

Annex 4B

## Detailed Calculations of Construction Noise

Table 4B-1 Predicted Noise Levels (No Mitigation Measures)

Construction Activity	SWL	Predicted Noise Levels														
		Mui Kong Village	Tai Ching Cheung	Tai Ching Cheung	LCK Reception Centre Staff Quarters	LCK Hospital	School development at the old Lai Chi Kok amusement park	Housing development at the old Lai Chi Kok amusement park	Public Library 5 (Block 9)	Mel Foo Sun Chuen, Phase 6 (Block 9)	Mel Foo Sun Chuen, Phase 4 (Block 113)	Haling Wong TT	Bamboo Villa	Pinehill	New Residential Development	
		N1	N2	N3	N6	N7 <sup>iii</sup>	N8 <sup>d</sup>	N9 <sup>h</sup>	N10	N11	N12	N13	N14	N15	N16	N17
Ching Cheung Road Interchange	122	0	67	71	67	71	0	70	81	77	77	0	0	0	0	0
Substructure	121	0	67	71	67	71	0	69	80	77	76	0	0	0	0	0
Superstructure	118	0	62	66	62	66	73	64	75	72	71	0	0	0	0	0
Road Pavement	125	78	75	71	0	0	0	0	0	0	0	0	0	0	0	0
Preparatory Works	128	81	78	73	0	0	0	0	0	0	0	0	0	0	0	0
Earthworks excavation	118	69	66	62	0	0	0	0	0	0	0	0	0	0	0	0
Road pavement	122	72	71	72	0	0	0	0	0	0	0	0	0	0	0	0
Substructure	121	72	71	74	0	0	0	0	0	0	0	0	0	0	0	0
Superstructure	118	67	66	69	0	0	0	0	0	0	0	0	0	0	0	0
Road Pavement	122	0	0	71	91	72	0	0	0	0	65	69	72	0	0	0
Substructure	121	0	0	72	86	72	0	0	0	0	65	69	72	0	0	0
Superstructure	116	0	0	66	80	67	0	0	0	0	60	64	67	0	0	0
Road pavement and finishes	125	68	65	0	0	0	0	0	0	0	0	0	0	0	0	0
Preparatory Works	131	74	71	0	0	0	0	0	0	0	0	0	0	0	0	0
Port construction	122	65	62	0	0	0	0	0	0	0	0	0	0	0	0	0
Tunnel excavation	128	69	67	0	0	0	0	0	0	0	0	0	0	0	0	0
Portal building construction	128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Removal of spoil	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ventilation building foundation	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Superstructure														78	84	85
														75	84	84
														68	76	77

Note:  
 ii. N8 will not be occupied until April 2003  
 iii. The daytime construction noise criterion for N7 is 65dB(A)<sub>1eq,20min</sub>  
 iv. 10 dB(A) screening correction

Table 4B-2 Predicted Noise Levels (Mitigation Option 1 - using quiet plant)

Construction Activity	Predicted Noise Levels															
	SWL	Miu Kong Village N1	Tai Ching Cheung N2	Tai Ching Cheung N3	LCK Reception Centre Staff Quarters N6	LCK Hospital N7 <sup>a</sup>	School development at the old Lai Chi Kok amusement park N8 <sup>a</sup>	Housing development at the old Lai Chi Kok amusement park N9 <sup>a</sup>	Public Library (Block 9) N10	Mai Foo Sun Chuen, Phase 5 (Block 9) N11	Mai Foo Sun Chuen, Phase 6 (Block 9) N12	Mai Foo Sun Chuen, Phase 4 (Block 13) N13	Haking Wong TT N14	Bamboo Villa Pinehill N15	New Residential Development N16	N17
Ching Cheung Road Interchange	115	0	60	64	60	64	0	63	74	70	0	0	0	0	0	0
Substructure	114	0	60	64	60	64	0	62	73	69	0	0	0	0	0	0
Road Pavement	113	0	58	62	58	63	70	80	72	68	0	0	0	0	0	0
Butterfly Valley	118	71	68	64	0	0	0	0	0	0	0	0	0	0	0	0
Preparatory Works	127	80	76	72	0	0	0	0	0	0	0	0	0	0	0	0
Earthworks excavation	116	69	66	62	0	0	0	0	0	0	0	0	0	0	0	0
Road pavement	115	65	64	65	0	0	0	0	0	0	0	0	0	0	0	0
Substructure	114	65	64	67	0	0	0	0	0	0	0	0	0	0	0	0
Superstructure	116	67	66	69	0	0	0	0	0	0	0	0	0	0	0	0
Road Pavement	115	0	0	64	64	65	0	0	0	0	0	0	0	0	0	0
Substructure	114	0	0	65	79	65	0	0	0	0	58	65	0	0	0	0
Superstructure	113	0	0	63	77	63	0	0	0	0	58	65	0	0	0	0
Road pavement and finishes	125	68	65	0	0	0	0	0	0	0	57	64	0	0	0	0
Preparatory Works	131	74	71	0	0	0	0	0	0	0	0	0	0	0	0	0
Portal construction	122	65	62	0	0	0	0	0	0	0	0	0	0	0	0	0
Tunnel excavation	128	69	67	0	0	0	0	0	0	0	0	0	0	0	0	0
Portal building construction	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Removal of spoil	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ventilation building foundation	113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Superstructure														69	78	78
														67	76	77
														80	68	69

Note:  
i. N8 will not be occupied until April 2003  
ii. The daytime construction noise criterion for N7 is 65dB(A)<sub>Leq,30min</sub>, iv 10 dB(A) screening correction

Table 4B-3 Predicted Noise Levels (Mitigation Option 2 - using of quiet plant and limiting no. of plant)

Construction Activity	Predicted Noise Levels														
	Miu Kong Village	Tai Cheung	Tai Cheung	LCK Reception Centre Staff Quarters	LCK Hospital	School development at the old Lai Chi Kok amusement park	Housing development at the old Lai Chi Kok amusement park	Public Library (Block 9)	Mai Foo Sun Chuen, Phase 5 (Block 9)	Mai Foo Sun Chuen, Phase 8 (Block 9)	Mai Foo Sun Chuen, Phase 4 (Block 113)	Haking Wong TT	Bamboo Villa	Pinehill	New Residential Development
	N1	N2	N3	N6	N7	N8 <sup>i</sup>	N9 <sup>v</sup>	N10	N11	N12	N13	N14	N15	N16	N17
	SWL														
Ching Cheung Road Interchange	114	0	59	63	63	63	62	73	70	69	0	0	0	0	0
Substructure	111	0	57	61	57	61	59	70	67	66	0	0	0	0	0
Road Pavement	113	0	58	62	58	70	60	72	68	67	0	0	0	0	0
Butterfly Valley	118	71	68	64	0	0	0	0	0	0	0	0	0	0	0
Preparatory Works	124	77	73	69	0	0	0	0	0	0	0	0	0	0	0
Earthworks excavation	116	69	66	62	0	0	0	0	0	0	0	0	0	0	0
Road pavement	115	65	64	65	0	0	0	0	0	0	0	0	0	0	0
Mainline Viaduct at Butterfly Valley	114	65	64	67	0	0	0	0	0	0	0	0	0	0	0
Substructure	116	67	66	69	0	0	0	0	0	0	0	0	0	0	0
Road Pavement	114	0	0	63	63	64	0	0	0	57	61	65	0	0	0
Substructure	111	0	0	62	76	62	0	0	0	55	59	62	0	0	0
Road pavement and finishes	111	0	0	61	75	62	0	0	0	55	58	62	0	0	0
Preparatory Works	125	68	65	0	0	0	0	0	0	0	0	0	0	0	0
Portal construction	131	74	71	0	0	0	0	0	0	0	0	0	0	0	0
Tunnel excavation	122	65	62	0	0	0	0	0	0	0	0	0	0	0	0
Portal building construction	128	69	67	0	0	0	0	0	0	0	0	0	0	0	0
Eagle's Nest Tunnel South Portal Building	115	0	0	0	0	0	0	0	0	0	0	0	0	63	72
Removal of spoil	112	0	0	0	0	0	0	0	0	0	0	0	0	60	69
Mid Ventilation Building	113	0	0	0	0	0	0	0	0	0	0	0	0	60	69
Ventilation building foundation															
Superstructure															

Note:  
i. N8 will not be occupied until April 2003  
ii. The daytime construction noise criterion for N7 is 65dB(A)<sub>1hr,30m</sub>  
iv. 10 dB(A) screening correction

Table 4B-4 Predicted Noise Levels (Mitigation Option 3 - using quiet plant, limiting no. of plant and erection of movable barriers)

Construction Activity	Predicted Noise Levels														
	Miu Kung Village	Tai Cheung Cheung	Tai Cheung Cheung	LCK Reception Centre Staff Quarters	LCK Hospital	School development at the old Lai Chi Kok amusement park	Housing development at the old Lai Chi Kok amusement park	Public Library (Block 9)	Mei Foo Sun Chuen, Phase 5 (Block 9)	Mei Foo Sun Chuen, Phase 4 (Block 9)	Mei Foo Sun Chuen, Phase 4 (Block 113)	Hai King Wong TT	Bamboo Villa	Phahill	New Residential Development
	N1	N2	N3	N6	N7 <sup>ii</sup>	N8 <sup>i</sup>	N9 <sup>v</sup>	N10	N11	N12	N13	N14	N15	N16	N17
Ching Cheung Road Interchange	112	57	61	58	62	0	60	72	66	67	0	0	0	0	0
Substructure	111	57	61	57	61	0	59	70	67	66	0	0	0	0	0
Superstructure	113	0	58	62	63	70	60	72	68	67	0	0	0	0	0
Road Pavement	118	71	68	0	0	0	0	0	0	0	0	0	0	0	0
Preparatory Works	119	73	69	65	0	0	0	0	0	0	0	0	0	0	0
Earthworks excavation	116	69	66	62	0	0	0	0	0	0	0	0	0	0	0
Road pavement	115	65	64	65	0	0	0	0	0	0	0	0	0	0	0
Substructure	114	65	64	67	0	0	0	0	0	0	0	0	0	0	0
Superstructure	116	67	66	69	0	0	0	0	0	0	0	0	0	0	0
Road Pavement	112	0	0	62	63	0	60	0	0	56	59	63	0	0	0
Substructure	111	0	0	62	62	0	60	0	0	55	59	62	0	0	0
Superstructure	111	0	0	61	62	0	60	0	0	55	58	62	0	0	0
Road pavement and finishes	125	68	65	0	0	0	0	0	0	0	0	0	0	0	0
Preparatory Works	131	74	71	0	0	0	0	0	0	0	0	0	0	0	0
Portal construction	122	65	62	0	0	0	0	0	0	0	0	0	0	0	0
Tunnel excavation	128	69	67	0	0	0	0	0	0	0	0	0	0	0	0
Portal building construction	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Removal of spoil	112	0	0	0	0	0	0	0	0	0	0	0	63	72	72
Ventilation building foundation	113	0	0	0	0	0	0	0	0	0	0	0	80	69	69
Superstructure													60	69	69

Note:  
 i. N8 will not be occupied until April 2003  
 ii. The daytime construction noise criterion for N7 is 65dB(A)<sub>Leq,30min</sub>  
 iv. 10 dB(A) screening correction

Table 4B-5 Distances of the NSRs from various construction activities

Construction Activity	Miu Kong Village	Tai Ching Cheung	Tai Ching Cheung	LCK Reception Centre Staff Quarters LCK Hospital	School development at the old Lai Chi Kok amusement park	Housing development at the old Lai Chi Kok amusement park	Public Library	Mei Foo Sun Chuen, Phase 5 (Block 9)	Mei Foo Sun Chuen, Phase 6 (Block 9)	Mei Foo Sun Chuen, Phase 4 (Block 113)	Haking Wong TT	Bamboo Villa	Pinehill	New Residential Development	
	N1	N2	N3	N6	N7 <sup>iii</sup>	N8 <sup>ii</sup>	N9 <sup>iv</sup>	N10	N11	N12	N13	N14	N15	N16	N17
Ching Cheung Road Interchange															
Substructure	N/A	310	195	300	185	N/A	70	60	90	100	N/A	N/A	N/A	N/A	N/A
Superstructure	N/A	305	195	300	185	80	75	65	95	105	N/A	N/A	N/A	N/A	N/A
Road Pavement	N/A	305	195	300	185	80	75	65	95	105	N/A	N/A	N/A	N/A	N/A
Preparatory Works	125	185	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Earthworks excavation	125	185	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Road pavement	125	185	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Substructure	175	195	170	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Superstructure	165	185	135	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Road Pavement	165	185	135	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Substructure	N/A	N/A	185	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Superstructure	N/A	N/A	175	N/A	170	N/A	N/A	N/A	N/A	370	245	160	N/A	N/A	N/A
Road pavement and finishes	N/A	N/A	175	N/A	170	N/A	N/A	N/A	N/A	370	245	160	N/A	N/A	N/A
Preparatory Works	N/A	N/A	175	N/A	170	N/A	N/A	N/A	N/A	370	245	160	N/A	N/A	N/A
Portal construction	420	560	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tunnel excavation	420	560	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Portal building construction	465	605	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Removal of spoil	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ventilation building foundation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Superstructure	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	230	85	80
													230	85	80
													230	85	80

Note:

N/A: denote Not Applicable

ii. N8 will not be occupied until April 2003

iii. The daytime construction noise criterion for N7 is 65dB(A)<sub>Leq,30min</sub>

iv. 10 dB(A) screening correction