Annex E

Supporting Information for Noise Assessment

Annex E1

Proposed Construction Works Programme and Plant Inventory (Without Mitigation)

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E1-1 Preliminary Construction Programme

No.	Activity Description	Year 1												Year 2												Year 3												Year 4											
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
I	**Sha Lo Tung Road Improvement**																																														
1	Road Improvement Works Phase 1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																												
2	Road Improvement Works Phase 2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																												
3	Road Improvement Works Phase 3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																												
II	**Development Site**																																														
4	Site Formation																		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																	
5	Superstructure Works																								Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
6	Drainage & Other Works																															Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E1-2 Construction Plant Inventory - Unmitigated

No.	Activities	Plant	TM / EPD[1] / BS 5228 ref.	No. of PME	On-time %	Unit SWL, dB(A)	SWL, dB(A) [2]	Total SWL, dB(A)[2]
I)	**Sha Lo Tung Road Improvement**							
1	**Road Improvement Works Phase 1**						**Maximum SWL for Phase 1[4] =**	**125**
	Group A: Slope Works	Drill, hand-held	EPD/PME/11	6	100%	89	97	**111**
		Air Compressor, air flow > 10m3/min and < 30r	CNP 002	2	100%	102	105	
		Generator, silenced, 75dB(A) at 7m	CNP 102	2	100%	100	103	
		Grout pump	EPD/PME/15	2	100%	105	108	
	Group B: Excavation Works	Lorry, with crane/grab, 5.5 tonne < gross vehicl	EPD/PME/36	1	100%	105	105	**115**
		Excavator/loader, wheeled/tracked	CNP 081	2	100%	112	115	
	Group C: Filling Works	Compactor, vibratory	CNP 050	1	100%	105	105	**105**
	Group D: Road Works	Breaker, excavator mounted (hydraulic)	CNP 028	2	100%	122	125	**125**
		Excavator/loader, wheeled/tracked	CNP 081	2	100%	112	115	
		Concrete mixer (electric)	CNP 045	2	100%	96	99	
		Poker, vibratory, hand-held (electric)	EPD/PME/19	2	100%	102	105	
2	**Road Improvement Works Phase 2**						**Maximum SWL for Phase 2[4] =**	**125**
	Group A: Slope Works	Drill, hand-held	EPD/PME/11	6	100%	89	97	**111**
		Air Compressor, air flow > 10m3/min and < 30r	CNP 002	2	100%	102	105	
		Generator, silenced, 75dB(A) at 7m	CNP 102	2	100%	100	103	
		Grout pump	EPD/PME/15	2	100%	105	108	
	Group B: Minipile construction	Drill, hand-held	EPD/PME/11	2	100%	89	92	**110**
		Air Compressor, air flow > 10m3/min and < 30r	CNP 002	1	100%	102	102	
		Generator, standard	CNP 101	1	100%	108	108	
		Grout pump	EPD/PME/15	1	100%	105	105	
	Group C: RC Wall Construction	Concrete mixer (electric)	CNP 045	1	100%	96	96	**110**
		Concrete pump, stationary/lorry mounted	CNP 047	1	100%	109	109	
		Poker, vibratory, hand-held (electric)	EPD/PME/19	1	100%	102	102	
	Group D: Excavation Works	Lorry, with crane/grab, 5.5 tonne < gross vehicl	EPD/PME/36	1	100%	105	105	**115**
		Excavator/loader, wheeled/tracked	CNP 081	2	100%	112	115	
	Group E: Filling Works	Compactor, vibratory	CNP 050	1	100%	105	105	**105**
	Group F: Road Works	Breaker, excavator mounted (hydraulic)	CNP 028	2	100%	122	125	**125**
		Excavator/loader, wheeled/tracked	CNP 081	2	100%	112	115	
		Concrete mixer (electric)	CNP 045	2	100%	96	99	
3	**Road Improvement Works Phase 3**						**Maximum SWL for Phase 3[4] =**	**125**
	Group A: Slope Works	Drill, hand-held	EPD/PME/11	6	100%	89	97	**111**
		Air Compressor, air flow > 10m3/min and < 30r	CNP 002	2	100%	102	105	
		Generator, silenced, 75dB(A) at 7m	CNP 102	2	100%	100	103	
		Grout pump	EPD/PME/15	2	100%	105	108	
	Group B: Excavation Works	Lorry, with crane/grab, 5.5 tonne < gross vehicl	EPD/PME/36	1	100%	105	105	**115**
		Excavator/loader, wheeled/tracked	CNP 081	2	100%	112	115	
	Group C: Filling Works	Compactor, vibratory	CNP 050	1	100%	105	105	**105**
	Group D: Road Works	Breaker, excavator mounted (hydraulic)	CNP 028	2	100%	122	125	**125**
		Excavator/loader, wheeled/tracked	CNP 081	2	100%	112	115	
		Concrete mixer (electric)	CNP 045	2	100%	96	99	
II)	**Development Site**							
4	**Site Formation**						**Sub-total SWL for Site Formation =**	**123**
	Earthworks	Excavator/loader, wheeled/tracked	CNP 081	3	100%	112	117	**118**
		Lorry, with crane/grab, 5.5 tonne < gross vehicl	EPD/PME/36	4	100%	105	111	
		Roller, vibratory	CNP 186	1	100%	108	108	
	Retaining Walls	Concrete pump, stationary/lorry mounted	CNP 047	1	100%	109	109	**115**
		Generator, standard	CNP 101	1	100%	108	108	
		Poker, vibratory, hand-held (electric)	EPD/PME/19	2	100%	102	105	
		Lorry, with crane/grab, 5.5 tonne < gross vehicl	EPD/PME/36	1	100%	105	105	
		Concrete lorry mixer	CNP 044	1	100%	109	109	
	Foundation Works	Concrete pump, stationary/lorry mounted	CNP 047	1	100%	109	109	**114**
		Generator, standard	CNP 101	1	100%	108	108	
		Poker, vibratory, hand-held (electric)	EPD/PME/19	2	100%	102	105	
		Bar bender and cutter (electric)	CNP 021	1	100%	90	90	
		Concrete lorry mixer	CNP 044	1	100%	109	109	
	Drainage	Excavator/loader, wheeled/tracked	CNP 081	1	100%	112	112	**114**

Annex E1-2 Construction Plant Inventory - Unmitigated

No.	Activities	Plant	TM / EPD[1] / BS 5228 ref.	No. of PME	On-time %	Unit SWL, dB(A)	SWL, dB(A) [2]	Total SWL, dB(A)[2]
		Concrete mixer (electric)	CNP 045	1	100%	96	96	
		Concrete pump, stationary/lorry mounted	CNP 047	1	100%	109	109	
		Poker, vibratory, hand-held (electric)	EPD/PME/19	1	100%	102	102	
	Slope Improvement Works	Drill rig, rotary type (diesel)	EPD/PME/12	2	100%	110	113	**115**
		Air Compressor, air flow > 10m3/min and < 30r	CNP 002	2	100%	102	105	
		Grout pump	EPD/PME/15	1	100%	105	105	
		Generator, standard	CNP 101	1	100%	108	108	
5	**Superstructure Works**						**Sub-total SWL for Superstructure Works =**	**120**
	Reinforced Concrete	Crane, mobile/barge mounted (diesel)	CNP 048	2	100%	112	115	**119**
		Air Compressor, air flow > 10m3/min and < 30r	CNP 002	2	100%	102	105	
		Concrete lorry mixer	CNP 044	1	100%	109	109	
		Lorry, with crane/grab, 5.5 tonne < gross vehicl	EPD/PME/36	1	100%	105	105	
		Concrete pump, stationary/lorry mounted	CNP 047	2	100%	109	112	
		Generator, standard	CNP 101	2	100%	108	111	
		Poker, vibratory, hand-held (electric)	EPD/PME/19	4	100%	102	108	
		Bar bender and cutter (electric)	CNP 021	1	100%	90	90	
		Water pump (electric)	CNP 281	1	100%	88	88	
		Water pump, submersible (electric)	CNP 283	1	100%	85	85	
	Steel Works	Crane, mobile/barge mounted (diesel)	CNP 048	1	100%	112	112	**114**
		Air Compressor, air flow > 10m3/min and < 30r	CNP 002	1	100%	102	102	
		Generator, standard	CNP 101	1	100%	108	108	
		Lorry, with crane/grab, 5.5 tonne < gross vehicl	EPD/PME/36	1	100%	105	105	
6	**Drainage & Other Works**						**Sub-total SWL for Drainage & Other Works =**	**114**
		Excavator/loader, wheeled/tracked	CNP 081	1	100%	112	112	**114**
		Concrete mixer (electric)	CNP 045	1	100%	96	96	
		Concrete pump, stationary/lorry mounted	CNP 047	1	100%	109	109	
		Poker, vibratory, hand-held (electric)	EPD/PME/19	1	100%	102	102	

Notes:

[1] SWLs of EPD/PME items refer to the document prepared by the Noise Control Authority (http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

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

[4] Either Group A, B, C, D, E or F will be undertaken at any one time.

Annex E2

Construction Noise Impact Assessment (Without Mitigation)

Annex E2-1 Summary of Predicted Noise Levels during Daytime Period - Unmitigated

	NSR Location	EIAO-TM Noise Criteria, dB(A)	Predicted Construction Noise Level (dB(A))																																										Max. CNL, dB(A)
			Year 1												Year 2												Year 3												Year 4							
			Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
N1	Village house at Fung Yuen Lo Tsuen	75	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	**79**	59	59	59	59	61	61	61	61	61	61	57	58	58	58	58	58	51	51	51	51	51	51	51	**79**
N2	Village house at Fung Yuen	75	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	59	59	59	59	61	61	61	61	61	61	56	57	57	57	57	57	50	50	50	50	50	50	50	**81**
N3	Village house at Mak Uk	75	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	**81**	58	58	58	58	60	60	60	60	60	60	56	57	57	57	57	57	50	50	50	50	50	50	50	**81**
N4	Village house at Tin Sam	75	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	55	55	55	55	57	57	57	57	57	57	53	54	54	54	54	54	47	47	47	47	47	47	47	**80**
N5	Ha Hang Government Staff Quarters	75	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	56	56	56	56	58	58	58	58	58	58	54	55	55	55	55	55	47	47	47	47	47	47	47	**85**
V1	NSR at Village Zone	75	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	**87**	54	54	54	54	56	56	56	56	56	56	52	53	53	53	53	53	46	46	46	46	46	46	46	**87**
V2	NSR at Village Zone	75	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	**91**	55	55	55	55	57	57	57	57	57	57	53	54	54	54	54	54	46	46	46	46	46	46	46	**91**
V3	NSR at Village Zone (Lei Uk)	75	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	72	72	67	67	67	67	69	69	69	69	69	69	65	66	66	66	66	66	59	59	59	59	59	59	59	72

Note:

[1] **Bold** value indicates exceedance of noise criteria of 75 dB(A) for residential premises.

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E2-2a Construction Airborne Noise Impact Assessment - Unmitigated

NSR: N1 Village house at Fung Yuen Lo Tsuen

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	125	175	-53	3	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76																								
2	Road Improvement Works Phase 2	125	160	-52	3	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76																								
3	Road Improvement Works Phase 3	125	485	-62	3	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67																								
II	**Development Site**																																															
4	Site Formation	123	840	-66	3																		59	59	59	59	59	59	59	59	59	59	59	59														
5	Superstructure Works	120	840	-66	3																								57	57	57	57	57	57	57	57	57	57	57	57								
6	Drainage & Other Works	114	840	-66	3																															51	51	51	51	51	51	51	51	51	51	51	51	
	Predicted Noise Level during Daytime Period, dB(A)					79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	59	59	59	59	61	61	61	61	61	61	57	58	58	58	58	58	51	51	51	51	51	51	51	79

Notes:

[1] Distance Correction for PMEs = 10*log(2*PI*r^2)

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E2-2b Construction Airborne Noise Impact Assessment - Unmitigated

NSR: N2 Village house at Fung Yuen

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	125	140	-51	3	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78																								
2	Road Improvement Works Phase 2	125	130	-50	3	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78																								
3	Road Improvement Works Phase 3	125	540	-63	3	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66																								
II	**Development Site**																																															
4	Site Formation	123	890	-67	3																		59	59	59	59	59	59	59	59	59	59	59	59														
5	Superstructure Works	120	890	-67	3																								56	56	56	56	56	56	56	56	56	56	56	56								
6	Drainage & Other Works	114	890	-67	3																															50	50	50	50	50	50	50	50	50	50	50	50	
	Predicted Noise Level during Daytime Period, dB(A)					81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	59	59	59	59	61	61	61	61	61	61	56	57	57	57	57	57	50	50	50	50	50	50	50	81

Notes:

[1] Distance Correction for PMEs = 10*log(2*PI*r^2)

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E2-2c Construction Airborne Noise Impact Assessment - Unmitigated

NSR: N3 Village house at Mak Uk

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	125	135	-51	3	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78																								
2	Road Improvement Works Phase 2	125	135	-51	3	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78																								
3	Road Improvement Works Phase 3	125	600	-64	3	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65																								
II	**Development Site**																																															
4	Site Formation	123	945	-67	3																		58	58	58	58	58	58	58	58	58	58	58	58														
5	Superstructure Works	120	945	-67	3																								56	56	56	56	56	56	56	56	56	56	56	56								
6	Drainage & Other Works	114	945	-67	3																															50	50	50	50	50	50	50	50	50	50	50	50	
	Predicted Noise Level during Daytime Period, dB(A)					81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	58	58	58	58	60	60	60	60	60	60	56	57	57	57	57	57	50	50	50	50	50	50	50	81

Notes:

[1] Distance Correction for PMEs = 10*log(2*PI*r^2)

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E2-2d Construction Airborne Noise Impact Assessment - Unmitigated

NSR: N4 Village house at Tin Sam

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	125	115	-49	3	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79																								
2	Road Improvement Works Phase 2	125	380	-60	3	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69																								
3	Road Improvement Works Phase 3	125	980	-68	3	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61																								
II	**Development Site**																																															
4	Site Formation	123	1330	-70	3																		55	55	55	55	55	55	55	55	55	55	55	55														
5	Superstructure Works	120	1330	-70	3																								53	53	53	53	53	53	53	53	53	53	53	53								
6	Drainage & Other Works	114	1330	-70	3																															47	47	47	47	47	47	47	47	47	47	47	47	
	Predicted Noise Level during Daytime Period, dB(A)					80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	55	55	55	55	57	57	57	57	57	57	53	54	54	54	54	54	47	47	47	47	47	47	47	80

Notes:

[1] Distance Correction for PMEs = 10*log(2*PI*r^2)

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E2-2e Construction Airborne Noise Impact Assessment - Unmitigated

NSR: N5 Ha Hang Government Staff Quarters

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	125	65	-44	3	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84																								
2	Road Improvement Works Phase 2	125	225	-55	3	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73																								
3	Road Improvement Works Phase 3	125	885	-67	3	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62																								
II	**Development Site**																																															
4	Site Formation	123	1225	-70	3																		56	56	56	56	56	56	56	56	56	56	56	56														
5	Superstructure Works	120	1225	-70	3																								54	54	54	54	54	54	54	54	54	54	54	54							
6	Drainage & Other Works	114	1225	-70	3																															47	47	47	47	47	47	47	47	47	47	47	47	
Predicted Noise Level during Daytime Period, dB(A)						85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	56	56	56	56	58	58	58	58	58	58	58	54	55	55	55	55	55	47	47	47	47	47	47	47	85

Notes:

[1] Distance Correction for PMEs = 10*log(2*PI*r^2)

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E2-2f   Construction Airborne Noise Impact Assessment - Unmitigated

NSR: V1   NSR at Village Zone

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2] Year 1												Year 2												Year 3												Year 4						Max. CNL dB(A)
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	125	50	-42	3	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87																								
2	Road Improvement Works Phase 2	125	520	-62	3	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66																								
3	Road Improvement Works Phase 3	125	1095	-69	3	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60																								
II	**Development Site**																																															
4	Site Formation	123	1435	-71	3																		54	54	54	54	54	54	54	54	54	54	54	54														
5	Superstructure Works	120	1435	-71	3																								52	52	52	52	52	52	52	52	52	52	52	52								
6	Drainage & Other Works	114	1435	-71	3																															46	46	46	46	46	46	46	46	46	46	46	46	
	Predicted Noise Level during Daytime Period, dB(A)					87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	54	54	54	54	56	56	56	56	56	56	52	53	53	53	53	53	46	46	46	46	46	46	46	87

Notes:

[1] Distance Correction for PMEs = 10*log(2*PI*r^2)

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E2-2g Construction Airborne Noise Impact Assessment - Unmitigated

NSR: V2 NSR at Village Zone

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	125	30	-38	3	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91																								
2	Road Improvement Works Phase 2	125	370	-59	3	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69																								
3	Road Improvement Works Phase 3	125	995	-68	3	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60																								
II	**Development Site**																																															
4	Site Formation	123	1360	-71	3																		55	55	55	55	55	55	55	55	55	55	55	55														
5	Superstructure Works	120	1360	-71	3																								53	53	53	53	53	53	53	53	53	53	53	53								
6	Drainage & Other Works	114	1360	-71	3																															46	46	46	46	46	46	46	46	46	46	46	46	
	Predicted Noise Level during Daytime Period, dB(A)					91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	55	55	55	55	57	57	57	57	57	57	53	54	54	54	54	54	46	46	46	46	46	46	46	91

Notes:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

<u>Annex E2-2h</u> ***<u>Construction Airborne Noise Impact Assessment - Unmitigated</u>***

NSR: V3 NSR at Village Zone (Lei Uk)

Predicted Construction Noise Level (dB(A)) [2] — Year 1

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
I	**Sha Lo Tung Road Improvement**																
1	Road Improvement Works Phase 1	125	1550	-72	3	57	57	57	57	57	57	57	57	57	57	57	57
2	Road Improvement Works Phase 2	125	895	-67	3	61	61	61	61	61	61	61	61	61	61	61	61
3	Road Improvement Works Phase 3	125	400	-60	3	68	68	68	68	68	68	68	68	68	68	68	68
II	**Development Site**																
4	Site Formation	123	323	-58	3												
5	Superstructure Works	120	323	-58	3												
6	Drainage & Other Works	114	323	-58	3												
	Predicted Noise Level during Daytime Period, dB(A)					69	69	69	69	69	69	69	69	69	69	69	69

Predicted Construction Noise Level (dB(A)) [2] — Year 2

No.	Activity Description	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
I	**Sha Lo Tung Road Improvement**												
1	Road Improvement Works Phase 1	57	57	57	57	57	57	57					
2	Road Improvement Works Phase 2	61	61	61	61	61	61	61					
3	Road Improvement Works Phase 3	68	68	68	68	68	68	68					
II	**Development Site**												
4	Site Formation						67	67	67	67	67	67	67
5	Superstructure Works												65
6	Drainage & Other Works												
	Predicted Noise Level during Daytime Period, dB(A)	69	69	69	69	69	72	72	67	67	67	67	69

Predicted Construction Noise Level (dB(A)) [2] — Year 3

No.	Activity Description	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
I	**Sha Lo Tung Road Improvement**												
1	Road Improvement Works Phase 1												
2	Road Improvement Works Phase 2												
3	Road Improvement Works Phase 3												
II	**Development Site**												
4	Site Formation	67	67	67	67	67							
5	Superstructure Works	65	65	65	65	65	65	65	65	65	65	65	
6	Drainage & Other Works							59	59	59	59	59	59
	Predicted Noise Level during Daytime Period, dB(A)	69	69	69	69	69	65	66	66	66	66	66	59

Predicted Construction Noise Level (dB(A)) [2] — Year 4

No.	Activity Description	Feb	Mar	Apr	May	Jun	Jul	Max. CNL dB(A)
I	**Sha Lo Tung Road Improvement**							
1	Road Improvement Works Phase 1							
2	Road Improvement Works Phase 2							
3	Road Improvement Works Phase 3							
II	**Development Site**							
4	Site Formation							
5	Superstructure Works							
6	Drainage & Other Works	59	59	59	59	59	59	
	Predicted Noise Level during Daytime Period, dB(A)	59	59	59	59	59	59	72

Notes:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

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

Annex E3

Road Traffic Noise Impact Assessment (Without Mitigation)

Annex E3-3 Road Noise Model Input Files

```
TEXT



TEXT
Option to set calc method as L10
OPT=2.0

COA=    1.0COD=  1000.0COR=    20.0

READ
ROAD-1.FLO
READ
ROAD-4.SEG
READ
ROAD-1.BAR

LINK
All
1,

READ
ROAD-4.REC

END

TEXT
Filename: ROAD-2.SEG

TEXT
Sha Lo Tung Road Improvement

TEXT
Sha Lo Tung Road Improvement
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4.7HCG=    0.0
SEG=    1.0NCY=    0.0WCY=    3.5DCY=    0.0HCY=
0.0
RST=    1.0RTD=    1.2GND=    0.0NBA=   -1.0RCT=
0.0
REX=836589.6REY=835563.0HCE=    3.7SEND     .0
TEXT

REX=836610.6REY=835569.6HCE=    4.1SEND     .0
REX=836656.3REY=835560.7HCE=    4.6SEND     .0
REX=836706.7REY=835551.5HCE=    5.2SEND     .0
REX=836729.5REY=835553.3HCE=    5.8SEND     .0
REX=836757.5REY=835591.0HCE=   10.5SEND     .0
REX=836784.6REY=835603.1HCE=   12.8SEND     .0
REX=836801.8REY=835621.4HCE=   14.4SEND     .0
REX=836808.7REY=835647.8HCE=   16.7SEND     .0
REX=836822.3REY=835683.7HCE=   22.2SEND     .0
REX=836846.6REY=835701.7HCE=   25.1SEND     .0
REX=836857.8REY=835738.4HCE=   26.5SEND     .0
REX=836870.8REY=835753.0HCE=   28.0SEND     .0
REX=836877.8REY=835772.1HCE=   29.4SEND     .0
REX=836901.1REY=835790.9HCE=   30.0SEND     .0
REX=836903.9REY=835814.3HCE=   31.2SEND     .0
REX=836894.7REY=835841.6HCE=   34.0SEND     .0
REX=836910.4REY=835864.6HCE=   36.0SEND     .0
REX=836923.3REY=835882.8HCE=   39.0SEND     .0
REX=836932.1REY=835920.6HCE=   44.0SEND     .0
REX=836922.8REY=835942.4HCE=   47.2SEND     .0
REX=836930.8REY=835963.1HCE=   49.6SEND     .0
REX=836941.1REY=835980.6HCE=   52.0SEND     .0
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REX=836926.7REY=836015.7HCE=   58.0SEND     .0
REX=836938.7REY=836047.1HCE=   60.9SEND     .0
REX=836980.2REY=836058.6HCE=   61.1SEND     .0
REX=837004.9REY=836077.8HCE=   61.5SEND     .0
REX=837026.8REY=836091.4HCE=   63.0SEND     .0
REX=837040.6REY=836110.0HCE=   64.7SEND     .0
REX=837037.8REY=836141.9HCE=   70.7SEND     .0
REX=837044.3REY=836165.6HCE=   74.0SEND     .0
REX=837047.1REY=836192.3HCE=   80.1SEND     .0
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REX=837086.2REY=836248.2HCE=   87.5SEND     .0
REX=837084.5REY=836269.1HCE=   89.7SEND     .0
REX=837087.3REY=836303.5HCE=   93.3SEND     .0
REX=837076.9REY=836317.3HCE=   95.0SEND     .0
REX=837052.9REY=836325.3HCE=   96.6SEND     .0
REX=837046.7REY=836342.5HCE=   98.0SEND     .0
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REX=837005.3REY=836617.0HCE=  133.6SEND     .0
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REX=836960.7REY=836680.3HCE=  144.4SEND     .0
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REX=836932.4REY=836714.5HCE=  151.8SEND     .0
REX=836901.6REY=836731.4HCE=  155.0SEND     .0
REX=836892.3REY=836753.1HCE=  157.0SEND     .0
REX=836862.1REY=836761.5HCE=  161.2SEND     .0
REX=836848.5REY=836772.3HCE=  165.0SEND     .0
REX=836823.2REY=836775.3HCE=  167.0SEND     .0
REX=836816.6REY=836811.5HCE=  171.0SEND     .0
REX=836804.0REY=836887.3HCE=  181.3SEND     .0
REX=836823.3REY=836911.9HCE=  184.0SEND     .0
REX=836841.6REY=836953.6HCE=  189.4SEND     .0
REX=836871.8REY=836996.5HCE=  197.0SEND     .0
REX=836858.7REY=837029.3HCE=  199.0SEND     .0
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REX=836791.6REY=837346.4HCE=  184.0SEND     .0


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Filename: ROAD-1.BAR

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0.0WBA=    0.0
          ABA=    0.0
          BEX=837046.4BEY=836396.9HBE=  100.0
TEXT

NBA=    2.0
BEX=837035.0BEY=836419.0HBE=  100.0

TEXT
Hillside
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            BEX=836816.6BEY=835693.6HBE=   20.0
TEXT

NBA=   28.0
BEX=836832.6BEY=835716.4HBE=   20.0
NBA=   29.0
BEX=836850.1BEY=835784.1HBE=   20.0
NBA=   30.0
BEX=836865.3BEY=835800.1HBE=   20.0
NBA=   31.0
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NBA=   32.0
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NBA=   33.0
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BEX=836859.2BEY=836040.6HBE=   20.0
NBA=   37.0
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NBA=   38.0
BEX=836882.8BEY=836133.4HBE=   20.0
NBA=   39.0
BEX=836909.4BEY=836148.6HBE=   20.0
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BEX=836908.7BEY=836175.3HBE=   20.0
NBA=   41.0
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BEX=836879.0BEY=835859.4HBE=   30.0
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NBA=   48.0
BEX=836882.8BEY=835929.4HBE=   30.0
NBA=   49.0
BEX=836885.1BEY=835969.8HBE=   30.0
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NBA=   73.0
BEX=836958.1BEY=836265.8HBE=   40.0
NBA=   74.0
BEX=836952.8BEY=836302.2HBE=   40.0
NBA=   75.0
BEX=836939.1BEY=836313.6HBE=   40.0
NBA=   76.0
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NBA=   77.0
BEX=836923.9BEY=836350.9HBE=   40.0
NBA=   78.0
BEX=836922.4BEY=836373.8HBE=   40.0

TEXT

NBA=   82.0BSX=836922.4BSY=835959.8HBS=   50.0
          BEX=836926.2BEY=835989.4HBE=   50.0
NBA=   83.0
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NBA=   84.0
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BEX=836949.0BEY=836352.4HBE=   50.0
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NBA=   99.0
BEX=836940.6BEY=836386.7HBE=   50.0

TEXT

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NBA=  103.0
BEX=837031.2BEY=836209.8HBE=   70.0
NBA=  104.0
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BEX=837007.6BEY=836298.8HBE=   70.0
NBA=  109.0
BEX=836988.6BEY=836339.1HBE=   70.0
NBA=  110.0
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TEXT

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          BEX=836926.9BEY=835814.8HBE=   40.0
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TEXT

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NBA=   164.0
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NBA=   165.0
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NBA=   166.0
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NBA=   169.0
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BEX=836758.0BEY=835530.4HBE=    10.0

NBA=   174.0BSX=836758.0BSY=835530.4HBS=    10.0
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Hillside
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TEXT
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BEX=836830.4BEY=835615.4HBE=    30.0
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NBA=   180.0
BEX=836828.1BEY=835589.8HBE=    30.0

TEXT

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TEXT

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RETN     0.0

TEXT
Filename: ROAD-2.REC

TEXT


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25.0AN2=   205.0
REF=     1.0GO       .0
HPF=     3.0RPT=     2.0

TEXT
2   Fung Yuen
HRA=    17.5OPX=836806.0OPY=836134.6AN1=    11.7AN2=
192.0
GO       .0

TEXT
3   Mak Uk
HRA=    13.5OPX=836777.1OPY=836081.8AN1=     1.0AN2=
181.0
GO       .0
RPT=     2.0

TEXT
4   Tin Sam
HRA=     6.5OPX=836692.0OPY=835710.0AN1=     1.0AN2=
181.0
GO       .0
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TEXT
5   Ha Hang Government Staff Quarters
HRA=    21.5OPX=836999.8OPY=835800.2AN1=   196.0AN2=
16.0
GO       .0
RPT=     3.0

TEXT
6   V1
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198.0
GO       .0
RPT=     2.0

TEXT
7   V2
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23.8
GO       .0
RPT=     2.0
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GO       .0

TEXT
9   CDA1
HRA=    6.5OPX=836587.2OPY=835643.4AN1=    18.0AN2=
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GO       .0
RPT=    16.0

TEXT
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300.0
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HPF=    3.5RPT=    2.0

TEXT
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216.8
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RPT=    2.0


RETN    0.0
```

Annex E4

Fixed Plant Operational Noise Impact Assessment (Without Mitigation)

Annex E4-1

Inventory of Fixed Plant Noise Sources during Operational Phase

No.	Item	Location	Noise Source	Model No.	Specified Maximum Sound Power Level [3] (SWL, in dB(A))	Quantity
1	VRV Outdoor Units [1]	Outdoor at G/F of NIC	VRV	PUHY-P500 YSHM-A	68.0	3
2			VRV	PUHY-P750 YSHM-A	71.5	1
3	VRV Outdoor Units [1]	Outdoor at G/F (between NIC and MCER)	VRV	PUHY-P750 YSHM-A	71.5	4
4			VRV	PUHY-P1100 YSHM-A	73.1	2
5	E/M Plant Room [2]	1/F of MCER	-	N/A	65	1
6	E/M Plant Room [2]	G/F of Quarters	-	N/A	50	1

Notes:

[1] The VRV Outdoor Units will be operated during daytime and evening time periods only.

In accordance with the relevant specification for the VRV Outdoor Units (*see attached*), sound pressure levels measured at 1m in anechoic room are provided. The sound power levels were calculated as follows:

Model No.	Sound Power Level (SWL), dB(A)
PUHY-P500 YSHM-A	60+8=68.0dB(A)
PUHY-P750 YSHM-A	63.5+8=71.5dB(A)
PUHY-P1100 YSHM-A#	10*LOG(10^(60/10)+10^(63.5/10))+8=73.1dB(A)

#PUHY-P1100 YSHM-A was setup with a combination of PUHY-P750 YSHM-A and PUHY-P350 YSHM-A. However, noise data for PUHY-P350 YSHM-A is not available, noise data for PUHY-P500 YSHM-A was used instead.

[2] Detailed design of the Plant Rooms is not yet available at this stage. The equipment within the Plant Rooms is expected to be operated during daytime and evening time periods only as the MCER will be closed before 23:00 hours.

The maximum allowable SWLs of the Plant Room louvers were determined by adopting standard acoustics principles. The following formula was used for calculating the maximum allowable SWLs:

$$SPL = Max\ SWL - DC + FC - BC$$

where

SPL	Sound Pressure Level, in dB(A)
Max. SWL	Maximum Allowable Sound Power Level, in dB(A)
DC	Distance Attenuation, in dB(A) (i.e. 20 log D + 8 [where D is the distance in metres])
FC	Facade Correction, in dB(A) (i.e. 3 dB(A))
BC	Barrier Correction, in dB(A)

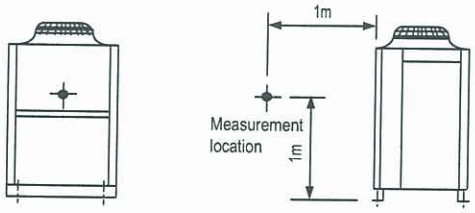
[3] The maximum allowable SWLs will be appropriately specified in the contract tender, necessary noise mitigation measures would be implemented to ensure full compliance of the noise criteria.

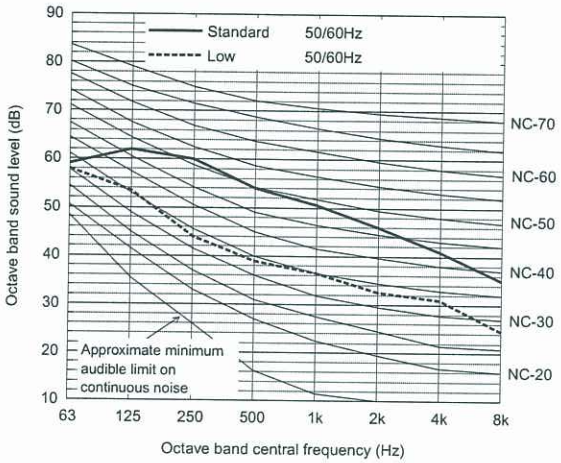
Item	Location	Quantity	Module
VRV Outdoor Units	Outdoor at 1/F (above Reception of NIC)	4 nos. of VRVs	PUHY-P500 YSHM-A
			PUHY-P500 YSHM-A
			PUHY-P500 YSHM-A
			PUHY-P750Y SHM-A
VRV Outdoor Units	Outdoor at 1/F (above the connection footpath between NIC and MCER)	6 nos. of VRVs	PUHY-P750Y SHM-A
			PUHY-P750Y SHM-A
			PUHY-P750Y SHM-A
			PUHY-P750Y SHM-A
			PUHY-P1100Y SHM-A
			PUHY-P1100Y SHM-A

Notes.
For the VRV outdoor unit "PUHY-P1100YSHM-A", please use noise data from PUHY-P500YSHM-A & PUHY-P750YSHM-A for noise calculation.

5. Sound Pressure Levels

•PUHY-P250YHM-A(-BS)

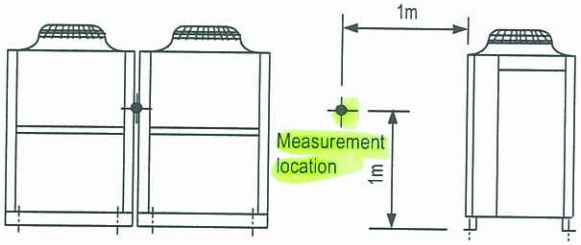


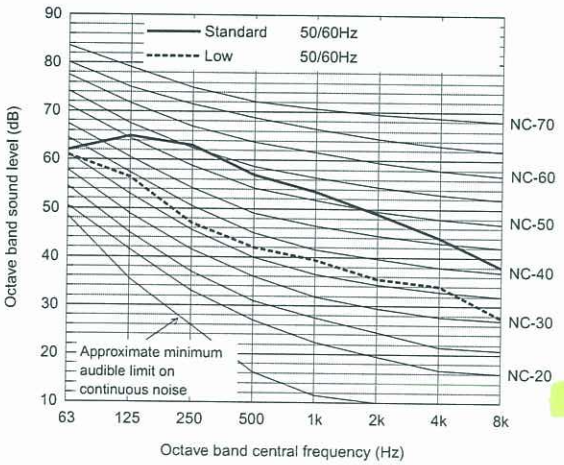


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	59.0	62.0	60.0	54.0	50.5	46.0	41.0	35.0	57.0
Low Noise Mode	50/60Hz	58.0	53.5	44.0	39.0	36.5	32.5	31.0	24.5	44.0

When Low Noise Mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low Noise Mode automatically in the case that the operation condition is severe.

•PUHY-P500YSHM-A(-BS)

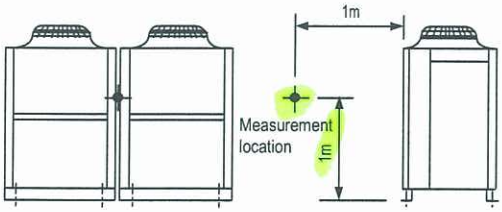


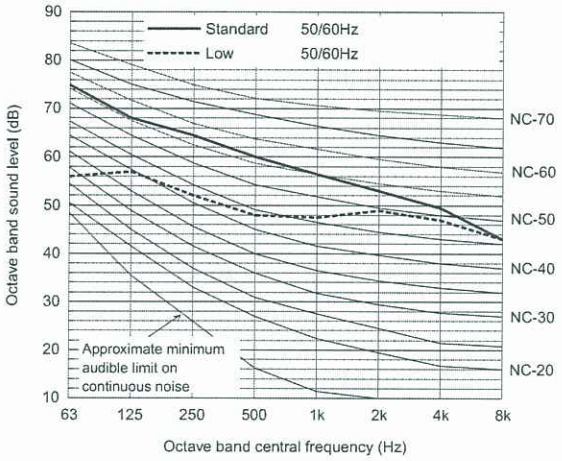


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	62.0	65.0	63.0	57.0	53.5	49.0	44.0	38.0	60.0
Low Noise Mode	50/60Hz	61.0	56.5	47.0	42.0	39.5	35.5	34.0	27.5	47.0

When Low Noise Mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low Noise Mode automatically in the case that the operation condition is severe.

•PUHY-P750YSHM-A(-BS)





		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	75.0	68.0	64.5	60.0	56.5	53.0	49.5	43.0	63.5
Low Noise Mode	50/60Hz	56.0	57.0	52.0	48.0	47.5	49.0	47.0	43.0	55.0

When Low Noise Mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low Noise Mode automatically in the case that the operation condition is severe.

Annex E4-2

Operational Noise Impact Assessment

NSR: GQ1 Guest Quarter within the NIC

No.	Item	Location	Noise Source	Model No.	Max. Allowable SWL, dB(A)	Quantity	Distance from source to NSR (d2),m	Corrections For				Predicted Noise Level (dB(A) $L_{eq, 30min}$)
								Quantity dB(A) [1]	Distance dB(A) [2]	Façade dB(A)	Barrier dB(A) [3]	
Daytime & Evening Time Periods (between 0700 to 2300 hours)												
1	VRV Outdoor Units [4]	Outdoor at G/F of NIC	VRV	PUHY-P500 YSHM-A	68.0	3	31	5	-37.7	3	-10	28
2			VRV	PUHY-P750 YSHM-A	71.5	1	31	0	-37.7	3	-10	27
3	VRV Outdoor Units [4]	Outdoor at G/F (between NIC and MCER)	VRV	PUHY-P750 YSHM-A	71.5	4	58	6	-43.2	3	-10	27
4			VRV	PUHY-P1100 YSHM-A	73.1	2	58	3	-43.2	3	-10	26
5	Plant Room [5]	1/F of MCER	-	N/A	65	1	54	0	-42.6	3	0	25
6	Plant Room [5]	G/F of Quarters	-	N/A	50	1	65	0	-44.3	3	0	9
										Predicted Façade Noise Level (dB(A)) =		**34**

Notes:

[1] Correction for quantity = 10*log(Quantity)

[2] Distance correction for SWL = -10*log(2π(d2)^2)

[3] Reference was also made from IND-TM, a negative correction of 10dB(A) will be applied for noise source totally screened by barrier or building such that none will be visible when viewed from any window, door or other opening of the NSR.

[4] The VRV Outdoor Units will be operated during daytime and evening time periods only.

In accordance with the relevant specification for the VRV Outdoor Units, sound pressure levels measured at 1m in anechoic room are provided. The sound power levels were calculated as follows:

Model No.	Sound Power Level (SWL), dB(A)
PUHY-P500 YSHM-A	60+8=68.0dB(A)
PUHY-P750 YSHM-A	63.5+8=71.5dB(A)
PUHY-P1100 YSHM-A#	10*LOG(10^(60/10)+10^(63.5/10))+8=73.1dB(A)

#PUHY-P1100 YSHM-A was setup with a combination of PUHY-P750 YSHM-A and PUHY-P350 YSHM-A. However, noise data for PUHY-P350 YSHM-A is not available, noise data for PUHY-P500 YSHM-A was used instead.

[5] Detailed design of the Plant Rooms is not yet available at this stage. The equipment within the Plant Rooms is expected to be operated during daytime and evening time periods only as the MCER will be closed before 23:00 hours.

The maximum allowable SWLs of the Plant Room louvers were determined by adopting standard acoustics principles. The following formula was used for calculating the maximum allowable SWLs:

SPL = Max SWL – DC + FC - BC

where

SPL	Sound Pressure Level, in dB(A)
Max. SWL	Maximum Allowable Sound Power Level, in dB(A)
DC	Distance Attenuation, in dB(A) (i.e. 20 log D + 8 [where D is the distance in metres])
FC	Facade Correction, in dB(A) (i.e. 3 dB(A))
BC	Barrier Correction, in dB(A)

Annex E4-3

Operational Noise Impact Assessment

NSR: SQ1 Quarters within the Development Site

No.	Item	Location	Noise Source	Model No.	Max. Allowable SWL, dB(A)	Quantity	Distance from source to NSR (d2),m	Corrections For				Predicted Noise Level (dB(A) $L_{eq, 30min}$)
								Quantity dB(A) [1]	Distance dB(A) [2]	Façade dB(A)	Barrier dB(A) [3]	
Daytime & Evening Time Periods (between 0700 to 2300 hours)												
1	VRV Outdoor Units [4]	Outdoor at G/F of NIC	VRV	PUHY-P500 YSHM-A	68.0	3	63	5	-44.0	3	-10	22
2			VRV	PUHY-P750 YSHM-A	71.5	1	63	0	-44.0	3	-10	20
3	VRV Outdoor Units [4]	Outdoor at G/F (between NIC and MCER)	VRV	PUHY-P750 YSHM-A	71.5	4	75	6	-45.5	3	-10	25
4			VRV	PUHY-P1100 YSHM-A	73.1	2	75	3	-45.5	3	-10	24
5	Plant Room [5]	1/F of MCER	-	N/A	65	1	48	0	-41.6	3	0	26
6	Plant Room [5]	G/F of Quarters	-	N/A	50	1	27	0	-36.6	3	0	16
										Predicted Façade Noise Level (dB(A)) =		**31**

Notes:

[1] Correction for quantity = 10*log(Quantity)

[2] Distance correction for SWL = $-10*\log(2\pi(d2)^2)$

[3] Reference was also made from IND-TM, a negative correction of 10dB(A) will be applied for noise source totally screened by barrier or building such that none will be visible when viewed from any window, door or other opening of the NSR.

[4] The VRV Outdoor Units will be operated during daytime and evening time periods only.

In accordance with the relevant specification for the VRV Outdoor Units, sound pressure levels measured at 1m in anechoic room are provided. The sound power levels were calculated as follows:

Model No.	Sound Power Level (SWL), dB(A)
PUHY-P500 YSHM-A	60+8=68.0dB(A)
PUHY-P750 YSHM-A	63.5+8=71.5dB(A)
PUHY-P1100 YSHM-A#	10*LOG(10^(60/10)+10^(63.5/10))+8=73.1dB(A)

#PUHY-P1100 YSHM-A was setup with a combination of PUHY-P750 YSHM-A and PUHY-P350 YSHM-A. However, noise data for PUHY-P350 YSHM-A is not available, noise data for PUHY-P500 YSHM-A was used instead.

[5] Detailed design of the Plant Rooms is not yet available at this stage. The equipment within the Plant Rooms is expected to be operated during daytime and evening time periods only as the MCER will be closed before 23:00 hours.

The maximum allowable SWLs of the Plant Room louvers were determined by adopting standard acoustics principles. The following formula was used for calculating the maximum allowable SWLs:

SPL = Max SWL – DC + FC - BC

where

SPL	Sound Pressure Level, in dB(A)
Max. SWL	Maximum Allowable Sound Power Level, in dB(A)
DC	Distance Attenuation, in dB(A) (i.e. 20 log D + 8 [where D is the distance in metres])
FC	Facade Correction, in dB(A) (i.e. 3 dB(A))
BC	Barrier Correction, in dB(A)

Annex E5

Construction Noise Impact Assessment (With Mitigation)

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E5-1 Construction Plant Inventory - Mitigated

No.	Activities	Plant	TM / EPD[1] / BS 5228 ref. [1]	No. of PME	On-time %	Unit SWL, dB(A)	SWL, dB(A) [2]	Total SWL, dB(A)[2]	For V2 only [5]: Type of Noise Control [3]	Noise reduction, dB(A)	Total SWL, dB(A)[2]
I)	**Sha Lo Tung Road Improvement**										
1	**Road Improvement Works Phase 1**						**Maximum SWL for Phase 1[4] =**	**112**	**Maximum SWL for Phase 1[4] =**		**110**
	Group A: Slope Works	Drill, hand-held	EPD/PME/11	6	100%	89	97	**111**			**108**
		Air Compressor, air flow > 10m3/min and < 30r	CNP 002	2	100%	102	105				
		Generator, silenced, 75dB(A) at 7m	CNP 102	2	100%	100	103				
		Grout pump	EPD/PME/15	2	100%	105	108		Noise Barrier	-10	
	Group B: Excavation Works	Lorry, with crane/grab, 5.5 tonne < gross vehicl	EPD/PME/36	1	100%	105	105	**110**			**110**
		Tracked Excavator/loader	BS D3 97	2	100%	105	108				
	Group C: Filling Works	Compactor, vibratory	CNP 050	1	100%	105	105	**105**			**105**
	Group D: Road Works	Hydraulic breaker, excavator mounted	BS D8 12	2	100%	106	109	**112**	Noise Barrier	-5	**110**
		Tracked Excavator/loader	BS D3 97	2	100%	105	108				
		Concrete mixer (electric)	CNP 045	2	100%	96	99				
		Poker, vibratory, hand-held	BS D6 40	1	100%	98	98		Noise Barrier	-5	
2	**Road Improvement Works Phase 2**						**Maximum SWL for Phase 2[4] =**	**112**			
	Group A: Slope Works	Drill, hand-held	EPD/PME/11	6	100%	89	97	**111**			
		Air Compressor, air flow > 10m3/min and < 30r	CNP 002	2	100%	102	105				
		Generator, silenced, 75dB(A) at 7m	CNP 102	2	100%	100	103				
		Grout pump	EPD/PME/15	2	100%	105	108				
	Group B: Minipile construction	Drill, hand-held	EPD/PME/11	2	100%	89	92	**108**			
		Air Compressor, air flow > 10m3/min and < 30r	CNP 002	1	100%	102	102				
		Generator, silenced, 75dB(A) at 7m	CNP 102	1	100%	100	100				
		Grout pump	EPD/PME/15	1	100%	105	105				
	Group C: RC Wall Construction	Concrete mixer (electric)	CNP 045	1	100%	96	96	**110**			
		Concrete pump, stationary/lorry mounted	CNP 047	1	100%	109	109				
		Poker, vibratory, hand-held	BS D6 40	1	100%	98	98				
	Group D: Excavation Works	Lorry, with crane/grab, 5.5 tonne < gross vehicl	EPD/PME/36	1	100%	105	105	**110**			
		Tracked Excavator/loader	BS D3 97	2	100%	105	108				
	Group E: Filling Works	Compactor, vibratory	CNP 050	1	100%	105	105	**105**			
	Group F: Road Works	Hydraulic breaker, excavator mounted	BS D8 12	2	100%	106	109	**112**			
		Tracked Excavator/loader	BS D3 97	2	100%	105	108				
		Concrete mixer (electric)	CNP 045	2	100%	96	99				
3	**Road Improvement Works Phase 3**						**Maximum SWL for Phase 3[4] =**	**112**			
	Group A: Slope Works	Drill, hand-held	EPD/PME/11	6	100%	89	97	**111**			
		Air Compressor, air flow > 10m3/min and < 30r	CNP 002	2	100%	102	105				
		Generator, silenced, 75dB(A) at 7m	CNP 102	2	100%	100	103				
		Grout pump	EPD/PME/15	2	100%	105	108				
	Group B: Excavation Works	Lorry, with crane/grab, 5.5 tonne < gross vehicl	EPD/PME/36	1	100%	105	105	**110**			
		Tracked Excavator/loader	BS D3 97	2	100%	105	108				
	Group C: Filling Works	Compactor, vibratory	CNP 050	1	100%	105	105	**105**			
	Group D: Road Works	Hydraulic breaker, excavator mounted	BS D8 12	2	100%	106	109	**112**			
		Tracked Excavator/loader	BS D3 97	2	100%	105	108				
		Concrete mixer (electric)	CNP 045	2	100%	96	99				

Notes:

[1] SWLs of EPD/PME items refer to the document prepared by the Noise Control Authority (http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)
BS - British Standard BS 5228:2009, Part 1 Noise and Vibration Control on Construction and Open Sites

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

[3] Noise barrier for mobile PME -5dB(A)
Noise barrier for stationary PME -10dB(A)

[4] Either Group A, B, C, D, E or F will be undertaken at any one time.

[5] If there is any occupant lives within the village zone during the construction of Road Improvement Works Phase I, the noise barriers will be provided for grout pump, hydraulic breaker and poker.

Annex E5-2 Summary of Predicted Noise Levels during Daytime Period - Mitigated

	NSR Location	EIAO-TM Noise Criteria, dB(A)	Predicted Construction Noise Level (dB(A))																																											Max. CNL, dB(A)
			Year 1												Year 2												Year 3												Year 4											
			Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul		
N1	Village house at Fung Yuen Lo Tsuen	75	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	67	67	59	59	59	59	61	61	61	61	61	61	57	58	58	58	58	58	51	51	51	51	51	51	51		67
N2	Village house at Fung Yuen	75	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	68	68	59	59	59	59	61	61	61	61	61	61	56	57	57	57	57	57	50	50	50	50	50	50	50		68
N3	Village house at Mak Uk	75	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	68	68	58	58	58	58	60	60	60	60	60	60	56	57	57	57	57	57	50	50	50	50	50	50	50		68
N4	Village house at Tin Sam	75	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	67	67	55	55	55	55	57	57	57	57	57	57	53	54	54	54	54	54	47	47	47	47	47	47	47		67
N5	Ha Hang Government Staff Quarters	75	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	56	56	56	56	58	58	58	58	58	58	54	55	55	55	55	55	47	47	47	47	47	47	47		71
V1	NSR at Village Zone	75	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	54	54	54	54	56	56	56	56	56	56	52	53	53	53	53	53	46	46	46	46	46	46	46		73
V2	NSR at Village Zone	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	55	55	55	55	57	57	57	57	57	57	53	54	54	54	54	54	46	46	46	46	46	46	46		75
V3	NSR at Village Zone (Lei Uk)	75	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	68	68	67	67	67	67	69	69	69	69	69	69	65	66	66	66	66	66	59	59	59	59	59	59	59		69

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E5-3a ***Construction Airborne Noise Impact Assessment - Mitigated***

NSR: N1 Village house at Fung Yuen Lo Tsuen

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	112	175	-53	3	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62																								
2	Road Improvement Works Phase 2	112	160	-52	3	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63																								
3	Road Improvement Works Phase 3	112	485	-62	3	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53																								
II	**Development Site**																																															
4	Site Formation	123	840	-66	3																		59	59	59	59	59	59	59	59	59	59	59	59														
5	Superstructure Works	120	840	-66	3																								57	57	57	57	57	57	57	57	57	57	57	57							
6	Drainage & Other Works	114	840	-66	3																															51	51	51	51	51	51	51	51	51	51	51	51	
	Predicted Noise Level during Daytime Period, dB(A)					66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	67	67	59	59	59	59	61	61	61	61	61	61	57	58	58	58	58	58	51	51	51	51	51	51	51	67

Notes:

[1] Distance Correction for PMEs = 10*log(2*PI*r^2)

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E5-3b ***Construction Airborne Noise Impact Assessment - Mitigated***

NSR: N2 Village house at Fung Yuen

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	112	140	-51	3	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64																								
2	Road Improvement Works Phase 2	112	130	-50	3	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65																								
3	Road Improvement Works Phase 3	112	540	-63	3	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52																								
II	**Development Site**																																															
4	Site Formation	123	890	-67	3																		59	59	59	59	59	59	59	59	59	59	59	59														
5	Superstructure Works	120	890	-67	3																								56	56	56	56	56	56	56	56	56	56	56	56								
6	Drainage & Other Works	114	890	-67	3																															50	50	50	50	50	50	50	50	50	50	50	50	
	Predicted Noise Level during Daytime Period, dB(A)					67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	68	68	59	59	59	59	61	61	61	61	61	61	56	57	57	57	57	57	50	50	50	50	50	50	50	68

Notes:

[1] Distance Correction for PMEs = 10*log(2*PI*r^2)

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E5-3c Construction Airborne Noise Impact Assessment - Mitigated

NSR: N3 Village house at Mak Uk

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	112	135	-51	3	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64																								
2	Road Improvement Works Phase 2	112	135	-51	3	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64																								
3	Road Improvement Works Phase 3	112	600	-64	3	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51																								
II	**Development Site**																																															
4	Site Formation	123	945	-67	3																		58	58	58	58	58	58	58	58	58	58	58	58														
5	Superstructure Works	120	945	-67	3																								56	56	56	56	56	56	56	56	56	56	56	56								
6	Drainage & Other Works	114	945	-67	3																															50	50	50	50	50	50	50	50	50	50	50	50	
	Predicted Noise Level during Daytime Period, dB(A)					67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	68	68	58	58	58	58	60	60	60	60	60	60	56	57	57	57	57	57	50	50	50	50	50	50	50	68

Notes:

[1] Distance Correction for PMEs = 10*log(2*PI*r^2)

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E5-3d Construction Airborne Noise Impact Assessment - Mitigated

NSR: N4 Village house at Tin Sam

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	112	115	-49	3	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66																								
2	Road Improvement Works Phase 2	112	380	-60	3	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55																								
3	Road Improvement Works Phase 3	112	980	-68	3	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47																								
II	**Development Site**																																															
4	Site Formation	123	1330	-70	3																		55	55	55	55	55	55	55	55	55	55	55	55														
5	Superstructure Works	120	1330	-70	3																								53	53	53	53	53	53	53	53	53	53	53	53								
6	Drainage & Other Works	114	1330	-70	3																															47	47	47	47	47	47	47	47	47	47	47	47	
	Predicted Noise Level during Daytime Period, dB(A)					66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	67	67	55	55	55	55	57	57	57	57	57	57	53	54	54	54	54	54	47	47	47	47	47	47	47	67

Notes:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E5-3e ***Construction Airborne Noise Impact Assessment - Mitigated***

NSR: N5 Ha Hang Government Staff Quarters

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	112	65	-44	3	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71																								
2	Road Improvement Works Phase 2	112	225	-55	3	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60																								
3	Road Improvement Works Phase 3	112	885	-67	3	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48																								
II	**Development Site**																																															
4	Site Formation	123	1225	-70	3																		56	56	56	56	56	56	56	56	56	56	56	56														
5	Superstructure Works	120	1225	-70	3																								54	54	54	54	54	54	54	54	54	54	54	54								
6	Drainage & Other Works	114	1225	-70	3																															47	47	47	47	47	47	47	47	47	47	47	47	
	Predicted Noise Level during Daytime Period, dB(A)					71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	56	56	56	56	58	58	58	58	58	58	54	55	55	55	55	55	47	47	47	47	47	47	47	71

Notes:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

<u>Annex E5-3f</u> ***<u>Construction Airborne Noise Impact Assessment - Mitigated</u>***

NSR: V1 NSR at Village Zone

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	112	50	-42	3	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73																								
2	Road Improvement Works Phase 2	112	520	-62	3	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52																								
3	Road Improvement Works Phase 3	112	1095	-69	3	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46																								
II	**Development Site**																																															
4	Site Formation	123	1435	-71	3																		54	54	54	54	54	54	54	54	54	54	54	54														
5	Superstructure Works	120	1435	-71	3																								52	52	52	52	52	52	52	52	52	52	52	52							
6	Drainage & Other Works	114	1435	-71	3																															46	46	46	46	46	46	46	46	46	46	46	46	
	Predicted Noise Level during Daytime Period, dB(A)					73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	54	54	54	54	56	56	56	56	56	56	52	53	53	53	53	53	46	46	46	46	46	46	46	73

Notes:

[1] Distance Correction for PMEs = 10*log(2*PI*r^2)

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E5-3g ***Construction Airborne Noise Impact Assessment - Mitigated***

NSR: V2 NSR at Village Zone

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	110	30	-38	3	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75																								
2	Road Improvement Works Phase 2	112	370	-59	3	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55																								
3	Road Improvement Works Phase 3	112	995	-68	3	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47																								
II	**Development Site**																																															
4	Site Formation	123	1360	-71	3																		55	55	55	55	55	55	55	55	55	55	55	55														
5	Superstructure Works	120	1360	-71	3																								53	53	53	53	53	53	53	53	53	53	53	53								
6	Drainage & Other Works	114	1360	-71	3																															46	46	46	46	46	46	46	46	46	46	46	46	
	Predicted Noise Level during Daytime Period, dB(A)					75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	55	55	55	55	57	57	57	57	57	57	53	54	54	54	54	54	46	46	46	46	46	46	46	75

Notes:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

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

Pilot Project for Public-Private Partnership Conservation Scheme at Sha Lo Tung Valley

Annex E5-3h Construction Airborne Noise Impact Assessment - Mitigated

NSR: V3 NSR at Village Zone (Lei Uk)

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A)) [2]																																										Max. CNL dB(A)
						Year 1												Year 2												Year 3												Year 4						
						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
I	**Sha Lo Tung Road Improvement**																																															
1	Road Improvement Works Phase 1	112	1550	-72	3	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43																								
2	Road Improvement Works Phase 2	112	895	-67	3	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48																								
3	Road Improvement Works Phase 3	112	400	-60	3	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55																								
II	**Development Site**																																															
4	Site Formation	123	323	-58	3																		67	67	67	67	67	67	67	67	67	67	67	67														
5	Superstructure Works	120	323	-58	3																								65	65	65	65	65	65	65	65	65	65	65	65								
6	Drainage & Other Works	114	323	-58	3																															59	59	59	59	59	59	59	59	59	59	59	59	
	Predicted Noise Level during Daytime Period, dB(A)					56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	68	68	67	67	67	67	69	69	69	69	69	69	65	66	66	66	66	66	59	59	59	59	59	59	59	69

Notes:

[1] Distance Correction for PMEs = 10*log(2*PI*r^2)

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