrier	-10	78			
D2	General Work	Air Compressor	CNP001	100	1	100	112	Movable noise barrier	-10	90	107				
		Bar Bender and Cutter	CNP021	90	1	90		Movable noise barrier	-10	80					
		Mobile Crane	Hitachi Sumitomo SCX700, 132KW	101	1	101		Movable noise barrier	-5	96					
		Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88					
		Lorry (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	1	105		Fixed Temp. Boundary Noise Barrier		105					
		Power rammer (petrol)	Dynapac model LT700 (EPD-00536)	107	1	107		Movable noise barrier	-10	97					
		Saw, circular, wood	CNP201	108	1	108		Movable noise barrier	-10	98					
		Water Pump, Submersible (electric)	CNP283	85	1	85		Movable noise barrier	-10	75					
		D3	Foundation	Continuous Flight Auger (CFA) piles (piling, earth auger)	CNP167	114		2	117	117		Provision of acoustic shielding	-5	112	112
				Generator, super silenced	CNP103	95		1	95			Movable noise barrier	-10	85	
D4	Concreting	Concrete Lorry Mixer	CNP044	109	1	109	114	Movable noise barrier	-5	104	106				
		Concrete Pump	CNP047	109	2	112		Movable noise barrier	-10	102					
		Poker, vibratory, hand-held (electric)	EPD *	102	1	102		Movable noise barrier	-10	92					
(E) Installation of Vertical Drain	E1	Installation of Vertical Drain	Band Drain Installation Machine	CNP050	105	12	116	116	Movable noise barrier	-10	106	106	106		
(F) Placement of Fill and Surcharge	F1	Placement of Filling and Surcharge	Bulldozer	Komatsy modelled D21A-B	102	3	107	112			107	112			
			Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	3	110				110				
			Excavator, mini-robot mounted	EPD *	94	2	97		Movable noise barrier	-5	92				
			Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88				
			Roller, vibratory	SAKAI model SW250-1 (EPD-00509)	95	3	100				100				
(G) Removal of surcharge	G1	Removal of Surcharge	Bulldozer	Komatsy modelled D21A-B	102	2	105	111			105	111			
			Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	3	110				110				
			Excavator, mini-robot mounted	EPD *	94	2	97		Movable noise barrier	-5	92				
			Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88				

PMEs Inventory - Mitigated (with QPMEs and Noise Barriers)														
Construction Area	Construction Activity	Sub. Work Group	Powered Mechanical Equipment	Reference	SWL per unit	Qty	Total SWL	Total SWL, dB(A)	At-source Noise Mitigation Measure	Noise Barrier Effect **	Total SWL (Mitigated)	Total SWL, dB(A)	Highest SWL of Each Construction Activity, dB(A)	
Site Formation/ preloading (Phase C)	(H) General Site clearance	H1 General Site Clearance	Air Compressor	CNP001	100	2	103	119	Movable noise barrier	-10	93	112	112	
			Breaker, mini-robot mounted	EPD *	115	2	118		Movable noise barrier and Installation of commercially made sound proof hammer bracket # &	-10	108			
			Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	3	110				110			
			Excavator, wheeled/tracked	KATO model HD820V (EPD-01233)	99	4	105		Movable noise barrier	-5	100			
			Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88			
			Water Pump, Submersible (electric)	CNP283	85	2	88		Movable noise barrier	-10	78			
	(I) Retaining Wall construction	I1 Earthwork		Breaker, mini-robot mounted	EPD *	115	1	115	116	Movable noise barrier and Installation of commercially made sound proof hammer bracket # &	-10	105	109	
				Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	1	105				105		
				Excavator, wheeled/tracked	KATO model HD820V (EPD-01233)	99	3	104		Movable noise barrier	-5	99		
				Water Pump, Submersible (electric)	CNP283	85	2	88		Movable noise barrier	-10	78		
		I2 General Work		Air Compressor	CNP001	100	1	100	112	Movable noise barrier	-10	90	107	112
				Bar Bender and Cutter	CNP021	90	1	90		Movable noise barrier	-10	80		
				Mobile Crane	Hitachi Sumitomo SCX700, 132kW	101	1	101		Movable noise barrier	-5	96		
Generator, super silenced				CNP103	95	2	98	Movable noise barrier		-10	88			
Lorry (5.5 tonne < Gross vehicle weight <= 38 tonne)				EPD *	105	1	105				105			
Power rammer (petrol)				Dynapac model LT700 (EPD-00536)	107	1	107	Movable noise barrier		-10	97			
Saw, circular, wood				CNP201	108	1	108	Movable noise barrier		-10	98			
Water Pump, Submersible (electric)		CNP283	85	1	85	Movable noise barrier	-10	75						
I3 Foundation			Continuous Flight Auger (CFA) piles (piling, earth auger)	CNP167	114	2	117	117	Provision of acoustic shielding	-5	112	112		
			Generator, super silenced	CNP103	95	1	95		Movable noise barrier	-10	85			
I4 Concreting			Concrete Lorry Mixer	CNP044	109	1	109	114	Movable noise barrier	-5	104	106		
			Concrete Pump	CNP047	109	2	112		Movable noise barrier	-10	102			
			Poker, vibratory, hand-held (electric)	EPD *		1	102		Movable noise barrier	-10	92			
(J) Installation of Vertical Drain	J1 Installation of Vertical Drain		Band Drain Installation Machine	CNP050	105	12	116	116	Movable noise barrier	-10	106	106	106	
(K) Placement of Filling and surcharge	K1 Placement of Filling and Surcharge		Bulldozer	Komatsy modelled D21A-B	102	3	107	112			107	112	112	
			Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	3	110				110			
			Excavator, mini-robot mounted	EPD *	94	2	97		Movable noise barrier	-5	92			
			Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88			
			Roller, vibratory	SAKAI model SW250-1 (EPD-00509)	95	3	100				100			
(L) Removal of surcharge	L1 Removal of Surcharge		Bulldozer	Komatsy modelled D21A-B	102	2	105	111			105	111	111	
			Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	3	110				110			
			Excavator, mini-robot mounted	EPD *	94	2	97		Movable noise barrier	-5	92			
			Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88			
Site Formation/ preloading (Phase D)	(M) General site clearance	M1 General Site Clearance	Air Compressor	CNP001	100	2	103	119	Movable noise barrier	-10	93	112	112	
			Breaker, mini-robot mounted	EPD *	115	2	118		Movable noise barrier and Installation of commercially made sound proof hammer bracket # &	-10	108			
			Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	3	110				110			
			Excavator, wheeled/tracked	KATO model HD820V (EPD-01233)	99	3	104		Movable noise barrier	-5	99			
			Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88			
			Water Pump, Submersible (electric)	CNP283	85	2	88		Movable noise barrier	-10	78			
	(N) Retaining wall construction	N1 Earthwork		Breaker, mini-robot mounted	EPD *	115	1	115	116	Movable noise barrier and Installation of commercially made sound proof hammer bracket # &	-10	105	109	
				Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	1	105				105		
				Excavator, wheeled/tracked	KATO model HD820V (EPD-01233)	99	3	104		Movable noise barrier	-5	99		

PMEs Inventory - Mitigated (with QPMEs and Noise Barriers)																	
Construction Area	Construction Activity	Sub. Work Group	Powered Mechanical Equipment	Reference	SWL per unit	Qty	Total SWL	Total SWL, dB(A)	At-source Noise Mitigation Measure	Noise Barrier Effect **	Total SWL (Mitigated)	Total SWL, dB(A)	Highest SWL of Each Construction Activity, dB(A)				
		N2	Water Pump, Submersible (electric)	CNP283	85	2	88		Movable noise barrier	-10	78	107	112				
			Air Compressor	CNP001	100	1	100	112	Movable noise barrier	-10	90						
			Bar Bender and Cutter	CNP021	90	1	90		Movable noise barrier	-10	80						
			Mobile Crane	Hitachi Sumitomo SCX700, 132kW	101	1	101		Movable noise barrier	-5	96						
			Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88						
			Lorry (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	1	105				105						
			Power rammer (petrol)	Dynapac model LT700 (EPD-00536)	107	1	107		Movable noise barrier	-10	97						
			Saw, circular, wood	CNP201	108	1	108		Movable noise barrier	-10	98						
			Water Pump, Submersible (electric)	CNP283	85	1	85		Movable noise barrier	-10	75						
			N3	Foundation	Continuous Flight Auger (CFA) piles (piling, earth auger)	CNP167	114		2	117	117			Provision of acoustic shielding	-5	112	112
					Generator, super silenced	CNP103	95		1	95				Movable noise barrier	-10	85	
			N4	Concreting	Concrete Lorry Mixer	CNP044	109		1	109	114			Movable noise barrier	-5	104	106
					Concrete Pump	CNP047	109		2	112				Movable noise barrier	-10	102	
					Poker, vibratory, hand-held (electric)	EPD *			1	102				Movable noise barrier	-10	92	
					102												
	(O) Installation of vertical drain	O1	Installation of Vertical Drain	Band Drain Installation Machine	CNP050	105	12	116	116	Movable noise barrier	-10	106	106	106			
	(P) Placement of filling and surcharge	P1	Placement of Filling and Surcharge	Bulldozer	Komatsy modelled D21A-B	102	3	107	112				107	112			
				Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	3	110				110					
				Excavator, mini-robot mounted	EPD *	94	2	97		Movable noise barrier	-5	92					
				Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88					
Roller, vibratory				SAKAI model SW250-1 (EPD-00509)	95	3	100				100						
(Q) Removal of surcharge	Q1	Removal of Surcharge	Bulldozer	Komatsy modelled D21A-B	102	2	105	111				105	111				
			Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	3	110				110						
			Excavator, mini-robot mounted	EPD *	94	2	97		Movable noise barrier	-5	92						
			Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88						
Phase B, C and D	(R) Foundation	R1	General foundation construction	Air Compressor	CNP001	100	8	109	118	Movable noise barrier	-10	99	114				
				Bar bender and cutter (electric)	CNP021	90	6	98		Movable noise barrier	-10	88					
				Mobile Crane	Hitachi Sumitomo SCX700, 132kW	101	4	107		Movable noise barrier	-5	102					
				Generator, super silenced	CNP103	95	8	104		Movable noise barrier	-10	94					
				Lorry (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	5	112				112					
				Drill/grinder, hand-held (electric)	CNP065	98	10	108		Movable noise barrier	-10	98					
				Excavator, wheeled/tracked	KATO model HD820V (EPD-01233)	99	4	105		Movable noise barrier	-5	100					
				Saw, circular, wood	CNP201	108	4	114		Movable noise barrier	-10	104					
				Water pump, submersible (electric)	CNP283	85	5	92		Movable noise barrier	-10	82					
		R2	Piling works	Generator, super silenced	CNP103	95	8	104	120	Movable noise barrier	-10	94	115				
				Continuous Flight Auger (CFA) piles (piling, earth auger)	CNP167	114	4	120		Provision of acoustic shielding	-5	115					
		R3	Concreting Works	Concrete Lorry Mixer	CNP044	109	6	117	118	Movable noise barrier	-5	112	112				
				Generator, super silenced	CNP103	95	8	104		Movable noise barrier	-10	94					
				Poker, vibratory, hand-held (electric)	EPD *		8	111		Movable noise barrier	-10	101					
								102				0					
		Phase B, C and D	(S) Superstructure	S1	General construction works	Air Compressor	CNP001	100	7	108	118	Movable noise barrier	-10	98	109		
Bar bender and cutter (electric)	CNP021					90	9	100	Movable noise barrier	-10		90					
Mobile Crane	Hitachi Sumitomo SCX700, 132kW					101	3	106	Movable noise barrier	-5		101					
Drill/grinder, hand-held (electric)	CNP065					98	10	108	Movable noise barrier	-10		98					
Generator, super silenced	CNP103					95	7	103	Movable noise barrier	-10		93					
Saw, circular, wood	CNP201					108	8	117	Movable noise barrier	-10		107					
S2	Concreting works			Concrete Lorry Mixer	CNP044	109	5	116	118	Movable noise barrier	-5	111	112				
				Concrete Pump	CNP047	109	2	112		Movable noise barrier	-10	102					
				Generator, super silenced	CNP103	95	8	104		Movable noise barrier	-10	94					
				Poker, vibratory, hand-held (electric)	EPD *	102	7	110		Movable noise barrier	-10	100					

PMEs Inventory - Mitigated (with QPMEs and Noise Barriers)																
Construction Area	Construction Activity	Sub. Work Group	Powered Mechanical Equipment	Reference	SWL per unit	Qty	Total SWL	Total SWL, dB(A)	At-source Noise Mitigation Measure	Noise Barrier Effect **	Total SWL (Mitigated)	Total SWL, dB(A)	Highest SWL of Each Construction Activity, dB(A) ^e			
Phase B, C and D	(T) Construction of Underground Utilities	T1 Earthwork	Breaker, hand-held, mass >=20kg and <= 35kg	CNP025	111	1	111	113	Movable noise barrier	-10	101	109	109			
			Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	2	108			108						
			Excavator, wheeled/tracked	JCB model 8016 (EPD-01176)	93	2	96		Movable noise barrier	-5	91					
		T2 Utilities laying	Air Compressor	CNP001	100	2	103	110	Movable noise barrier	-10	93	108				
			Generator, super silenced	CNP103	95	2	98		Movable noise barrier	-10	88					
			Lorry (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	2	108			108						
			Water Pump, Submersible (electric)	CNP283	85	10	95		Movable noise barrier	-10	85					
		T3 Ground reinstatement	Concrete Lorry Mixer	CNP044	109	2	112	115	Movable noise barrier	-5	107	108				
			Dynapac model LT700 (EPD-00536)		107	2	110		Movable noise barrier	-10	100					
			Poker, vibratory, hand-held (electric)	EPD *	102	2	105		Movable noise barrier	-10	95					
			Roller, vibratory	SAKAI model SW250-1 (EPD-00509)	95	2	98			98						
		Phase B, C and D	(U) Roadworks Construction	U1 Earthwork	Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	2	108	109				108	110	
					Excavator, wheeled/tracked	KATO model HD820V (EPD-01233)	99	2	102		Movable noise barrier	-5		97		
U2 Concreting Works	Concrete Lorry Mixer			CNP044	109	2	112	113	Movable noise barrier	-5	107	107				
	Generator, super silenced			CNP103	95	2	98		Movable noise barrier	-10	88					
	Poker, vibratory, hand-held (electric)			EPD *	102	2	105		Movable noise barrier	-10	95					
U3 Road Finishing	Air Compressor			CNP001	100	2	103	112	Movable noise barrier	-10	93	110				
	Asphalt Paver			VOLVO model. No. ABG5770 (EPD-01226)	104	2	107			107						
	Generator, super silenced			CNP103	95	2	98		Movable noise barrier	-10	88					
	Lorry (5.5 tonne < Gross vehicle weight <= 38 tonne)			EPD *	105	1	105			105						
	Power rammer (petrol)			Dynapac model LT700 (EPD-00536)	107	1	107		Movable noise barrier	-10	97					
Road roller	HITACHI model CP220-3 (EPD-01183)			97	1	97		97								
-	(V) Dump Trucks Travelling on Haul Road During Site Formation			V1 Dump Trucks Travelling on Haul Road per hour	Dump Truck (5.5 tonne < Gross vehicle weight <= 38 tonne)	EPD *	105	10	115	115			115	115		115

Note: Noise levels of the above construction plants are based on the "Technical Memorandum on Noise From Construction Work Other Than Percussive Piling" and EPD's QPMEs database (available at: <http://www.epd.gov.hk/cgi-bin/ngp/qpme/index.pl?lang=eng>)

* EPD website: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

** According to EIAO Guidance Note No. 9/2010, with provision of noise barriers, a 5dB(A) noise reduction for movable plant, 10 dB(A) for stationary plant and 15 dB(A) for enclosed ones can be assumed.

According to "A Practical Guide for the Reduction of Noise from Construction Works" (page 11), published by HKSAR Gov. Environmental Protection Department, July 1989, excavated-mounted breaker with sound proof hammer bracket installed could achieve a noise reduction up to 10dB(A).

According to the "Best Practice Guide for Environmental Protection on Construction Sites", page 6-9, published by Hong Kong Construction Association, January 2009, excavator-mounted breaker with sound proof hammer bracket can achieve a noise reduction of up to 10dB(A). (Doc. Available at: <http://www.hkca.com.hk/front/20090306bpg.pdf>)

@ The highest SWL calculated for each Construction Activity for construction noise impact assessment. Each Construction Activity has been divided into several sub. work groups based on the sequence of construction works. The respective sub-work groups of each Construction Activity will not overlap with one another.

Appendix 4-3B-3 Calculation of Construction Noise Level (Mitigated Scenario with QPMEs, Movable Noise Barriers)

NSR		Construction Activity	Total SWL, dB(A)	Dist. (NSR to Site Boundary) (A), m	Dist. (Site Boundary to Notional Source) (B), m	Horz. Distance (= A+B), m	Dist. Corr., dB(A)	Façade Corr., dB(A)	CNL, dB(A)
N1	Phase A	(A) Reprofitting of pond and planting work	101	39	29	68	-44.6	3.0	59
		(B) Vegetation Clearance	101	39	29	68	-44.6	3.0	59
		(C) General site clearance	111	285	25	310	-57.8	3.0	56
	Phase B	(D) Retaining wall construction	112	285	25	310	-57.8	3.0	57
		(E) Installation of Vertical Drain	106	285	25	310	-57.8	3.0	51
		(F) Placement of Fill and Surcharge	112	285	25	310	-57.8	3.0	57
	Phase C	(G) Removal of surcharge	111	285	25	310	-57.8	3.0	56
		(H) General Site clearance	112	93	50	143	-51.1	3.0	64
		(I) Retaining Wall construction	112	93	50	143	-51.1	3.0	64
	Phase D	(J) Installation of Vertical Drain	106	93	50	143	-51.1	3.0	58
		(K) Placement of Filling and surcharge	112	93	50	143	-51.1	3.0	64
		(L) Removal of surcharge	111	93	50	143	-51.1	3.0	63
	Phase D to D	(M) General site clearance	112	178	18	196	-53.8	3.0	61
		(N) Retaining wall construction	112	178	18	196	-53.8	3.0	61
		(O) Installation of vertical drain	106	178	18	196	-53.8	3.0	55
		(P) Placement of filling and surcharge	112	178	18	196	-53.8	3.0	61
		(Q) Removal of surcharge	111	178	18	196	-53.8	3.0	60
		(R) Foundation	115	179	36	215	-54.6	3.0	63
(S) Superstructure		112	179	36	215	-54.6	3.0	60	
(T) Construction of Underground Utilities		109	179	36	215	-54.6	3.0	57	
(U) Roadworks Construction		110	179	36	215	-54.6	3.0	58	
N1b		Phase A	(A) Reprofitting of pond and planting work	101	34	27	61	-43.7	3.0
	(B) Vegetation Clearance		101	34	27	61	-43.7	3.0	60
	(C) General site clearance		111	249	26	275	-56.8	3.0	57
	Phase B	(D) Retaining wall construction	112	249	26	275	-56.8	3.0	58
		(E) Installation of Vertical Drain	106	249	26	275	-56.8	3.0	52
		(F) Placement of Fill and Surcharge	112	249	26	275	-56.8	3.0	58
	Phase C	(G) Removal of surcharge	111	249	26	275	-56.8	3.0	57
		(H) General Site clearance	112	78	41	119	-49.5	3.0	66
		(I) Retaining Wall construction	112	78	41	119	-49.5	3.0	66
	Phase D	(J) Installation of Vertical Drain	106	78	41	119	-49.5	3.0	60
		(K) Placement of Filling and surcharge	112	78	41	119	-49.5	3.0	66
		(L) Removal of surcharge	111	78	41	119	-49.5	3.0	65
	Phase D to D	(M) General site clearance	112	144	18	162	-52.2	3.0	63
		(N) Retaining wall construction	112	144	18	162	-52.2	3.0	63
		(O) Installation of vertical drain	106	144	18	162	-52.2	3.0	57
		(P) Placement of filling and surcharge	112	144	18	162	-52.2	3.0	63
		(Q) Removal of surcharge	111	144	18	162	-52.2	3.0	62
		(R) Foundation	115	143	36	179	-53.0	3.0	65
(S) Superstructure		112	143	36	179	-53.0	3.0	62	
(T) Construction of Underground Utilities		109	143	36	179	-53.0	3.0	59	
(U) Roadworks Construction		110	143	36	179	-53.0	3.0	60	
N1c		Phase A	(A) Reprofitting of pond and planting work	101	33	29	62	-43.8	3.0
	(B) Vegetation Clearance		101	33	29	62	-43.8	3.0	60
	(C) General site clearance		111	227	26	253	-56.0	3.0	58
	Phase B	(D) Retaining wall construction	112	227	26	253	-56.0	3.0	59
		(E) Installation of Vertical Drain	106	227	26	253	-56.0	3.0	53
		(F) Placement of Fill and Surcharge	112	227	26	253	-56.0	3.0	59
	Phase C	(G) Removal of surcharge	111	227	26	253	-56.0	3.0	58
		(H) General Site clearance	112	68	36	104	-48.3	3.0	67
		(I) Retaining Wall construction	112	68	36	104	-48.3	3.0	67
	Phase D	(J) Installation of Vertical Drain	106	68	36	104	-48.3	3.0	61
		(K) Placement of Filling and surcharge	112	68	36	104	-48.3	3.0	67
		(L) Removal of surcharge	111	68	36	104	-48.3	3.0	66
	Phase D to D	(M) General site clearance	112	122	18	140	-50.9	3.0	64
		(N) Retaining wall construction	112	122	18	140	-50.9	3.0	64
		(O) Installation of vertical drain	106	122	18	140	-50.9	3.0	58
		(P) Placement of filling and surcharge	112	122	18	140	-50.9	3.0	64
		(Q) Removal of surcharge	111	122	18	140	-50.9	3.0	63
		(R) Foundation	115	122	36	158	-52.0	3.0	66
(S) Superstructure		112	122	36	158	-52.0	3.0	63	
(T) Construction of Underground Utilities		109	122	36	158	-52.0	3.0	60	
(U) Roadworks Construction		110	122	36	158	-52.0	3.0	61	
N2a		Phase A	(A) Reprofitting of pond and planting work	101	37	33	70	-44.9	3.0
	(B) Vegetation Clearance		101	37	33	70	-44.9	3.0	59
	(C) General site clearance		111	200	26	226	-55.1	3.0	59
	Phase B	(D) Retaining wall construction	112	200	26	226	-55.1	3.0	60
		(E) Installation of Vertical Drain	106	200	26	226	-55.1	3.0	54
		(F) Placement of Fill and Surcharge	112	200	26	226	-55.1	3.0	60
	Phase C	(G) Removal of surcharge	111	200	26	226	-55.1	3.0	59
		(H) General Site clearance	112	55	32	87	-46.8	3.0	68
		(I) Retaining Wall construction	112	55	32	87	-46.8	3.0	68
	Phase D	(J) Installation of Vertical Drain	106	55	32	87	-46.8	3.0	62
		(K) Placement of Filling and surcharge	112	55	32	87	-46.8	3.0	68
		(L) Removal of surcharge	111	55	32	87	-46.8	3.0	67
	Phase D to D	(M) General site clearance	112	97	17	114	-49.1	3.0	66
		(N) Retaining wall construction	112	97	17	114	-49.1	3.0	66
		(O) Installation of vertical drain	106	97	17	114	-49.1	3.0	60
		(P) Placement of filling and surcharge	112	97	17	114	-49.1	3.0	66
		(Q) Removal of surcharge	111	97	17	114	-49.1	3.0	65
		(R) Foundation	115	95	36	131	-50.3	3.0	68
(S) Superstructure		112	95	36	131	-50.3	3.0	65	
(T) Construction of Underground Utilities		109	95	36	131	-50.3	3.0	62	
(U) Roadworks Construction		110	95	36	131	-50.3	3.0	63	
N3		Phase A	(A) Reprofitting of pond and planting work	101	79	31	110	-48.8	3.0
	(B) Vegetation Clearance		101	79	31	110	-48.8	3.0	55
	(C) General site clearance		111	135	26	161	-52.1	3.0	62
	Phase B	(D) Retaining wall construction	112	135	26	161	-52.1	3.0	63
		(E) Installation of Vertical Drain	106	135	26	161	-52.1	3.0	57
		(F) Placement of Fill and Surcharge	112	135	26	161	-52.1	3.0	63
	Phase C	(G) Removal of surcharge	111	135	26	161	-52.1	3.0	62
		(H) General Site clearance	112	26	22	48	-41.6	3.0	73
		(I) Retaining Wall construction	112	26	22	48	-41.6	3.0	73
	Phase D	(J) Installation of Vertical Drain	106	26	22	48	-41.6	3.0	67
		(K) Placement of Filling and surcharge	112	26	22	48	-41.6	3.0	73
		(L) Removal of surcharge	111	26	22	48	-41.6	3.0	72
	Phase D	(M) General site clearance	112	36	20	56	-42.9	3.0	72
		(N) Retaining wall construction	112	36	20	56	-42.9	3.0	72
		(O) Installation of vertical drain	106	36	20	56	-42.9	3.0	66

NSR		Construction Activity	Total SWL, dB(A)	Dist. (NSR to Site Boundary) (A), m	Dist. (Site Boundary to Notional Source) (B), m ^{~a#}	Horz. Distance (= A+B), m	Dist. Corr., dB(A)	Façade Corr., dB(A)	CNL, dB(A)
	P	(P) Placement of filling and surcharge	112	36	20	56	-42.9	3.0	72
	Q	(Q) Removal of surcharge	111	36	20	56	-42.9	3.0	71
	R	(R) Foundation	115	33	35	68	-44.6	3.0	73
	S	(S) Superstructure	112	33	35	68	-44.6	3.0	70
	T	(T) Construction of Underground Utilities	109	33	35	68	-44.6	3.0	67
	U	(U) Roadworks Construction	110	33	35	68	-44.6	3.0	68
N4	A	(A) Reprofiting of pond and planting work	101	101	31	132	-50.4	3.0	54
	B	(B) Vegetation Clearance	101	101	31	132	-50.4	3.0	54
	C	(C) General site clearance	111	209	29	238	-55.5	3.0	59
	D	(D) Retaining wall construction	112	209	29	238	-55.5	3.0	60
	E	(E) Installation of Vertical Drain	106	209	29	238	-55.5	3.0	54
	F	(F) Placement of Fill and Surcharge	112	209	29	238	-55.5	3.0	60
	G	(G) Removal of surcharge	111	209	29	238	-55.5	3.0	59
	H	(H) General Site clearance	112	115	23	138	-50.8	3.0	64
	I	(I) Retaining Wall construction	112	115	23	138	-50.8	3.0	64
	J	(J) Installation of Vertical Drain	106	115	23	138	-50.8	3.0	58
	K	(K) Placement of Filling and surcharge	112	115	23	138	-50.8	3.0	64
	L	(L) Removal of surcharge	111	115	23	138	-50.8	3.0	63
	M	(M) General site clearance	112	83	19	102	-48.2	3.0	67
	N	(N) Retaining wall construction	112	83	19	102	-48.2	3.0	67
	O	(O) Installation of vertical drain	106	83	19	102	-48.2	3.0	61
	P	(P) Placement of filling and surcharge	112	83	19	102	-48.2	3.0	67
	Q	(Q) Removal of surcharge	111	83	19	102	-48.2	3.0	66
	R	(R) Foundation	115	85	40	125	-49.9	3.0	68
	S	(S) Superstructure	112	85	40	125	-49.9	3.0	65
	T	(T) Construction of Underground Utilities	109	85	40	125	-49.9	3.0	62
U	(U) Roadworks Construction	110	85	40	125	-49.9	3.0	63	
N4a	A	(A) Reprofiting of pond and planting work	101	91	32	123	-49.8	3.0	54
	B	(B) Vegetation Clearance	101	91	32	123	-49.8	3.0	54
	C	(C) General site clearance	111	194	29	223	-54.9	3.0	59
	D	(D) Retaining wall construction	112	194	29	223	-54.9	3.0	60
	E	(E) Installation of Vertical Drain	106	194	29	223	-54.9	3.0	54
	F	(F) Placement of Fill and Surcharge	112	194	29	223	-54.9	3.0	60
	G	(G) Removal of surcharge	111	194	29	223	-54.9	3.0	59
	H	(H) General Site clearance	112	97	23	120	-49.6	3.0	65
	I	(I) Retaining Wall construction	112	97	23	120	-49.6	3.0	65
	J	(J) Installation of Vertical Drain	106	97	23	120	-49.6	3.0	59
	K	(K) Placement of Filling and surcharge	112	97	23	120	-49.6	3.0	65
	L	(L) Removal of surcharge	111	97	23	120	-49.6	3.0	64
	M	(M) General site clearance	112	71	19	90	-47.1	3.0	68
	N	(N) Retaining wall construction	112	71	19	90	-47.1	3.0	68
	O	(O) Installation of vertical drain	106	71	19	90	-47.1	3.0	62
	P	(P) Placement of filling and surcharge	112	71	19	90	-47.1	3.0	68
	Q	(Q) Removal of surcharge	111	71	19	90	-47.1	3.0	67
	R	(R) Foundation	115	74	38	112	-49.0	3.0	69
	S	(S) Superstructure	112	74	38	112	-49.0	3.0	66
	T	(T) Construction of Underground Utilities	109	74	38	112	-49.0	3.0	63
U	(U) Roadworks Construction	110	74	38	112	-49.0	3.0	64	
N4c	A	(A) Reprofiting of pond and planting work	101	101	35	136	-50.7	3.0	53
	B	(B) Vegetation Clearance	101	101	35	136	-50.7	3.0	53
	C	(C) General site clearance	111	141	29	170	-52.6	3.0	61
	D	(D) Retaining wall construction	112	141	29	170	-52.6	3.0	62
	E	(E) Installation of Vertical Drain	106	141	29	170	-52.6	3.0	56
	F	(F) Placement of Fill and Surcharge	112	141	29	170	-52.6	3.0	62
	G	(G) Removal of surcharge	111	141	29	170	-52.6	3.0	61
	H	(H) General Site clearance	112	66	22	88	-46.9	3.0	68
	I	(I) Retaining Wall construction	112	66	22	88	-46.9	3.0	68
	J	(J) Installation of Vertical Drain	106	66	22	88	-46.9	3.0	62
	K	(K) Placement of Filling and surcharge	112	66	22	88	-46.9	3.0	68
	L	(L) Removal of surcharge	111	66	22	88	-46.9	3.0	67
	M	(M) General site clearance	112	22	18	40	-40.0	3.0	75
	N	(N) Retaining wall construction	112	22	18	40	-40.0	3.0	75
	O	(O) Installation of vertical drain	106	22	18	40	-40.0	3.0	69
	P	(P) Placement of filling and surcharge	112	22	18	40	-40.0	3.0	75
	Q	(Q) Removal of surcharge	111	22	18	40	-40.0	3.0	74
	R	(R) Foundation	115	24	37	61	-43.7	3.0	74
	S	(S) Superstructure	112	24	37	61	-43.7	3.0	71
	T	(T) Construction of Underground Utilities	109	24	37	61	-43.7	3.0	68
U	(U) Roadworks Construction	110	24	37	61	-43.7	3.0	69	
N5	A	(A) Reprofiting of pond and planting work	101	4	12	16	-32.1	3.0	72
	B	(B) Vegetation Clearance	101	4	12	16	-32.1	3.0	72
	C	(C) General site clearance	111	34	39	73	-45.2	3.0	69
	D	(D) Retaining wall construction	112	34	39	73	-45.2	3.0	70
	E	(E) Installation of Vertical Drain	106	34	39	73	-45.2	3.0	64
	F	(F) Placement of Fill and Surcharge	112	34	39	73	-45.2	3.0	70
	G	(G) Removal of surcharge	111	34	39	73	-45.2	3.0	69
	H	(H) General Site clearance	112	138	50	188	-53.5	3.0	62
	I	(I) Retaining Wall construction	112	138	50	188	-53.5	3.0	62
	J	(J) Installation of Vertical Drain	106	138	50	188	-53.5	3.0	56
	K	(K) Placement of Filling and surcharge	112	138	50	188	-53.5	3.0	62
	L	(L) Removal of surcharge	111	138	50	188	-53.5	3.0	61
	M	(M) General site clearance	112	149	24	173	-52.7	3.0	62
	N	(N) Retaining wall construction	112	149	24	173	-52.7	3.0	62
	O	(O) Installation of vertical drain	106	149	24	173	-52.7	3.0	56
	P	(P) Placement of filling and surcharge	112	149	24	173	-52.7	3.0	62
	Q	(Q) Removal of surcharge	111	149	24	173	-52.7	3.0	61
	R	(R) Foundation	115	32	50	82	-46.3	3.0	72
	S	(S) Superstructure	112	32	50	82	-46.3	3.0	69
	T	(T) Construction of Underground Utilities	109	32	50	82	-46.3	3.0	66
U	(U) Roadworks Construction	110	32	50	82	-46.3	3.0	67	
N6	A	(A) Reprofiting of pond and planting work	101	23	38	61	-43.7	3.0	60
	B	(B) Vegetation Clearance	101	23	38	61	-43.7	3.0	60
	C	(C) General site clearance	111	268	28	296	-57.4	3.0	57
	D	(D) Retaining wall construction	112	268	28	296	-57.4	3.0	58
	E	(E) Installation of Vertical Drain	106	268	28	296	-57.4	3.0	52
	F	(F) Placement of Fill and Surcharge	112	268	28	296	-57.4	3.0	58
	G	(G) Removal of surcharge	111	268	28	296	-57.4	3.0	57
	H	(H) General Site clearance	112	150	28	178	-53.0	3.0	62
	I	(I) Retaining Wall construction	112	150	28	178	-53.0	3.0	62
	J	(J) Installation of Vertical Drain	106	150	28	178	-53.0	3.0	56

NSR	Construction Activity		Total SWL, dB(A)	Dist. (NSR to Site Boundary) (A), m	Dist. (Site Boundary to Notional Source) (B), m	Horz. Distance (= A+B), m	Dist. Corr., dB(A)	Façade Corr., dB(A)	CNL, dB(A)	
	K		(K) Placement of Filling and surcharge	112	150	28	178	-53.0	3.0	62
	L		(L) Removal of surcharge	111	150	28	178	-53.0	3.0	61
	M		(M) General site clearance	112	258	30	288	-57.2	3.0	58
	N	Phase D	(N) Retaining wall construction	112	258	30	288	-57.2	3.0	58
	O		(O) Installation of vertical drain	106	258	30	288	-57.2	3.0	52
	P		(P) Placement of filling and surcharge	112	258	30	288	-57.2	3.0	58
	Q		(Q) Removal of surcharge	111	258	30	288	-57.2	3.0	57
	R		(R) Foundation	115	153	50	203	-54.1	3.0	64
	S	Phase B to D	(S) Superstructure	112	153	50	203	-54.1	3.0	61
	T		(T) Construction of Underground Utilities	109	153	50	203	-54.1	3.0	58
U	(U) Roadworks Construction		110	153	50	203	-54.1	3.0	59	
N7	A	Phase A	(A) Reprofiting of pond and planting work	101	66	11	77	-45.7	3.0	58
	B		(B) Vegetation Clearance	101	66	11	77	-45.7	3.0	58
	C		(C) General site clearance	112	96	33	129	-50.2	3.0	64
	D	Phase B	(D) Retaining wall construction	112	96	33	129	-50.2	3.0	65
	E		(E) Installation of Vertical Drain	106	96	33	129	-50.2	3.0	59
	F		(F) Placement of Fill and Surcharge	112	96	33	129	-50.2	3.0	65
	G		(G) Removal of surcharge	111	96	33	129	-50.2	3.0	64
	H		(H) General Site clearance	112	137	27	164	-52.3	3.0	63
	I	Phase C	(I) Retaining Wall construction	112	137	27	164	-52.3	3.0	63
	J		(J) Installation of Vertical Drain	106	137	27	164	-52.3	3.0	57
	K		(K) Placement of Filling and surcharge	112	137	27	164	-52.3	3.0	63
	L		(L) Removal of surcharge	111	137	27	164	-52.3	3.0	62
	M	Phase D	(M) General site clearance	112	205	33	238	-55.5	3.0	60
	N		(N) Retaining wall construction	112	205	33	238	-55.5	3.0	60
	O		(O) Installation of vertical drain	106	205	33	238	-55.5	3.0	54
	P		(P) Placement of filling and surcharge	112	205	33	238	-55.5	3.0	60
	Q		(Q) Removal of surcharge	111	205	33	238	-55.5	3.0	59
	R	Phase B to D	(R) Foundation	115	103	50	153	-51.7	3.0	66
	S		(S) Superstructure	112	103	50	153	-51.7	3.0	63
T	(T) Construction of Underground Utilities		109	103	50	153	-51.7	3.0	60	
U	(U) Roadworks Construction		110	103	50	153	-51.7	3.0	61	
N9	A	Phase A	(A) Reprofiting of pond and planting work	101	340	28	368	-59.3	3.0	45
	B		(B) Vegetation Clearance	101	340	28	368	-59.3	3.0	45
	C		(C) General site clearance	111	389	25	414	-60.3	3.0	54
	D	Phase B	(D) Retaining wall construction	112	389	25	414	-60.3	3.0	55
	E		(E) Installation of Vertical Drain	106	389	25	414	-60.3	3.0	49
	F		(F) Placement of Fill and Surcharge	112	389	25	414	-60.3	3.0	55
	G		(G) Removal of surcharge	111	389	25	414	-60.3	3.0	54
	H		(H) General Site clearance	112	345	22	367	-59.3	3.0	56
	I	Phase C	(I) Retaining Wall construction	112	345	22	367	-59.3	3.0	56
	J		(J) Installation of Vertical Drain	106	345	22	367	-59.3	3.0	50
	K		(K) Placement of Filling and surcharge	112	345	22	367	-59.3	3.0	56
	L		(L) Removal of surcharge	111	345	22	367	-59.3	3.0	55
	M	Phase D	(M) General site clearance	112	219	39	258	-56.2	3.0	59
	N		(N) Retaining wall construction	112	219	39	258	-56.2	3.0	59
	O		(O) Installation of vertical drain	106	219	39	258	-56.2	3.0	53
	P		(P) Placement of filling and surcharge	112	219	39	258	-56.2	3.0	59
	Q		(Q) Removal of surcharge	111	219	39	258	-56.2	3.0	58
	R	Phase B to D	(R) Foundation	115	227	50	277	-56.8	3.0	61
	S		(S) Superstructure	112	227	50	277	-56.8	3.0	58
T	(T) Construction of Underground Utilities		109	227	50	277	-56.8	3.0	55	
U	(U) Roadworks Construction		110	227	50	277	-56.8	3.0	56	
N8	A	Phase A	(A) Reprofiting of pond and planting work	101	136	12	148	-51.4	3.0	53
	B		(B) Vegetation Clearance	101	136	12	148	-51.4	3.0	53
	C		(C) General site clearance	111	166	33	199	-54.0	3.0	60
	D	Phase B	(D) Retaining wall construction	112	166	33	199	-54.0	3.0	61
	E		(E) Installation of Vertical Drain	106	166	33	199	-54.0	3.0	55
	F		(F) Placement of Fill and Surcharge	112	166	33	199	-54.0	3.0	61
	G		(G) Removal of surcharge	111	166	33	199	-54.0	3.0	60
	H		(H) General Site clearance	112	172	35	207	-54.3	3.0	61
	I	Phase C	(I) Retaining Wall construction	112	172	35	207	-54.3	3.0	61
	J		(J) Installation of Vertical Drain	106	172	35	207	-54.3	3.0	55
	K		(K) Placement of Filling and surcharge	112	172	35	207	-54.3	3.0	61
	L		(L) Removal of surcharge	111	172	35	207	-54.3	3.0	60
	M	Phase D	(M) General site clearance	112	269	32	301	-57.6	3.0	57
	N		(N) Retaining wall construction	112	269	32	301	-57.6	3.0	57
	O		(O) Installation of vertical drain	106	269	32	301	-57.6	3.0	51
	P		(P) Placement of filling and surcharge	112	269	32	301	-57.6	3.0	57
	Q		(Q) Removal of surcharge	111	269	32	301	-57.6	3.0	56
	R	Phase B to D	(R) Foundation	115	176	50	226	-55.1	3.0	63
	S		(S) Superstructure	112	176	50	226	-55.1	3.0	60
T	(T) Construction of Underground Utilities		109	176	50	226	-55.1	3.0	57	
U	(U) Roadworks Construction		110	176	50	226	-55.1	3.0	58	
N10	A	Phase A	(A) Reprofiting of pond and planting work	101	24	37	61	-43.7	3.0	60
	B		(B) Vegetation Clearance	101	24	37	61	-43.7	3.0	60
	C		(C) General site clearance	111	331	25	356	-59.0	3.0	55
	D	Phase B	(D) Retaining wall construction	112	331	25	356	-59.0	3.0	56
	E		(E) Installation of Vertical Drain	106	331	25	356	-59.0	3.0	50
	F		(F) Placement of Fill and Surcharge	112	331	25	356	-59.0	3.0	56
	G		(G) Removal of surcharge	111	331	25	356	-59.0	3.0	55
	H		(H) General Site clearance	112	137	48	185	-53.3	3.0	62
	I	Phase C	(I) Retaining Wall construction	112	137	48	185	-53.3	3.0	62
	J		(J) Installation of Vertical Drain	106	137	48	185	-53.3	3.0	56
	K		(K) Placement of Filling and surcharge	112	137	48	185	-53.3	3.0	62
	L		(L) Removal of surcharge	111	137	48	185	-53.3	3.0	61
	M	Phase D	(M) General site clearance	112	276	21	297	-57.4	3.0	58
	N		(N) Retaining wall construction	112	276	21	297	-57.4	3.0	58
	O		(O) Installation of vertical drain	106	276	21	297	-57.4	3.0	52
	P		(P) Placement of filling and surcharge	112	276	21	297	-57.4	3.0	58
	Q		(Q) Removal of surcharge	111	276	21	297	-57.4	3.0	57
	R	Phase B to D	(R) Foundation	115	262	38	300	-57.5	3.0	61
	S		(S) Superstructure	112	262	38	300	-57.5	3.0	58
T	(T) Construction of Underground Utilities		109	262	38	300	-57.5	3.0	55	
U	(U) Roadworks Construction		110	262	38	300	-57.5	3.0	56	
N_sch	A	Phase A	(A) Reprofiting of pond and planting work	101	340	30	370	-59.3	3.0	45
	B		(B) Vegetation Clearance	101	340	30	370	-59.3	3.0	45
	C		(C) General site clearance	111	631	25	656	-64.3	3.0	50
	D	Phase B	(D) Retaining wall construction	112	631	25	656	-64.3	3.0	51
	E		(E) Installation of Vertical Drain	106	631	25	656	-64.3	3.0	45

NSR		Construction Activity	Total SWL, dB(A)	Dist. (NSR to Site Boundary) (A), m	Dist. (Site Boundary to Notional Source) (B), m ² = A ² + B ²	Horz. Distance (= A+B), m	Dist. Corr., dB(A)	Façade Corr., dB(A)	CNL, dB(A)
NSR	F	(F) Placement of Fill and Surcharge	112	631	25	656	-64.3	3.0	51
	G	(G) Removal of surcharge	111	631	25	656	-64.3	3.0	50
	H	(H) General Site clearance	112	439	48	487	-61.7	3.0	53
	I	(I) Retaining Wall construction	112	439	48	487	-61.7	3.0	53
	J	(J) Installation of Vertical Drain	106	439	48	487	-61.7	3.0	47
	K	(K) Placement of Filling and surcharge	112	439	48	487	-61.7	3.0	53
	L	(L) Removal of surcharge	111	439	48	487	-61.7	3.0	52
	M	(M) General site clearance	112	520	18	538	-62.6	3.0	52
	N	(N) Retaining wall construction	112	520	18	538	-62.6	3.0	52
	O	(O) Installation of vertical drain	106	520	18	538	-62.6	3.0	46
	P	(P) Placement of filling and surcharge	112	520	18	538	-62.6	3.0	52
	Q	(Q) Removal of surcharge	111	520	18	538	-62.6	3.0	51
	R	(R) Foundation	115	526	36	562	-63.0	3.0	55
	S	(S) Superstructure	112	526	36	562	-63.0	3.0	52
	T	(T) Construction of Underground Utilities	109	526	36	562	-63.0	3.0	49
	U	(U) Roadworks Construction	110	526	36	562	-63.0	3.0	50
N_ch	A	(A) Reprofiting of pond and planting work	101	145	9	154	-51.7	3.0	52
	B	(B) Vegetation Clearance	101	145	9	154	-51.7	3.0	52
	C	(C) General site clearance	111	191	32	223	-54.9	3.0	59
	D	(D) Retaining wall construction	112	191	32	223	-54.9	3.0	60
	E	(E) Installation of Vertical Drain	106	191	32	223	-54.9	3.0	54
	F	(F) Placement of Fill and Surcharge	112	191	32	223	-54.9	3.0	60
	G	(G) Removal of surcharge	111	191	32	223	-54.9	3.0	59
	H	(H) General Site clearance	112	290	42	332	-58.4	3.0	57
	I	(I) Retaining Wall construction	112	290	42	332	-58.4	3.0	57
	J	(J) Installation of Vertical Drain	106	290	42	332	-58.4	3.0	51
	K	(K) Placement of Filling and surcharge	112	290	42	332	-58.4	3.0	57
	L	(L) Removal of surcharge	111	290	42	332	-58.4	3.0	56
	M	(M) General site clearance	112	321	43	364	-59.2	3.0	56
	N	(N) Retaining wall construction	112	321	43	364	-59.2	3.0	56
	O	(O) Installation of vertical drain	106	321	43	364	-59.2	3.0	50
	P	(P) Placement of filling and surcharge	112	321	43	364	-59.2	3.0	56
Q	(Q) Removal of surcharge	111	321	43	364	-59.2	3.0	55	
R	(R) Foundation	115	190	50	240	-55.6	3.0	62	
S	(S) Superstructure	112	190	50	240	-55.6	3.0	59	
T	(T) Construction of Underground Utilities	109	190	50	240	-55.6	3.0	56	
U	(U) Roadworks Construction	110	190	50	240	-55.6	3.0	57	
N11	A	(A) Reprofiting of pond and planting work	101	6	11	17	-32.6	3.0	71
	B	(B) Vegetation Clearance	101	6	11	17	-32.6	3.0	71
	C	(C) General site clearance	111	31	31	62	-43.8	3.0	70
	D	(D) Retaining wall construction	112	31	31	62	-43.8	3.0	71
	E	(E) Installation of Vertical Drain	106	31	31	62	-43.8	3.0	65
	F	(F) Placement of Fill and Surcharge	112	31	31	62	-43.8	3.0	71
	G	(G) Removal of surcharge	111	31	31	62	-43.8	3.0	70
	H	(H) General Site clearance	112	79	34	113	-49.0	3.0	66
	I	(I) Retaining Wall construction	112	79	34	113	-49.0	3.0	66
	J	(J) Installation of Vertical Drain	106	79	34	113	-49.0	3.0	60
	K	(K) Placement of Filling and surcharge	112	79	34	113	-49.0	3.0	66
	L	(L) Removal of surcharge	111	79	34	113	-49.0	3.0	65
	M	(M) General site clearance	112	138	20	158	-52.0	3.0	63
	N	(N) Retaining wall construction	112	138	20	158	-52.0	3.0	63
	O	(O) Installation of vertical drain	106	138	20	158	-52.0	3.0	57
	P	(P) Placement of filling and surcharge	112	138	20	158	-52.0	3.0	63
Q	(Q) Removal of surcharge	111	138	20	158	-52.0	3.0	62	
R	(R) Foundation	115	41	50	91	-47.2	3.0	71	
S	(S) Superstructure	112	41	50	91	-47.2	3.0	68	
T	(T) Construction of Underground Utilities	109	41	50	91	-47.2	3.0	65	
U	(U) Roadworks Construction	110	41	50	91	-47.2	3.0	66	
N12	A	(A) Reprofiting of pond and planting work	101	278	14	292	-57.3	3.0	47
	B	(B) Vegetation Clearance	101	278	14	292	-57.3	3.0	47
	C	(C) General site clearance	111	240	28	268	-56.5	3.0	58
	D	(D) Retaining wall construction	112	240	28	268	-56.5	3.0	59
	E	(E) Installation of Vertical Drain	106	240	28	268	-56.5	3.0	53
	F	(F) Placement of Fill and Surcharge	112	240	28	268	-56.5	3.0	59
	G	(G) Removal of surcharge	111	240	28	268	-56.5	3.0	58
	H	(H) General Site clearance	112	332	36	368	-59.3	3.0	58
	I	(I) Retaining Wall construction	112	332	36	368	-59.3	3.0	58
	J	(J) Installation of Vertical Drain	106	332	36	368	-59.3	3.0	50
	K	(K) Placement of Filling and surcharge	112	332	36	368	-59.3	3.0	58
	L	(L) Removal of surcharge	111	332	36	368	-59.3	3.0	55
	M	(M) General site clearance	112	226	16	242	-55.7	3.0	59
	N	(N) Retaining wall construction	112	226	16	242	-55.7	3.0	59
	O	(O) Installation of vertical drain	106	226	16	242	-55.7	3.0	53
	P	(P) Placement of filling and surcharge	112	226	16	242	-55.7	3.0	59
Q	(Q) Removal of surcharge	111	226	16	242	-55.7	3.0	58	
R	(R) Foundation	115	227	32	259	-56.2	3.0	62	
S	(S) Superstructure	112	227	32	259	-56.2	3.0	59	
T	(T) Construction of Underground Utilities	109	227	32	259	-56.2	3.0	56	
U	(U) Roadworks Construction	110	227	32	259	-56.2	3.0	57	
N13	A	(A) Reprofiting of pond and planting work	101	270	13	283	-57.0	3.0	47
	B	(B) Vegetation Clearance	101	270	13	283	-57.0	3.0	47
	C	(C) General site clearance	111	240	28	268	-56.5	3.0	58
	D	(D) Retaining wall construction	112	240	28	268	-56.5	3.0	59
	E	(E) Installation of Vertical Drain	106	240	28	268	-56.5	3.0	53
	F	(F) Placement of Fill and Surcharge	112	240	28	268	-56.5	3.0	59
	G	(G) Removal of surcharge	111	240	28	268	-56.5	3.0	58
	H	(H) General Site clearance	112	335	40	375	-59.5	3.0	56
	I	(I) Retaining Wall construction	112	335	40	375	-59.5	3.0	56
	J	(J) Installation of Vertical Drain	106	335	40	375	-59.5	3.0	50
	K	(K) Placement of Filling and surcharge	112	335	40	375	-59.5	3.0	56
	L	(L) Removal of surcharge	111	335	40	375	-59.5	3.0	55
	M	(M) General site clearance	112	236	17	253	-56.0	3.0	59
	N	(N) Retaining wall construction	112	236	17	253	-56.0	3.0	59
	O	(O) Installation of vertical drain	106	236	17	253	-56.0	3.0	53
	P	(P) Placement of filling and surcharge	112	236	17	253	-56.0	3.0	59
Q	(Q) Removal of surcharge	111	236	17	253	-56.0	3.0	58	
R	(R) Foundation	115	238	33	271	-56.6	3.0	61	
S	(S) Superstructure	112	238	33	271	-56.6	3.0	58	
T	(T) Construction of Underground Utilities	109	238	33	271	-56.6	3.0	55	
U	(U) Roadworks Construction	110	238	33	271	-56.6	3.0	56	

NSR		Construction Activity	Total SWL, dB(A)	Dist. (NSR to Site Boundary) (A), m	Dist. (Site Boundary to Notional Source) (B), m	Horz. Distance (= A+B), m	Dist. Corr., dB(A)	Façade Corr., dB(A)	CNL, dB(A)		
N14	A	Phase A	(A) Reproffing of pond and planting work	101	130	9	139	-50.8	3.0	53	
	B		(B) Vegetation Clearance	101	130	9	139	-50.8	3.0	53	
	C		(C) General site clearance	111	163	41	204	-54.2	3.0	60	
	D		(D) Retaining wall construction	112	163	41	204	-54.2	3.0	61	
	E	Phase B	(E) Installation of Vertical Drain	106	163	41	204	-54.2	3.0	55	
	F		(F) Placement of Fill and Surcharge	112	163	41	204	-54.2	3.0	61	
	G		(G) Removal of surcharge	111	163	41	204	-54.2	3.0	60	
	H		(H) General Site clearance	112	262	50	312	-57.9	3.0	57	
	I	Phase C	(I) Retaining Wall construction	112	262	50	312	-57.9	3.0	57	
	J		(J) Installation of Vertical Drain	106	262	50	312	-57.9	3.0	51	
	K		(K) Placement of Filling and surcharge	112	262	50	312	-57.9	3.0	57	
	L		(L) Removal of surcharge	111	262	50	312	-57.9	3.0	56	
	M	Phase D	(M) General site clearance	112	273	26	299	-57.5	3.0	58	
	N		(N) Retaining wall construction	112	273	26	299	-57.5	3.0	58	
	O		(O) Installation of vertical drain	106	273	26	299	-57.5	3.0	52	
	P		(P) Placement of filling and surcharge	112	273	26	299	-57.5	3.0	58	
	Q		(Q) Removal of surcharge	111	273	26	299	-57.5	3.0	57	
	R		(R) Foundation	115	170	50	220	-54.8	3.0	63	
	S		Phase B to D	(S) Superstructure	112	170	50	220	-54.8	3.0	60
	T			(T) Construction of Underground Utilities	109	170	50	220	-54.8	3.0	57
U	(U) Roadworks Construction	110	170	50	220	-54.8	3.0	58			
N1P	A	Phase A	(A) Reproffing of pond and planting work	101	166	18	184	-53.3	3.0	51	
	B		(B) Vegetation Clearance	101	166	18	184	-53.3	3.0	51	
	C		(C) General site clearance	111	121	25	146	-51.3	3.0	63	
	D		(D) Retaining wall construction	112	121	25	146	-51.3	3.0	64	
	E	Phase B	(E) Installation of Vertical Drain	106	121	25	146	-51.3	3.0	58	
	F		(F) Placement of Fill and Surcharge	112	121	25	146	-51.3	3.0	64	
	G		(G) Removal of surcharge	111	121	25	146	-51.3	3.0	63	
	H		(H) General Site clearance	112	200	38	238	-55.5	3.0	60	
	I	Phase C	(I) Retaining Wall construction	112	200	38	238	-55.5	3.0	60	
	J		(J) Installation of Vertical Drain	106	200	38	238	-55.5	3.0	54	
	K		(K) Placement of Filling and surcharge	112	200	38	238	-55.5	3.0	60	
	L		(L) Removal of surcharge	111	200	38	238	-55.5	3.0	59	
	M	Phase D	(M) General site clearance	112	98	17	115	-49.2	3.0	66	
	N		(N) Retaining wall construction	112	98	17	115	-49.2	3.0	66	
	O		(O) Installation of vertical drain	106	98	17	115	-49.2	3.0	60	
	P		(P) Placement of filling and surcharge	112	98	17	115	-49.2	3.0	66	
	Q		(Q) Removal of surcharge	111	98	17	115	-49.2	3.0	65	
	R		(R) Foundation	115	101	33	134	-50.5	3.0	68	
	S		Phase B to D	(S) Superstructure	112	101	33	134	-50.5	3.0	65
	T			(T) Construction of Underground Utilities	109	101	33	134	-50.5	3.0	62
U	(U) Roadworks Construction	110	101	33	134	-50.5	3.0	63			
N2P	A	Phase A	(A) Reproffing of pond and planting work	101	109	14	123	-49.8	3.0	54	
	B		(B) Vegetation Clearance	101	109	14	123	-49.8	3.0	54	
	C		(C) General site clearance	111	87	28	115	-49.2	3.0	65	
	D		(D) Retaining wall construction	112	87	28	115	-49.2	3.0	66	
	E	Phase B	(E) Installation of Vertical Drain	106	87	28	115	-49.2	3.0	60	
	F		(F) Placement of Fill and Surcharge	112	87	28	115	-49.2	3.0	66	
	G		(G) Removal of surcharge	111	87	28	115	-49.2	3.0	65	
	H		(H) General Site clearance	112	172	50	222	-54.9	3.0	60	
	I	Phase C	(I) Retaining Wall construction	112	172	50	222	-54.9	3.0	60	
	J		(J) Installation of Vertical Drain	106	172	50	222	-54.9	3.0	54	
	K		(K) Placement of Filling and surcharge	112	172	50	222	-54.9	3.0	60	
	L		(L) Removal of surcharge	111	172	50	222	-54.9	3.0	59	
	M	Phase D	(M) General site clearance	112	104	22	126	-50.0	3.0	65	
	N		(N) Retaining wall construction	112	104	22	126	-50.0	3.0	65	
	O		(O) Installation of vertical drain	106	104	22	126	-50.0	3.0	59	
	P		(P) Placement of filling and surcharge	112	104	22	126	-50.0	3.0	65	
	Q		(Q) Removal of surcharge	111	104	22	126	-50.0	3.0	64	
	R		(R) Foundation	115	104	42	146	-51.3	3.0	67	
	S		Phase B to D	(S) Superstructure	112	104	42	146	-51.3	3.0	64
	T			(T) Construction of Underground Utilities	109	104	42	146	-51.3	3.0	61
U	(U) Roadworks Construction	110	104	42	146	-51.3	3.0	62			
N3P	A	Phase A	(A) Reproffing of pond and planting work	101	173	36	209	-54.4	3.0	50	
	B		(B) Vegetation Clearance	101	173	36	209	-54.4	3.0	50	
	C		(C) General site clearance	111	176	27	203	-54.1	3.0	60	
	D		(D) Retaining wall construction	112	176	27	203	-54.1	3.0	61	
	E	Phase B	(E) Installation of Vertical Drain	106	176	27	203	-54.1	3.0	55	
	F		(F) Placement of Fill and Surcharge	112	176	27	203	-54.1	3.0	61	
	G		(G) Removal of surcharge	111	176	27	203	-54.1	3.0	60	
	H		(H) General Site clearance	112	141	21	162	-52.2	3.0	63	
	I	Phase C	(I) Retaining Wall construction	112	141	21	162	-52.2	3.0	63	
	J		(J) Installation of Vertical Drain	106	141	21	162	-52.2	3.0	57	
	K		(K) Placement of Filling and surcharge	112	141	21	162	-52.2	3.0	63	
	L		(L) Removal of surcharge	111	141	21	162	-52.2	3.0	62	
	M	Phase D	(M) General site clearance	112	6	39	45	-41.0	3.0	74	
	N		(N) Retaining wall construction	112	6	39	45	-41.0	3.0	74	
	O		(O) Installation of vertical drain	106	6	39	45	-41.0	3.0	68	
	P		(P) Placement of filling and surcharge	112	6	39	45	-41.0	3.0	74	
	Q		(Q) Removal of surcharge	111	6	39	45	-41.0	3.0	73	
	R		(R) Foundation	115	6	50	56	-42.9	3.0	75	
	S		Phase B to D	(S) Superstructure	112	6	50	56	-42.9	3.0	72
	T			(T) Construction of Underground Utilities	109	6	50	56	-42.9	3.0	69
U	(U) Roadworks Construction	110	6	50	56	-42.9	3.0	70			
V1P	A	Phase A	(A) Reproffing of pond and planting work	101	98	12	110	-48.8	3.0	55	
	B		(B) Vegetation Clearance	101	98	12	110	-48.8	3.0	55	
	C		(C) General site clearance	111	104	29	133	-50.5	3.0	64	
	D		(D) Retaining wall construction	112	104	29	133	-50.5	3.0	65	
	E	Phase B	(E) Installation of Vertical Drain	106	104	29	133	-50.5	3.0	59	
	F		(F) Placement of Fill and Surcharge	112	104	29	133	-50.5	3.0	65	
	G		(G) Removal of surcharge	111	104	29	133	-50.5	3.0	64	
	H		(H) General Site clearance	112	199	50	249	-55.9	3.0	59	
	I	Phase C	(I) Retaining Wall construction	112	199	50	249	-55.9	3.0	59	
	J		(J) Installation of Vertical Drain	106	199	50	249	-55.9	3.0	53	
	K		(K) Placement of Filling and surcharge	112	199	50	249	-55.9	3.0	59	
	L		(L) Removal of surcharge	111	199	50	249	-55.9	3.0	58	
	M	Phase D	(M) General site clearance	112	137	25	162	-52.2	3.0	63	
	N		(N) Retaining wall construction	112	137	25	162	-52.2	3.0	63	
	O		(O) Installation of vertical drain	106	137	25	162	-52.2	3.0	57	
	P		(P) Placement of filling and surcharge	112	137	25	162	-52.2	3.0	63	
Q	(Q) Removal of surcharge	111	137	25	162	-52.2	3.0	62			

NSR	Construction Activity		Total SWL, dB(A)	Dist. (NSR to Site Boundary) (A), m	Dist. (Site Boundary to Notional Source) (B), m	Horz. Distance (= A+B), m	Dist. Corr., dB(A)	Façade Corr., dB(A)	CNL, dB(A)	
	R	Phase B to D	(R) Foundation	115	132	47	179	-53.0	3.0	65
	S		(S) Superstructure	112	132	47	179	-53.0	3.0	62
	T		(T) Construction of Underground Utilities	109	132	47	179	-53.0	3.0	59
	U		(U) Roadworks Construction	110	132	47	179	-53.0	3.0	60

Remark: ** Distance is based on shortest horizontal distance.

The notional noise source location is assumed based on the methodology listed in the statutory Technical Memorandum on Noise from Construction work other than Percussive Piling and that used in the approved EIA report for Wo Shan Wai. It has been assumed that all PME items are operating and gathered within a worksite for a conservative assessment.

Calculation of Noise Level Due to Travelling of Dump Truck within the Project Construction Area During Site Formation, Filling and Excavation Stage

NSR	Construction Activity		No. of Trucks/hr.	SWL per Unit, dB(A)	Horz. Distance From NSR, m	Average Speed, km/hr	Calculated LAeq Due to Travelling of Dump Truck, dB(A) [®]
N1	F	Dump Trucks Travelling on Haul Road	10	115	183	10	59
N1b	F	Dump Trucks Travelling on Haul Road	10	115	151	10	60
N1c	F	Dump Trucks Travelling on Haul Road	10	115	133	10	61
N2a	F	Dump Trucks Travelling on Haul Road	10	115	112	10	62
N3	F	Dump Trucks Travelling on Haul Road	10	115	72	10	63
N4	F	Dump Trucks Travelling on Haul Road	10	115	160	10	60
N4a	F	Dump Trucks Travelling on Haul Road	10	115	142	10	61
N4c	F	Dump Trucks Travelling on Haul Road	10	115	117	10	61
N5	F	Dump Trucks Travelling on Haul Road	10	115	76	10	63
N6	F	Dump Trucks Travelling on Haul Road	10	115	190	10	59
N7	F	Dump Trucks Travelling on Haul Road	10	115	132	10	61
N9	F	Dump Trucks Travelling on Haul Road	10	115	335	10	57
N9	F	Dump Trucks Travelling on Haul Road	10	115	201	10	59
N10	F	Dump Trucks Travelling on Haul Road	10	115	218	10	59
N sch	F	Dump Trucks Travelling on Haul Road	10	115	522	10	55
N ch	F	Dump Trucks Travelling on Haul Road	10	115	219	10	59
N11	F	Dump Trucks Travelling on Haul Road	10	115	71	10	64
N12	F	Dump Trucks Travelling on Haul Road	10	115	226	10	59
N13	F	Dump Trucks Travelling on Haul Road	10	115	239	10	58
N14	F	Dump Trucks Travelling on Haul Road	10	115	209	10	59
N1P	F	Dump Trucks Travelling on Haul Road	10	115	101	10	62
N2P	F	Dump Trucks Travelling on Haul Road	10	115	115	10	61
N3P	F	Dump Trucks Travelling on Haul Road	10	115	137	10	61
V1P	F	Dump Trucks Travelling on Haul Road	10	115	140	10	61

Remark: * According to information available at EPD website: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

® Based on equation in the British Standard "Noise Control on Construction and Open Sites, BS 5228: Part 1: 2009": $LA_{eq} = SWL - 33 + 10\log_{10} Q - 10\log_{10} V - 10\log_{10} D$

Where,

SWL = Sound Power Level of the dump truck

Q is the number of vehicles per hour

V is the average speed (10 km/hr)

D is the distance of receiver position from the haul road (m)