

Annex C

Noise Assessment - Supporting Information

Annex C1

Background Noise
Measurement Results at
Peng Chau & Discovery Bay

Measurement Location: Sea Crest Villa, Peng Chau (facing Penny's Bay)

Duration of measurement: 5 mins

Table C1.1a - Daytime Noise Measurement Results

		Day-time			
		Weekday		Weekend	
Date of Measurement:		25 Nov 1999 (Thursday)		4 Dec 1999 (Saturday)	
Record no.	Record time	L ₉₀	L _{eq}	L ₉₀	L _{eq}
1	09:00	44.5	49.3	44.5	46.7
2	09:30	46.0	50.3	44.6	51.0
3	10:00	45.5	48.3	44.5	50.1
4	10:30	45.5	51.8	43.0	47.1
5	11:00	46.5	49.5	43.5	48.1
6	11:30	45.0	46.9	43.5	47.1
7	12:00	43.5	46.2	45.0	50.5
8	12:30	44.0	47.9	45.0	48.6
9	13:00	44.5	49.8	43.0	46.0
10	13:30	43.0	47.3	44.0	48.4
11	14:00	46.5	52.0	44.4	50.5
12	14:30	46.5	50.0	44.0	45.7
13	15:00	42.5	45.1	42.0	44.3
14	15:30	41.5	53.1	46.0	48.9
15	16:00	48.5	54.4	43.5	50.6
16	16:30	45.0	51.9	45.0	51.8
17	17:00	45.0	50.0	44.8	49.9
18	17:30	47.5	50.7	44.4	49.7
19	18:00	45.0	51.1	45.0	51.5
20	18:30	43.0	52.3	44.5	50.0
Average		45.3	50.5	44.3	49.3

Table C1.1b - Night-time Noise Measurement Results

		Evening			
		Weekday		Weekend	
Date of Measurement:		25 Nov 1999 (Thursday)		20 Nov 1999 (Sunday)	
Record no.	Record time	L ₉₀	L _{eq}	L ₉₀	L _{eq}
1	19:00	45.0	47.5	45.0	49.8
2	19:10	44.0	52.0	45.0	49.1
3	19:20	44.0	52.7	45.5	48.7
4	19:30	44.5	48.6	44.5	52.0
5	19:40	43.5	47.7	44.0	50.6
6	19:50	45.0	48.7	43.0	46.7
7	20:00	46.0	49.9	43.5	48.9
8	20:10	44.5	50.2	43.0	51.9
9	20:20	46.5	50.1	44.5	51.4
10	20:30	43.5	49.0	44.5	49.0
11	20:40	43.0	45.4	46.0	50.4
12	20:50	43.0	46.3	45.0	51.6
13	21:00	44.0	50.1	44.0	51.1
14	21:10	44.5	51.0	45.5	47.9
15	21:20	43.0	47.4	43.0	45.1
16	21:30	43.5	48.7	44.0	52.3
17	21:40	43.0	48.4	46.0	53.0
18	21:50	45.0	49.6	43.5	49.3
19	22:00	45.0	47.3	42.0	44.4
20	22:10	44.5	47.1	44.5	51.0
21	22:20	44.5	46.8	41.5	44.0
22	22:30	44.0	47.6	45.0	48.9
23	22:40	45.0	47.8	45.5	48.9
24	22:50	43.5	45.9	43.0	47.7
Average		44.3	49.0	44.4	49.9

Measurement Location: Hai Kam Tsui, Discovery Bay (facing Penny's Bay)

Duration of measurement: 5 mins

Table C1.2a - Daytime Noise Measurement Results

		Day-time			
		Weekday		Weekend	
Date of Measurement:		8 Dec 1999 (Wednesday)		30 Jan 2000 (Sunday)	
Record no.	Record time	L ₉₀	L _{eq}	L ₉₀	L _{eq}
1	09:00	47.0	45.6	43.0	55.3
2	09:30	42.3	51.0	40.5	47.0
3	10:00	45.6	53.2	40.5	49.9
4	10:30	44.2	49.7	40.5	43.0
5	11:00	43.6	48.0	41.0	55.7
6	11:30	48.0	54.6	43.5	54.9
7	12:00	42.8	49.0	41.5	51.0
8	12:30	42.2	50.4	46.5	54.6
9	13:00	43.0	50.1	44.0	55.3
10	13:30	42.7	45.3	41.5	54.7
11	14:00	44.0	49.9	41.5	52.5
12	14:30	47.8	55.2	41.0	45.7
13	15:00	46.5	53.6	44.0	55.1
14	15:30	43.0	44.7	42.0	44.4
15	16:00	44.7	48.9	44.0	51.2
16	16:30	43.1	46.3	49.0	59.3
17	17:00	50.5	55.2	45.0	52.0
18	17:30	50.5	56.4	48.0	55.2
19	18:00	51.0	56.1	47.0	55.3
20	18:30	51.0	57.2	44.5	56.5
Average		46.8	52.6	44.2	54.0

Table C1.2b - Night-time Noise Measurement Results

		Evening			
		Weekday		Weekend	
Date of Measurement:		31 Jan 2000 (Monday)		30 Jan 2000 (Sunday)	
Record no.	Record time	L ₉₀	L _{eq}	L ₉₀	L _{eq}
1	19:00	48.0	53.8	44.0	51.9
2	19:10	47.0	56.7	44.5	51.9
3	19:20	47.5	52.6	44.5	54.0
4	19:30	48.0	52.9	44.5	50.9
5	19:40	48.0	53.5	44.5	50.0
6	19:50	47.5	53.0	43.5	50.8
7	20:00	48.5	54.0	43.0	50.8
8	20:10	48.5	53.7	42.0	50.0
9	20:20	48.0	56.3	43.5	51.4
10	20:30	48.0	52.1	42.0	46.1
11	20:40	48.5	53.4	43.0	49.5
12	20:50	46.3	51.6	42.5	55.5
13	21:00	47.5	52.4	43.5	49.8
14	21:10	48.5	52.9	41.0	49.1
15	21:20	48.5	52.6	43.0	51.1
16	21:30	49.0	53.0	40.5	43.5
17	21:40	49.0	52.9	42.0	50.7
18	21:50	49.5	53.7	43.5	52.7
19	22:00	48.5	54.6	42.5	51.9
20	22:10	47.0	52.8	41.5	52.2
21	22:20	47.5	53.2	43.5	53.3
22	22:30	46.5	51.8	43.5	48.2
23	22:40	46.5	52.4	41.5	44.0
24	22:50	46.0	52.2	43.0	46.8
Average		47.9	53.4	43.1	51.0

Annex C2

Construction Noise Impact Assessment - Plant Inventory

Table C2.1 - Plant Inventory (Unmitigated)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Phase 1								
<i>Reclamation & Excavation</i>								
A1	A1	Slope protection in Penny's Bay West	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker >35kg	CNP026	114	6	8	122
			Concrete truck (mixer)	CNP044	109	3	5	114
			Dump truck	CNP067	117	3	5	122
			Backhoe	CNP081	112	3	5	117
			Sub-total					126
A2	A2	Dredging at Theme Park Phase 1	Grab dredger	CNP063	112	1	0	112
			TS Dredger	By SWHK	109	1	0	109
			Sub-total					114
A3	A3	Placement of sloping/vertical seawall at Theme Park Phase 1	Grab dredger	CNP063	112	2	3	115
			Derrick lighter	CNP061	104	6	8	112
			Tugboat	CNP221	110	10	10	120
			Hopper barge/ Pelican barge/ Barge	CNP061	104	4	6	110
			Sub-total					122
A4	A4	Filling at Theme Park Phase 1	Grab Dredger	CNP063	112	6	8	120
			TS Dredger	By SWHK	109	4	6	115
			CS Dredger	By SWHK	104	2	3	107
			Derrick lighter	CNP061	104	4	6	110
			Dozer	CNP030	115	8	9	124
			Dump truck	CNP067	117	20	13	130
			Tugboat	CNP221	110	12	11	121
			Loading shovel (excavator)	CNP081	112	12	11	123
			Hopper barge/ Pelican barge/ Barge	CNP061	104	24	14	118
			Crane/vibrocompaction	By SWHK	112	8	9	121
			Land drain rig (compressor)	CNP003	104	4	6	110
			Maine drain rig (compressor)	CNP003	104	4	6	110
			Sub-total					133
A5	A5	Surcharge at Theme Park Phase 1	Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	10	10	127
			Loading shovel (excavator)	CNP081	112	5	7	119
			Sub-total					128
A6	A6	Demolition part of Cheoy Lee	Dump truck	CNP067	117	1	0	117
			Excavator/Loader	CNP081	112	1	0	112
			Backhoe	CNP081	112	3	5	117
			Mobile crane	CNP048	112	2	3	115
			Sub-total					122
A7	A7	Ground treatment	Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Sub-total					119
A8	A8	Excavation to tie in at existing Yam O Interchange	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	5	7	121
			Dump truck	CNP067	117	10	10	127
			Excavator/Loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	2	3	115
			Sub-total					128
A9	A9	Blasting	Drilling Rigs	Tab C11/2	112	6	8	120
			Sub-total					120
A10	A10	Slope protection in Yam O Section	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Handheld breaker >35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Sub-total					121
A11	A11	Slope protection in Penny's Bay North Adjac	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	4	6	120
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Sub-total					124
A12	A12	Dredging sloping seawall at Yam O PTI	Grab dredger	CNP063	112	1	0	112
			Tugboat	CNP221	110	1	0	110
			Sand barge	CNP061	104	1	0	104
			Sub-total					115
A13	A13	Placement of sloping seawall at Yam O PTI	Grab dredger	CNP063	112	1	0	112
			Derrick lighter	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Sand barge	CNP061	104	1	0	104
			Sub-total					115

Table C2.1 - Plant Inventory (Unmitigated)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum			
A14	A14	Filling at Yam O PT1	Grab dredger	CNP063	112	1	0	112			
			Dozer	CNP030	115	1	0	115			
			Dump truck	CNP067	117	3	5	122			
			Tugboat	CNP221	110	2	3	113			
			Loading shovel (excavator)	CNP081	112	1	0	112			
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107			
			Land drain rig (compressor)	CNP003	104	1	0	104			
			Maine drain rig (compressor)	CNP003	104	1	0	104			
			Sand barge	CNP061	104	7	8	112			
				Sub-total						124	
A15	A15	Surcharge at Yam O PT1	Dozer	CNP030	115	2	3	118			
			Dump truck	CNP067	117	3	5	122			
			Loading shovel (excavator)	CNP081	112	1	0	112			
				Sub-total					124		
Transport Infrastructure											
B16	B20	Temporary Road Surfacing/Construction at grade:: Temporary Access Road	Compressor > 30m ³ /min	CNP003	104	1	0	104			
			Dump truck	CNP067	117	2	3	120			
			Backhoe	CNP081	112	2	3	115			
			Grader	CNP104	113	1	0	113			
			Tarmac paver	CNP004	109	1	0	109			
			Tarmac truck	CNP067	117	2	3	120			
			Roller	CNP185	108	2	3	111			
				Sub-total					124		
			B17	B21	Road Structures including (Piling & Foundations plus superstructure) : CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m ³ /min	CNP003	104	2	3	107
						Handheld breaker>35kg	CNP026	114	4	6	120
Concrete truck (mixer)	CNP044	109				2	3	112			
Backhoe	CNP081	112				2	3	115			
Mobile Crane	CNP048	112				2	3	115			
Generator	CNP101	108				2	3	111			
Bored piler,oscillator	CNP165	115				1	0	115			
	Sub-total								124		
B18	B22	Road Surfacing / Construction at grade : CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m ³ /min	CNP003	104	2	3	107			
			Dump truck	CNP067	117	1	0	117			
			Backhoe	CNP081	112	1	0	112			
			Grader	CNP104	113	2	3	116			
			Tarmac paver	CNP004	109	1	0	109			
			Tarmac truck	CNP067	117	2	3	120			
			Roller	CNP185	108	2	3	111			
				Sub-total					124		
B19	B23	Road Surfacing / Construction (elevated section including decking): CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m ³ /min	CNP003	104	2	3	107			
			Mobile Crane	CNP048	112	2	3	115			
			Poker vibrator	CNP170	113	4	6	119			
			Tarmac paver	CNP004	109	1	0	109			
			Tarmac truck	CNP067	117	2	3	120			
			Roller	CNP185	108	2	3	111			
			Launching girder (winch)	CNP263	102	1	0	102			
				Sub-total					124		
B20	B24	Road Structures including (Piling & Foundations plus superstructure) : Road P2 Northshore Development to Theme Park West	Compressor > 30m ³ /min	CNP003	104	2	3	107			
			Handheld breaker>35kg	CNP026	114	4	6	120			
			Concrete truck (mixer)	CNP044	109	4	6	115			
			Backhoe	CNP081	112	2	3	115			
			Mobile crane	CNP048	112	2	3	115			
			Generator	CNP101	108	1	0	108			
			Poker vibrator	CNP170	113	4	6	119			
			Bored piler,oscillator	CNP165	115	1	0	115			
				Sub-total					125		
			B21	B25	Road Surfacing / Construction at grade incl. roadside buffers : Road P2 Northshore Development to Theme Park West	Compressor > 30m ³ /min	CNP003	104	2	3	107
Concrete truck (mixer)	CNP044	109				2	3	112			
Dump truck	CNP067	117				2	3	120			
Backhoe	CNP081	112				3	5	117			
Poker vibrator	CNP170	113				4	6	119			
Grader	CNP104	113				1	0	113			
Tarmac paver	CNP004	109				1	0	109			
Tarmac truck	CNP067	117				2	3	120			
Roller	CNP185	108				1	0	108			
	Sub-total								126		

Table C2.1 - Plant Inventory (Unmitigated)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum		
B22	B26	Road Surfacing / Construction (elevated section including decking): Road P2 Northshore Development to Theme Park West	Concrete truck (mixer)	CNP044	109	4	6	115		
			Mobile crane	CNP048	112	2	3	115		
			Poker vibrator	CNP170	113	6	8	121		
			Tarmac paver	CNP004	109	1	0	109		
			Tarmac truck	CNP067	117	2	3	120		
			Roller	CNP185	108	2	3	111		
			Sub-total							125
B23	B27	Road Surfacing / Construction at grade incl. roadside buffers: Road D1 Theme Park West Roundabout to Theme Park	Compressor > 30m ³ /min	CNP003	104	2	3	107		
			Concrete truck (mixer)	CNP044	109	2	3	112		
			Dump truck	CNP067	117	2	3	120		
			Backhoe	CNP081	112	3	5	117		
			Poker vibrator	CNP170	113	4	6	119		
			Grader	CNP104	113	1	0	113		
			Tarmac paver	CNP004	109	1	0	109		
			Tarmac truck	CNP067	117	2	3	120		
			Roller	CNP185	108	2	3	111		
			Sub-total							126
			B24	B28	Road Surfacing / Construction at grade : Acces Road at Yam O i.e from road P2, to Yam O Rail Station	Compressor > 30m ³ /min	CNP003	104	2	3
Concrete truck (mixer)	CNP044	109				2	3	112		
Dump truck	CNP067	117				1	0	117		
Backhoe	CNP081	112				2	3	115		
Poker vibrator	CNP170	113				4	6	119		
Grader	CNP104	113				1	0	113		
Tarmac paver	CNP004	109				1	0	109		
Tarmac truck	CNP067	117				2	3	120		
Roller	CNP185	108				2	3	111		
Sub-total										125
B25	B29	Central pedestrian walkway surfacing / construction: Approx. Middle of proposed park i.e boundary between Phase 1 and Phase 2 expansion				Compressor > 30m ³ /min	CNP003	104	2	3
			Dump truck	CNP067	117	1	0	117		
			Backhoe	CNP081	112	2	3	115		
			Grader	CNP104	113	1	0	113		
			Tarmac paver	CNP004	109	1	0	109		
			Tarmac truck	CNP067	117	2	3	120		
			Compactor	CNP050	105	2	3	108		
Sub-total							123			
C26	C31	Services Infrastructure Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m ³ /min	CNP003	104	2	3	107		
			Concrete truck (mixer)	CNP044	109	1	0	109		
			Dump truck	CNP067	117	2	3	120		
			Backhoe	CNP081	112	2	3	115		
			Poker vibrator	CNP170	113	2	3	116		
Sub-total							123			
C27	C32	Excavation of lake	Dump truck	CNP067	117	10	10	127		
			Backhoe	CNP081	112	2	3	115		
			Sub-total						127	
C28	C33	Placement of lake membrane plus associated waterworks to tie into (ability to tap from) adjacent drainage system	Compressor > 30m ³ /min	CNP003	104	1	0	104		
			Concrete truck (mixer)	CNP044	109	1	0	109		
			Dump truck	CNP067	117	1	0	117		
			Backhoe	CNP081	112	2	3	115		
			Mobile crane	CNP048	112	1	0	112		
			Poker vibrator	CNP170	113	2	3	116		
Sub-total							122			
C29	C34	Lake de-silting and pumping facilities	Compressor > 30m ³ /min	CNP003	104	1	0	104		
			Concrete truck (mixer)	CNP044	109	2	3	112		
			Dump truck	CNP067	117	1	0	117		
			Backhoe	CNP081	112	1	0	112		
			Mobile crane	CNP048	112	1	0	112		
			Poker vibrator	CNP170	113	2	3	116		
Sub-total							121			
C33	C38	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m ³ /min	CNP003	104	2	3	107		
			Handheld breaker >35kg	CNP026	114	2	3	117		
			Concrete truck (mixer)	CNP044	109	1	0	109		
			Dump truck	CNP067	117	2	3	120		
			Backhoe	CNP081	112	2	3	115		
			Mobile crane	CNP048	112	1	0	112		
			Poker vibrator	CNP170	113	2	3	116		
			Lorry	CNP141	112	2	3	115		

Table C2.1 - Plant Inventory (Unmitigated)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
Sub-total								125
C34	C39	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	1	0	112
			Sub-total					123
C35	C40	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Concrete truck (mixer)	CNP044	109	6	8	117
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	8	9	122
			Lorry	CNP141	112	2	3	115
			Sub-total					126
GIC Sites								
D36	D41	P.T.I at Yam O Station	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					124
D37	D42	P.T.I at Penny's Bay Station- Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					124
D38	D43	Public Parking in Penny's Bay Station - Phas	Backhoe	CNP081	112	2	3	115
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Compactor	CNP050	105	2	3	108
			Sub-total					122
D39	D44	Police Station in Penny's Bay Station - Phas	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					123
D40	D45	Fire Station in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					123
D41	D46	Utility Yard	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	2	3	116
			Sub-total					122
Phase 1 - Theme Park Development								
E43	E48	Theme Park Building/Attraction Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker>35kg	CNP026	114	11	10	124
			Concrete truck (mixer)	CNP044	109	20	13	122
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/ Loader	CNP081	112	8	9	121
			Backhoe	CNP081	112	4	6	118
			Mobile crane	CNP048	112	4	6	118
			Drilling rigs	Tab C11/2	112	8	9	121
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	4	6	119

Table C2.1 - Plant Inventory (Unmitigated)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Compactor	CNP050	105	3	5	110
			Water pump	CNP282	103	15	12	115
			Pan scrapers	CNP204	119	3	5	124
			Sub-total					132
E44	E49	Theme Park Building/Attraction Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	10	10	114
			Handheld breaker>35kg	CNP026	114	15	12	126
			Concrete truck (mixer)	CNP044	109	30	15	124
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/ Loader	CNP081	112	8	9	121
			Backhoe	CNP081	112	12	11	123
			Mobile crane	CNP048	112	12	11	123
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	118
			Compactor	CNP050	105	2	3	108
			Water pump	CNP282	103	15	12	115
			Tower crane	CNP049	95	10	10	105
			Bobcats	By WDI	114	20	13	127
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	20	13	126
			Sub-total					134
E45	E50	Theme Park Surfacing, Landscaping and Berms in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker>35kg	CNP026	114	3	5	119
			Concrete truck (mixer)	CNP044	109	8	9	118
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/ Loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	12	11	123
			Mobile crane	CNP048	112	4	6	118
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Compactor	CNP050	105	1	0	105
			Bobcats	By WDI	114	6	8	122
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	4	6	119
			Sub-total					131
E46	E51	Ferry Pier Substructure: piling/foundations in Penny's Bay Station- Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker>35kg	CNP026	114	3	5	119
			Concrete truck (mixer)	CNP044	109	2	3	112
			Derrick lighter plus crane	CNP061	104	1	0	104
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	2	3	120
			Tugboat	CNP221	110	2	3	113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0	104
			Mobile crane	CNP048	112	1	0	112
			Generator	CNP101	108	2	3	111
			Poker vibrator	CNP170	113	4	6	119
			Water pump	CNP282	103	6	8	111
			Lorry	CNP141	112	2	3	115
			Coring rig	CNP165	115	3	5	120
			Bobcats	By WDI	114	4	6	120
			Sub-total					123
E47	E52	Ferry Pier Superstructure: Precast decking and insitu infill in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Handheld breaker>35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	2	3	112
			Derrick Lighter plus crane	CNP061	104	1	0	104
			Tugboat	CNP221	110	1	0	110
			Hopper Barge/ Pelican Barge/ Barge	CNP061	104	1	0	104
			Mobile crane	CNP048	112	1	0	112
			Generator	CNP101	108	1	0	108
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	2	3	115
			Bobcats	By WDI	114	4	6	120
			Forklifts	By WDI	113	3	5	118
			Sub-total					126
E48	E53	Ferry Pier Building Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Handheld breaker>35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	2	3	115
			Generator	CNP101	108	2	3	111
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	2	3	115
			Bobcats	By WDI	114	2	3	117
			Sub-total					126

Table C2.1 - Plant Inventory (Unmitigated)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum	
E49	E54	Ferry Pier Building Superstructure in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3	107	
			Handheld breaker>35kg	CNP026	114	2	3	117	
			Concrete truck (mixer)	CNP044	109	2	3	112	
			Backhoe	CNP081	112	2	3	115	
			Mobile crane	CNP048	112	2	3	115	
			Generator	CNP101	108	2	3	111	
			Poker vibrator	CNP170	113	4	6	119	
			Lorry	CNP141	112	2	3	115	
			Bobcats	By WDI	114	2	3	117	
			Ditch Witch Trencher	By WDI	117	4	6	123	
				Sub-total					
E50	E55	Hotels Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	3	5	109	
			Handheld breaker>35kg	CNP026	114	10	10	124	
			Concrete truck (mixer)	CNP044	109	10	10	119	
			Dozer	CNP030	115	2	3	118	
			Dump truck	CNP067	117	4	6	123	
			Excavator/ Loader	CNP081	112	3	5	117	
			Backhoe	CNP081	112	3	5	117	
			Generator	CNP101	108	4	6	114	
			Lorry	CNP141	112	2	3	115	
			Grader	CNP104	113	2	3	116	
			Compactor	CNP050	105	2	3	108	
			Water pump	CNP282	103	4	6	109	
			Tower crane	CNP049	95	2	3	98	
			Bobcats	By WDI	114	4	6	120	
			Pan Scrapers	CNP204	119	2	3	122	
				Sub-total					130
			E51	E56	Hotels Superstructure in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	3
Handheld breaker>35kg	CNP026	114				10	10	124	
Concrete truck (mixer)	CNP044	109				20	13	122	
Dozer	CNP030	115				2	3	118	
Dump truck	CNP067	117				4	6	123	
Excavator/ Loader	CNP081	112				2	3	115	
Backhoe	CNP081	112				3	5	117	
Mobile crane	CNP048	112				2	3	115	
Generator	CNP101	108				4	6	114	
Lorry	CNP141	112				2	3	115	
Grader	CNP104	113				2	3	116	
Compactor	CNP050	105				2	3	108	
Tower crane	CNP049	95				3	5	100	
Bobcats	By WDI	114				20	13	127	
Ditch Witch Trencher	By WDI	117				3	5	122	
Forklifts	By WDI	113				20	13	126	
	Sub-total								133
E52		Water Recreation Centre - Foundation	Compressor > 30m ³ /min	CNP003	104	2	3	107	
			Handheld breaker>35kg	CNP026	114	2	3	117	
			Concrete truck (mixer)	CNP044	109	2	3	112	
			Dump truck	CNP067	117	2	3	120	
			Backhoe	CNP081	112	2	3	115	
			Mobile crane	CNP048	112	2	3	115	
			Vibratory piling rig	CNP164	115	1	0	115	
			Generator	CNP101	108	2	3	111	
			Poker vibrator	CNP170	113	4	6	119	
			Lorry	CNP141	112	2	3	115	
			Water pump	CNP282	103	2	3	106	
				Sub-total					125
			E53		Water Recreation Centre - Superstructure	Compressor > 30m ³ /min	CNP003	104	2
Handheld breaker>35kg	CNP026	114				2	3	117	
Concrete truck (mixer)	CNP044	109				2	3	112	
Backhoe	CNP081	112				2	3	115	
Mobile crane	CNP048	112				2	3	115	
Generator	CNP101	108				2	3	111	
Poker vibrator	CNP170	113				4	6	119	
Lorry	CNP141	112				2	3	115	
	Sub-total					124			
Phase 2		Reclamation & Excavation							
F61	F64	Slope Protection along southern boundary of TCT	Compressor > 30m ³ /min	CNP003	104	3	5	109	
			Handheld breaker>35kg	CNP026	114	6	8	122	
			Concrete truck (mixer)	CNP044	109	3	5	114	
			Dump truck	CNP067	117	3	5	122	
			Backhoe	CNP081	112	3	5	117	
	Sub-total					125			
F62	F65	Dredging for Theme Park phase 2	Grab dredger	CNP063	112	1	0	112	
				Sub-total				112	
F63	F66	Placement of seawall for Theme Park phase 2	Grab dredger	CNP063	112	1	0	112	

Table C2.1 - Plant Inventory (Unmitigated)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Derrick lighter	CNP061	104	2	3	107
			Tugboat	CNP221	110	4	6	116
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3	107
			Sub-total					118
F64	F67	Filling reclamation for Theme Park phase 2	Grab dredger	CNP063	112	2	3	115
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	5	7	124
			Tugboat	CNP221	110	3	5	115
			Loading shovel (excavator)	CNP081	112	2	3	115
			Hopper barge/ Pelican barge/ Barge	CNP061	104	3	5	109
			Crane/vibrocompaction	By SWHK	112	2	3	115
			Land drain rig (compressor)	CNP003	104	1	0	104
			Marine drain rig (compressor)	CNP003	104	1	0	104
			Sub-total					127
F65	F68	Surcharge placement for Theme Park phase	Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	8	9	126
			Loading shovel (excavator)	CNP081	112	2	3	115
			Sub-total					127
G94	G101	Road Surfacing / Construction at grade incl. roadside buffers:Road P2 Theme Park East Roundabout	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	3	5	117
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111
			Sub-total					125
G95	G102	Road Surfacing / Construction at grade incl. roadside buffers:Road D2 Theme Park East Roundabout to Theme Park	Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	3	5	117
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111
			Sub-total					125
G96	G103	Road Surfacing / Construction at grade incl. roadside buffers:Road P2 Theme Park East Roundabout to Pa Kwu Interchange	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	3	5	117
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Roller	CNP185	108	2	3	111
			Sub-total					125
Services Infrastructure								
G102	H109	Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Sub-total					122
G103	H110	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	2	3	116
			Lorry	CNP141	112	1	0	112
			Sub-total					122
G104	H111	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119
			Lorry	CNP141	112	1	0	112
			Sub-total					123
G105	H112	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	4	6	119

Table C2.1 - Plant Inventory (Unmitigated)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Lorry	CNP141	112	1	0	112
			Sub-total					124
GIC Sites								
I109	I116	P.T.I in Penny's Bay Station- Phase 2	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					125
I110	I117	Public Parking in Penny's Bay -Phase 2	Backhoe	CNP081	112	2	3	115
			Grader	CNP104	113	1	0	113
			Tarmac paver	CNP004	109	1	0	109
			Tarmac truck	CNP067	117	2	3	120
			Compactor	CNP050	105	2	3	108
			Sub-total					122
I111	I118	2nd Fire Staion in Penny's Bay	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	2	3	112
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	4	6	119
			Sub-total					123
I112	I119	Utility Yard in Penny's Bay - Phase 2	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dump truck	CNP067	117	1	0	117
			Backhoe	CNP081	112	1	0	112
			Mobile crane	CNP048	112	1	0	112
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	2	3	116
			Sub-total					122
Theme Park Development								
J117	J124	Theme Park Building/Attraction Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	CNP028	114	11	10	124
			Concrete truck (mixer)	CNP044	109	20	13	122
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/loader	CNP081	112	8	9	121
			Backhoe	CNP081	112	4	6	118
			Mobile crane	CNP048	112	4	6	118
			Drilling rig	Tab C11/2	112	8	9	121
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	4	6	119
			Compactor	CNP050	105	3	5	110
			Water pump	CNP282	103	15	12	115
			Pan Scrapers	CNP204	119	3	5	124
			Sub-total					122
J118	J125	Theme Park Building/Attraction Construction	Compressor > 30m ³ /min	CNP003	104	10	10	114
			Handheld breaker >35kg	CNP028	114	15	12	126
			Concrete truck (mixer)	CNP044	109	30	15	124
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/loader	CNP081	112	8	9	121
			Backhoe	CNP081	112	12	11	123
			Mobile crane	CNP048	112	12	11	123
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Compactor	CNP050	105	2	3	108
			Water pump	CNP282	103	15	12	115
			Tower crane	CNP049	95	10	10	105
			Bobcats	By WDI	114	20	13	127
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	20	13	126
			Sub-total					134
J119	J126	Theme Park Surfacing, Landcaping and Berm	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	CNP028	114	3	5	119
			Concrete truck (mixer)	CNP044	109	8	9	118
			Dozer	CNP030	115	4	6	121
			Dump truck	CNP067	117	2	3	120
			Excavator/loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	12	11	123
			Mobile crane	CNP048	112	4	6	118
			Generator	CNP101	108	4	6	114
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Compactor	CNP050	105	1	0	105

Table C2.1 - Plant Inventory (Unmitigated)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Bobcats	By WDI	114	6	8	122
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	4	6	119
				Sub-total				131
J120	J131	Hotels Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	CNP026	114	12	11	125
			Concrete truck (mixer)	CNP044	109	12	11	120
			Dozer	CNP030	115	3	5	120
			Dump truck	CNP067	117	6	8	125
			Excavator/ Loader	CNP081	112	4	6	118
			Backhoe	CNP081	112	3	5	117
			Generator	CNP101	108	6	8	116
			Lorry	CNP141	112	3	5	117
			Grader	CNP104	113	3	5	118
			Compactor	CNP050	105	3	5	110
			Water pump	CNP282	103	6	8	111
			Tower crane	CNP049	95	3	5	100
			Bobcats	By WDI	114	6	8	122
			Pan scrapers	CNP204	114	2	3	117
				Sub-total				131
J121	J132	Hotels Superstructure	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker >35kg	CNP026	114	2	3	117
			Concrete truck (mixer)	CNP044	109	4	6	115
			Excavator/ Loader	CNP081	112	3	5	117
			Backhoe	CNP081	112	3	5	117
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	6	8	116
			Lorry	CNP141	112	3	5	117
			Grader	CNP104	113	3	5	118
			Compactor	CNP050	105	3	5	110
			Tower crane	CNP049	95	3	5	100
				Sub-total				126
N		Theme Park Development - Theme Park Extension (WDI Option)						
N137		Theme Park Extension - foundations	Compressor >30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	CNP026	114	4	6	120
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	2	3	120
			Excavator/ Loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	2	3	115
			Mobile Crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Waterpump	CNP282	103	4	6	109
			Bobcats	By WDI	114	5	7	121
			Ditch Witch Trencher	By WDI	117	1	0	117
			Forklifts	By WDI	113	10	10	123
			Pan Scrapers	CNP204	119	1	0	119
				Sub-total				130
N138		Theme Park Extension - superstructure	Compressor >30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	4	6	120
			Concrete truck (mixer)	CNP044	109	4	6	115
			Excavator/ Loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	2	3	115
			Mobile Crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Lorry	CNP141	112	2	3	115
			Waterpump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
				Sub-total				125
N139		RD&E Foundations	Compressor >30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	CNP026	114	8	9	123
			Concrete truck (mixer)	CNP044	109	10	10	119
			Dozer	CNP030	115	2	3	118
			Dump truck	CNP067	117	2	3	120
			Excavator/ Loader	CNP081	112	3	5	117
			Backhoe	CNP081	112	2	3	115
			Mobile Crane	CNP048	112	2	3	115
			Generator	CNP101	108	2	3	111
			Lorry	CNP141	112	2	3	115
			Grader	CNP104	113	2	3	116
			Waterpump	CNP282	103	4	6	109
			Pan Scrapers	CNP204	119	1	0	119
				Sub-total				129
N140		RD&E Superstructure	Compressor >30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	8	9	123
			Concrete truck (mixer)	CNP044	109	10	10	119
			Excavator/ Loader	CNP081	112	2	3	115
			Backhoe	CNP081	112	2	3	115
			Mobile Crane	CNP048	112	2	3	115

Table C2.1 - Plant Inventory (Unmitigated)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Generator	CNP101	108	2	3	111
			Lorry	CNP141	112	2	3	115
			Waterpump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Bobcats	By WDI	114	10	10	124
			Ditch Witch Trencher	By WDI	117	2	3	120
			Forklifts	By WDI	113	10	10	123
			Sub-total					130
Phase 3		Penny's Bay Rail Link						
		Yam O Station & Adjacent Section						
T164	T183	Foundation (Concreting)	Concrete truck (mixer)	CNP044	109	2	3	112
			Concrete lining machine (concrete pump)	CNP047	109	1	0	109
			Poker vibrator	CNP170	113	6	8	121
			Sub-total					122
T165	T184	Foundation (Formwork & Reinforcement)	Compressor £ 10m ³ /min	CNP001	100	1	0	100
			Generator	CNP101	108	1	0	108
			Mobile crane	CNP048	112	1	0	112
			Bar bender	CNP021	90	1	0	90
			Sub-total					114
T166	T185	Excavation	Compressor £ 10m ³ /min	CNP001	100	4	6	106
			Breaker, excavator mounted (hydraulic)	CNP028	122	1	0	122
			Excavator/Loader	CNP081	112	2	3	115
			Lorry	CNP141	112	3	5	117
			Submersible pump	by MTRC	95	1	0	96
			Sub-total					124
T167	T186	Station Construction	Compressor £ 10m ³ /min	CNP001	100	2	3	103
			Handheld breaker 20kg£mass*35kg	CNP025	111	2	3	114
			Concrete truck (mixer)	CNP044	109	3	5	114
			Mobile crane	CNP048	112	1	0	112
			Poker vibrator	CNP170	113	6	8	121
			Concrete lining machine (concrete pump)	CNP047	109	1	0	109
			Lorry	CNP141	112	1	0	112
			Tower crane	CNP049	95	2	3	98
			Hoist, material (electric)	CNP122	95	1	0	95
			Saw, circular, wood	CNP201	108	1	0	108
			Sub-total					123
T168	T187	Sheet Piling for Protection on Existing Tracks/ Platforms	Sheet piling (hydraulic vibratory driver)	BS 5228: Part4:1992 Tab 1/53	118	1	0	118
			Sub-total					118
		Tunnel Portal (Start-up Works)						
T169	T188	Excavation	Excavator/ Loader (for Trench)	CNP081	112	3	5	117
			Lorry	CNP141	112	6	8	120
			Sub-total					122
T170	T189	Sheet Piling	Sheet piling (hydraulic vibratory driver)	BS 5228:Part4:1992 1/53	118	1	0	118
			Sub-total					118
T171	T190	Soil Nail Installation and Initial Tunnel Excavation	Compressor £ 10m ³ /min	CNP001	100	3	5	105
			Drilling Rigs	Tab C11/ 1	117	2	3	120
			Sub-total					120
T172	T191	Re-construction of Roads	Vibrating roller	CNP186	108	1	0	108
			Dozer	CNP030	115	1	0	115
			Sub-total					116
T173	T192	Mechanical Rock Excavation	Breaker, excavator mounted (hydraulic)	CNP028	122	2	3	125
			Sub-total					125
		Tunnel Works						
T174	T193	Works at Tunnel Portal	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Mobile crane	CNP048	112	1	0	112
			Lorry	CNP141	112	1	0	112
			Ventilation fan	CNP241	108	2	3	111
			Forklift	By WDI	113	1	0	113
			Batching Plant	CNP022	108	1	0	108
			Sub-total					119
T175	T194	Removal of Spoil at Tunnel Portal	Excavator/Loader	CNP081	112	1	0	112
			Lorry	CNP141	112	3	5	117
			Sub-total					118
T176	B19	Concrete Lining, Track Laying	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	4	6	115
			Excavator/ Loader	CNP081	112	2	3	115
			Mobile crane	CNP048	112	1	0	112
			Concrete lining machine (concrete pump)	CNP047	109	1	0	109
			Lorry	CNP141	112	1	0	112

Table C2.1 - Plant Inventory (Unmitigated)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
								120
								120
		At Grade Trackwork						
T177	T195	Surface Drainage Construction including pumps to control water influx	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	CNP044	109	1	0	109
			Dozer	CNP030	115	1	0	115
			Dump truck	CNP067	117	2	3	120
			Crane/vibrocompaction	By SWHK	112	1	0	112
			Excavator/ Loader	CNP081	112	2	3	115
			Mobile Crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	1	0	113
			Concrete lining machine (pump)	CNP047	109	1	0	109
			Lorry	CNP141	112	1	0	112
			Water pump	CNP282	103	8	9	112
								125
T178	T196	Track Laying	Generator	CNP101	108	1	0	108
			Diesel locomotive	from West Rail	118	2	3	121
			Lorry	CNP141	112	1	0	112
								122
		Disney Station						
T179	T197	Excavation	Generator	CNP101	108	2	3	111
			Excavator/ Loader	CNP081	112	3	5	117
			Lorry	CNP141	112	8	9	121
								123
T180	T198	Foundation (Concreting)	Concrete truck (mixer)	CNP044	109	2	3	112
			Poker vibrator	CNP170	113	6	8	121
			Concrete lining machine (concrete pump)	CNP047	109	1	0	109
								122
T181	T199	Foundation (Formwork & Reinforcement)	Compressor £ 10m ³ /min	CNP001	100	1	0	100
			Generator	CNP101	108	2	3	111
			Mobile crane	CNP048	112	1	0	112
			Bar bender	CNP021	90	1	0	90
								115
T182	T200	Station Construction	Compressor £ 10m ³ /min	CNP001	100	4	6	106
			Handheld breaker 20kg£mass*35kg	CNP025	111	4	6	117
			Concrete truck (mixer)	CNP044	109	3	5	114
			Mobile crane	CNP048	112	2	3	115
			Poker vibrator	CNP170	113	6	8	121
			Lorry	CNP141	112	1	0	112
			Tower crane	CNP049	95	1	0	95
								124
		Ventilation Building						
T183	B17	Ventilation Building Foundations	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	CNP026	114	3	5	119
			Concrete truck (mixer)	CNP044	109	4	6	115
			Dump truck	CNP067	117	2	3	120
			Backhoe	CNP081	112	2	3	115
			Generator	CNP101	108	1	0	108
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	CNP170	113	1	0	113
								125
T184	B18	Ventilation Building Superstructure	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	CNP044	109	4	6	115
			Backhoe	CNP081	112	2	3	115
			Mobile crane	CNP048	112	2	3	115
			Generator	CNP101	108	1	0	108
			Poker vibrator	CNP170	113	1	0	113
								121

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No.	Corr.	Sum
Phase 1									
A1	A1	Reclamation & Excavation Slope protection in Penny's Bay West	Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	6	8		118
			Concrete truck (mixer)	Tab C6/35	100	3	5		105
			Dump truck	Tab C9/27	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
			Sub-total						
A2	A2	Dredging at Theme Park Phase 1	Grab dredger	CNP063	112	1	0		112
			TS Dredger	By SWHK	109	1	0		109
			Sub-total						114
A3	A3	Placement of sloping/vertical seawall at Theme Park Phase 1	Grab dredger	CNP063	112	2	3		115
			Derrick lighter	CNP061	104	6	8		112
			Tugboat	CNP221	110	10	10		120
			Hopper barge/ Pelican barge/ Barge	CNP061	104	4	6		110
			Sub-total						122
A4	A4	Filling at Theme Park Phase 1	Grab Dredger	CNP063	112	6	8		120
			TS Dredger	By SWHK	109	4	6		115
			CS Dredger	By SWHK	104	2	3		107
			Derrick lighter	CNP061	104	4	6		110
			Dozer	Tab C9/2	104	8	9		113
			Dump truck	Tab C9/27	105	20	13		118
			Tugboat	CNP221	110	12	11		121
			Loading shovel (excavator)	Tab C3/97	105	12	11		116
			Hopper barge/ Pelican barge/ Barge	CNP061	104	24	14		118
			Crane/vibrocompaction	By SWHK	112	8	9		121
			Land drain rig (compressor)	CNP003	104	4	6		110
			Maine drain rig (compressor)	CNP003	104	4	6		110
			Sub-total						126
			A5	A5	Surcharge at Theme Park Phase 1	Dozer	Tab C9/2	104	4
Dump truck	Tab C9/27	105				10	10		115
Loading shovel (excavator)	Tab C3/97	105				5	7		112
Sub-total									118
A6	A6	Demolition, part of Cheoy Lee	Dump truck	Tab C9/27	105	1	0		105
			Excavator/Loader	Tab C3/97	105	1	0		105
			Backhoe	Tab C3/97	105	3	5		110
			Mobile crane	Tab C7/114	101	2	3		104
			Sub-total						113
A7	A7	Ground treatment	Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Sub-total						110
A8	A8	Excavation to tie in at existing Yam O Interchange	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	5	7		117
			Dump truck	Tab C9/27	105	10	10		115
			Excavator/Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
Sub-total						120			
A9	A9	Blasting	Drilling Rigs	Tab C11/2	112	6	8		120
			Sub-total						120
A10	A10	Slope protection in Yam O Section	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Sub-total						115
A11	A11	Slope protection in Penny's Bay North Adjacent	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	4	6		116
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Sub-total						118
A12	A12	Dredging sloping seawall at Yam O PTI	Grab dredger	CNP063	112	1	0		112
			Tugboat	CNP221	110	1	0		110
			Sand barge	CNP061	104	1	0		104
			Sub-total						115
A13	A13	Placement of sloping seawall at Yam O PTI	Grab dredger	CNP063	112	1	0		112
			Derrick lighter	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Sand barge	CNP061	104	1	0		104
			Sub-total						115

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No.	Corr.	Sum			
A14	A14	Filling at Yam O PT1	Grab dredger	CNP063	112	1	0		112			
			Dozer	Tab C9/2	104	1	0		104			
			Dump truck	Tab C9/27	105	3	5		110			
			Tugboat	CNP221	110	2	3		113			
			Loading shovel (excavator)	Tab C3/97	105	1	0		105			
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3		107			
			Land drain rig (compressor)	CNP003	104	1	0		104			
			Maine drain rig (compressor)	CNP003	104	1	0		104			
			Sand barge	CNP061	104	7	8		112			
				Sub-total							119	
A15	A15	Surcharge at Yam O PT1	Dozer	Tab C9/2	104	2	3		107			
			Dump truck	Tab C9/27	105	3	5		110			
			Loading shovel (excavator)	Tab C3/97	105	1	0		105			
			Sub-total							112		
B16	B20	<i>Transport Infrastructure</i> Temporary Road Surfacing/Construction at grade:: Temporary Access Road	Compressor > 30m³/min	CNP003	104	1	0		104			
			Dump truck	Tab C9/27	105	2	3		108			
			Backhoe	Tab C3/97	105	2	3		108			
			Grader	Tab C9/11	110	1	0		110			
			Tarmac paver	Tab C8/24	101	1	0		101			
			Tarmac truck	Tab C9/27	105	2	3		108			
			Roller	Tab C8/27	104	2	3		107			
			Sub-total							116		
			B17	B21	Road Structures including (Piling & Foundations plus superstructure) : CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3		107
						Handheld breaker >35kg	Tab C2/10	110	4	6		116
Concrete truck (mixer)	Tab C6/35	100				2	3		103			
Backhoe	Tab C3/97	105				2	3		108			
Mobile Crane	Tab C7/114	101				2	3		104			
Generator	Tab C7/62	100				2	3		103			
Bored piler,oscillator	CNP165	115				1	0		115			
Sub-total										120		
B18	B22	Road Surfacing / Construction at grade : CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3		107			
			Dump truck	Tab C9/27	105	1	0		105			
			Backhoe	Tab C3/97	105	1	0		105			
			Grader	Tab C9/11	110	2	3		113			
			Tarmac paver	Tab C8/24	101	1	0		101			
			Tarmac truck	Tab C9/27	105	2	3		108			
			Roller	Tab C8/27	104	2	3		107			
			Sub-total							116		
B19	B23	Road Surfacing / Construction (elevated section including decking): CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m³/min	CNP003	104	2	3		107			
			Mobile Crane	Tab C7/114	101	2	3		104			
			Poker vibrator	Tab C6/32	100	4	6		106			
			Tarmac paver	Tab C8/24	101	1	0		101			
			Tarmac truck	Tab C9/27	105	2	3		108			
			Roller	Tab C8/27	104	2	3		107			
			Launching girder (winch)	CNP263	102	1	0		102			
			Sub-total							114		
B20	B24	Road Structures including (Piling & Foundations plus superstructure) : Road P2 Northshore Development to Theme Park West	Compressor > 30m³/min	CNP003	104	2	3		107			
			Handheld breaker >35kg	Tab C2/10	110	4	6		116			
			Concrete truck (mixer)	Tab C6/35	100	4	6		106			
			Backhoe	Tab C3/97	105	2	3		108			
			Mobile crane	Tab C7/114	101	2	3		104			
			Generator	Tab C7/62	100	1	0		100			
			Poker vibrator	Tab C6/32	100	4	6		106			
			Bored piler,oscillator	CNP165	115	1	0		115			
			Sub-total							120		
			B21	B25	Road Surfacing / Construction at grade incl. roadside buffers : Road P2 Northshore Development to Theme Park West	Compressor > 30m³/min	CNP003	104	2	3		107
Concrete truck (mixer)	Tab C6/35	100				2	3		103			
Dump truck	Tab C9/27	105				2	3		108			
Backhoe	Tab C3/97	105				3	5		110			
Poker vibrator	Tab C6/32	100				4	6		106			
Grader	Tab C9/11	110				1	0		110			
Tarmac paver	Tab C8/24	101				1	0		101			
Tarmac truck	Tab C9/27	105				2	3		108			
Roller	Tab C8/27	104				1	0		104			
Sub-total										117		
B22	B26	Road Surfacing / Construction (elevated section including decking): Road P2 Northshore Development to Theme Park West	Concrete truck (mixer)	Tab C6/35	100	4	6		106			

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	6	8	108
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	2	3	107
			Sub-total					114
B23	B27	Road Surfacing / Construction at grade incl. roadside buffers: Road D1 Theme Park West Roundabout to Theme Park	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	3	5	110
			Poker vibrator	Tab C6/32	100	4	6	106
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	2	3	107
			Sub-total					117
B24	B28	Road Surfacing / Construction at grade : Acces Road at Yam O I.e from road P2, to Yam O Rail Station	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Poker vibrator	Tab C6/32	100	4	6	106
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Roller	Tab C8/27	104	2	3	107
			Sub-total					116
B25	B29	Central pedestrian walkway surfacing / construction: Approx. Middle of proposed park I.e boundary between Phase 1 and Phase 2 expansion	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Compactor	CNP050	105	2	3	108
			Sub-total					116
C26	C31	Services Infrastructure Installation of Utilities / Services I.e electricity, gas, telecom etc.	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Poker vibrator	Tab C6/32	100	2	3	103
			Sub-total					113
C27	C32	Excavation of lake	Dump truck	Tab C9/27	105	10	10	115
			Backhoe	Tab C3/97	105	2	3	108
			Sub-total					116
C28	C33	Placement of lake membrane plus associated waterworks to tie into (ability to tap from) adjacent drainage system	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	2	3	103
			Sub-total					112
C29	C34	Lake de-silting and pumping facilities	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	2	3	103
			Sub-total					111
C33	C38	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	2	3	103
			Lorry	Tab C8/16	108	2	3	111
			Sub-total					117

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No.	Corr.	Sum
C34	C39	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						
C35	C40	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Concrete truck (mixer)	Tab C6/35	100	6	8		108
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	8	9		109
			Lorry	Tab C8/16	108	2	3		111
			Sub-total						
D36	D41	<i>GIC Sites</i> P.T.I at Yam O Station	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						
D37	D42	P.T.I at Penny's Bay Station- Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						
D38	D43	Public Parking in Penny's Bay Station - Phase	Backhoe	Tab C3/97	105	2	3		108
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Compactor	CNP050	105	2	3		108
			Sub-total						
D39	D44	Police Station in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						
D40	D45	Fire Station in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						
D41	D46	Utility Yard	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	2	3		103
			Sub-total						
E43	E48	<i>Phase 1 - Theme Park Development</i> Theme Park Building/Attraction Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	11	10		120
			Concrete truck (mixer)	Tab C6/35	100	20	13		113
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	8	9		114
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	4	6		107
			Drilling rigs	Tab C11/2	112	8	9		121
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	4	6		116
			Compactor	CNP050	105	3	5		110

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No.	Corr.	Sum
			Water pump	CNP282	103	15	12		115
			Pan scrapers	CNP204	119	3	5		124
			Sub-total:						128
E44	E49	Theme Park Building/Attraction Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	10	10		114
			Handheld breaker >35kg	Tab C2/10	110	15	12		122
			Concrete truck (mixer)	Tab C6/35	100	30	15		115
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	8	9		114
			Backhoe	Tab C3/97	105	12	11		116
			Mobile crane	Tab C7/114	101	12	11		112
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	2	3		108
			Water pump	CNP282	103	15	12		115
			Tower crane	CNP049	95	10	10		105
			Bobcats	By WDI	114	20	13		127
			Ditch Witch Trencher	By WDI	117	3	5		122
			Forklifts	By WDI	113	20	13		126
			Sub-total:						132
E45	E50	Theme Park Surfacing, Landscaping and Berms in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	3	5		115
			Concrete truck (mixer)	Tab C6/35	100	8	9		109
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	12	11		116
			Mobile crane	Tab C7/114	101	4	6		107
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	1	0		105
			Bobcats	By WDI	114	6	8		122
			Ditch Witch Trencher	By WDI	117	3	5		122
			Forklifts	By WDI	113	4	6		119
			Sub-total:						127
E46	E51	Ferry Pier Substructure: piling/foundations in Penny's Bay Station- Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	3	5		115
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Derrick lighter plus crane	CNP061	104	1	0		104
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Tugboat	CNP221	110	2	3		113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Water pump	CNP282	103	6	8		111
			Lorry	Tab C8/16	108	2	3		111
			Coring rig	CNP165	115	3	5		120
			Bobcats	By WDI	114	4	6		120
			Sub-total:						125
E47	E52	Ferry Pier Superstructure: Precast decking and insitu infill in Penny's Bay Station - Phase	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Derrick Lighter plus crane	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper Barge/ Pelican Barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	1	0		100
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Bobcats	By WDI	114	4	6		120
			Forklifts	By WDI	113	3	5		118
			Sub-total:						123
E48	E53	Ferry Pier Building Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Generator	Tab C7/62	100	2	3		103
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Bobcats	By WDI	114	2	3		117
			Sub-total:						121

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No.	Corr.	Sum		
E49	E54	Ferry Pier Building Superstructure in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3		107		
			Handheld breaker >35kg	Tab C2/10	110	2	3		113		
			Concrete truck (mixer)	Tab C6/35	100	2	3		103		
			Backhoe	Tab C3/97	105	2	3		108		
			Mobile crane	Tab C7/114	101	2	3		104		
			Generator	Tab C7/62	100	2	3		103		
			Poker vibrator	Tab C6/32	100	4	6		106		
			Lorry	Tab C8/16	108	2	3		111		
			Bobcats	By WDI	114	2	3		117		
			Ditch Witch Trencher	By WDI	117	4	6		123		
			Sub-total					125			
E50	E55	Hotels Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	3	5		109		
			Handheld breaker >35kg	Tab C2/10	110	10	10		120		
			Concrete truck (mixer)	Tab C6/35	100	10	10		110		
			Dozer	Tab C9/2	104	2	3		107		
			Dump truck	Tab C9/27	105	4	6		111		
			Excavator/ Loader	Tab C3/97	105	3	5		110		
			Backhoe	Tab C3/97	105	3	5		110		
			Generator	Tab C7/62	100	4	6		106		
			Lorry	Tab C8/16	108	2	3		111		
			Grader	Tab C9/11	110	2	3		113		
			Compactor	CNP050	105	2	3		108		
			Water pump	CNP282	103	4	6		109		
			Tower crane	CNP049	95	2	3		98		
			Bobcats	By WDI	114	4	6		120		
			Pan Scrapers	CNP204	119	2	3		122		
						Sub-total					127
			E51	E56	Hotels Superstructure in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	3	5	
Handheld breaker >35kg	Tab C2/10	110				10	10		120		
Concrete truck (mixer)	Tab C6/35	100				20	13		113		
Dozer	Tab C9/2	104				2	3		107		
Dump truck	Tab C9/27	105				4	6		111		
Excavator/ Loader	Tab C3/97	105				2	3		108		
Backhoe	Tab C3/97	105				3	5		110		
Mobile crane	Tab C7/114	101				2	3		104		
Generator	Tab C7/62	100				4	6		106		
Lorry	Tab C8/16	108				2	3		111		
Grader	Tab C9/11	110				2	3		113		
Compactor	CNP050	105				2	3		108		
Tower crane	CNP049	95				3	5		100		
Bobcats	By WDI	114				20	13		127		
Ditch Witch Trencher	By WDI	117				3	5		122		
Forklifts	By WDI	113				20	13		126		
						Sub-total					131
E52		Water Recreation Centre - Foundation	Compressor > 30m ³ /min	CNP003	104	2	3		107		
			Handheld breaker >35kg	Tab C2/10	110	2	3		113		
			Concrete truck (mixer)	Tab C6/35	100	2	3		103		
			Dump truck	Tab C9/27	105	2	3		108		
			Backhoe	Tab C3/97	105	2	3		108		
			Mobile crane	Tab C7/114	101	2	3		104		
			Vibratory piling rig	CNP164	115	1	0		115		
			Generator	Tab C7/62	100	2	3		103		
			Poker vibrator	Tab C6/32	100	4	6		106		
			Lorry	Tab C8/16	108	2	3		111		
			Water pump	CNP282	103	2	3		106		
						Sub-total					120
E53		Water Recreation Centre - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3		107		
			Handheld breaker >35kg	Tab C2/10	110	2	3		113		
			Concrete truck (mixer)	Tab C6/35	100	2	3		103		
			Backhoe	Tab C3/97	105	2	3		108		
			Mobile crane	Tab C7/114	101	2	3		104		
			Generator	Tab C7/62	100	2	3		103		
			Poker vibrator	Tab C6/32	100	4	6		106		
			Lorry	Tab C8/16	108	2	3		111		
			Water pump	CNP282	103	2	3		106		
			Sub-total					118			
Phase 2 F61	F64	Reclamation & Excavation Slope Protection along southern boundary of TCT	Compressor > 30m ³ /min	CNP003	104	3	5		109		
			Handheld breaker >35kg	Tab C2/10	110	6	8		118		
			Concrete truck (mixer)	Tab C6/35	100	3	5		105		
			Dump truck	Tab C9/27	105	3	5		110		
			Backhoe	Tab C3/97	105	3	5		110		
			Sub-total					120			
F62	F65	Dredging for Theme Park phase 2	Grab dredger	CNP063	112	1	0		112		
			Sub-total					112			
F63	F66	Placement of seawall for Theme Park phase 2	Grab dredger	CNP063	112	1	0		112		

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No.	Corr.	Sum
			Derrick lighter	CNP061	104	2	3		107
			Tugboat	CNP221	110	4	6		116
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3		107
			Sub-total						118
F64	F67	Filling reclamation for Theme Park phase 2	Grab dredger	CNP063	112	2	3		115
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	5	7		112
			Tugboat	CNP221	110	3	5		115
			Loading shovel (excavator)	Tab C3/97	105	2	3		108
			Hopper barge/ Pelican barge/ Barge	CNP061	104	3	5		109
			Crane/vibrocompaction	By SWHK	112	2	3		115
			Land drain rig (compressor)	CNP003	104	1	0		104
			Marine drain rig (compressor)	CNP003	104	1	0		104
			Sub-total						121
F65	F68	Surcharge placement for Theme Park phase 2	Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	8	9		114
			Loading shovel (excavator)	Tab C3/97	105	2	3		108
			Sub-total						116
		Transport Infrastructure							
G94	G101	Road Surfacing / Construction at grade incl. roadside buffers:Road P2 Theme Park East Roundabout	Compressor > 30m³/min	CNP003	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
			Sub-total						116
G95	G102	Road Surfacing / Construction at grade incl. roadside buffers:Road D2 Theme Park East Roundabout to Theme Park	Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
			Sub-total						116
G96	G103	Road Surfacing / Construction at grade incl. roadside buffers:Road P2 Theme Park East Roundabout to Pa Kwu Interchange	Compressor > 30m³/min	CNP003	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
			Sub-total						116
		Services Infrastructure							
G102	H109	Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Sub-total						113
G103	H110	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	2	3		103
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						113
G104	H111	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m³/min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						114
G105	H112	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m³/min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Mobile crane	Tab C7/114	101	1	0	101
			Poker vibrator	Tab C6/32	100	4	6	106
			Lorry	Tab C8/16	108	1	0	108
			Sub-total					115
GIC Sites								
I109	I116	P.T.I in Penny's Bay Station- Phase 2	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					118
I110	I117	Public Parking in Penny's Bay -Phase 2	Backhoe	Tab C3/97	105	2	3	108
			Grader	Tab C9/11	110	1	0	110
			Tarmac paver	Tab C8/24	101	1	0	101
			Tarmac truck	Tab C9/27	105	2	3	108
			Compactor	CNP050	105	2	3	108
			Sub-total					115
I111	I118	2nd Fire Station in Penny's Bay	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	4	6	106
			Sub-total					117
I112	I119	Utility Yard in Penny's Bay - Phase 2	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dump truck	Tab C9/27	105	1	0	105
			Backhoe	Tab C3/97	105	1	0	105
			Mobile crane	Tab C7/114	101	1	0	101
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	2	3	103
			Sub-total					117
Theme Park Development								
J117	J124	Theme Park Building/Attraction Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	Tab C2/10	110	11	10	120
			Concrete truck (mixer)	Tab C6/35	100	20	13	113
			Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/loader	Tab C3/97	105	8	9	114
			Backhoe	Tab C3/97	105	4	6	111
			Mobile crane	Tab C7/114	101	4	6	107
			Drilling rig	Tab C11/2	112	8	9	121
			Generator	Tab C7/62	100	4	6	106
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	4	6	116
			Compactor	CNP050	105	3	5	110
			Water pump	CNP282	103	15	12	115
			Pan Scrapers	CNP204	119	3	5	124
			Sub-total					128
J118	J125	Theme Park Building/Attraction Construction	Compressor > 30m ³ /min	CNP003	104	10	10	114
			Handheld breaker >35kg	Tab C2/10	110	15	12	122
			Concrete truck (mixer)	Tab C6/35	100	30	15	115
			Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/loader	Tab C3/97	105	8	9	114
			Backhoe	Tab C3/97	105	12	11	116
			Mobile crane	Tab C7/114	101	12	11	112
			Generator	Tab C7/62	100	4	6	106
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	2	3	113
			Compactor	CNP050	105	2	3	108
			Water pump	CNP282	103	15	12	115
			Tower crane	CNP049	95	10	10	105
			Bobcats	By WDI	114	20	13	127
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	20	13	126
			Sub-total					132
J119	J126	Theme Park Surfacing, Landscaping and Berms	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	Tab C2/10	110	3	5	115
			Concrete truck (mixer)	Tab C6/35	100	8	9	109
			Dozer	Tab C9/2	104	4	6	110
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/loader	Tab C3/97	105	2	3	108
			Backhoe	Tab C3/97	105	12	11	116
			Mobile crane	Tab C7/114	101	4	6	107
			Generator	Tab C7/62	100	4	6	106
			Lorry	Tab C8/16	108	2	3	111

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Grader	Tab C9/11	110	2	3	113
			Compactor	CNP050	105	1	0	105
			Bobcats	By WDI	114	6	8	122
			Ditch Witch Trencher	By WDI	117	3	5	122
			Forklifts	By WDI	113	4	6	119
			Sub-total					127
J120	J131	Hotels Foundations	Compressor > 30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	Tab C2/10	110	12	11	121
			Concrete truck (mixer)	Tab C8/35	100	12	11	111
			Dozer	Tab C9/2	104	3	5	109
			Dump truck	Tab C9/27	105	6	8	113
			Excavator/ Loader	Tab C3/97	105	4	6	111
			Backhoe	Tab C3/97	105	3	5	110
			Generator	Tab C7/62	100	6	8	108
			Lorry	Tab C8/16	108	3	5	113
			Grader	Tab C9/11	110	3	5	115
			Compactor	CNP050	105	3	5	110
			Water pump	CNP282	103	6	8	111
			Tower crane	CNP049	95	3	5	100
			Bobcats	By WDI	114	6	8	122
			Pan scrapers	CNP204	114	2	3	117
			Sub-total					127
J121	J132	Hotels Superstructure	Compressor > 30m ³ /min	CNP003	104	3	5	109
			Handheld breaker >35kg	Tab C2/10	110	2	3	113
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Excavator/ Loader	Tab C3/97	105	3	5	110
			Backhoe	Tab C3/97	105	3	5	110
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	6	8	108
			Lorry	Tab C8/16	108	3	5	113
			Grader	Tab C9/11	110	3	5	115
			Compactor	CNP050	105	3	5	110
			Tower crane	CNP049	95	3	5	100
			Sub-total					121
N		Theme Park Development - Theme Park Extension (WDI Option)						
N137		Theme Park Extension - foundations	Compressor >30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	Tab C2/10	110	4	6	116
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/ Loader	Tab C3/97	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Mobile Crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	2	3	113
			Waterpump	CNP282	103	4	6	109
			Bobcats	By WDI	114	5	7	121
			Ditch Witch Trencher	By WDI	117	1	0	117
			Forklifts	By WDI	113	10	10	123
			Pan Scrapers	CNP204	119	1	0	119
			Sub-total					128
N138		Theme Park Extension - superstructure	Compressor >30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	4	6	116
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Excavator/ Loader	Tab C3/97	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Mobile Crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Lorry	Tab C8/16	108	2	3	111
			Waterpump	CNP282	103	4	6	109
			Tower crane	CNP049	95	1	0	95
			Sub-total					119
N139		RD&E Foundations	Compressor >30m ³ /min	CNP003	104	4	6	110
			Handheld breaker >35kg	Tab C2/10	110	8	9	119
			Concrete truck (mixer)	Tab C6/35	100	10	10	110
			Dozer	Tab C9/2	104	2	3	107
			Dump truck	Tab C9/27	105	2	3	108
			Excavator/ Loader	Tab C3/97	105	3	5	110
			Backhoe	Tab C3/97	105	2	3	108
			Mobile Crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	2	3	103
			Lorry	Tab C8/16	108	2	3	111
			Grader	Tab C9/11	110	2	3	113
			Waterpump	CNP282	103	4	6	109
			Pan Scrapers	CNP204	119	1	0	119
			Sub-total					124
N140		RD&E Superstructure	Compressor >30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	8	9	119
			Concrete truck (mixer)	Tab C6/35	100	10	10	110

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No.	Corr.	Sum
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	85	2	3		88
			Mobile Crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Lorry	Tab C8/16	108	2	3		111
			Waterpump	CNP282	103	4	6		109
			Tower crane	CNP049	95	1	0		95
			Bobcats	By WDI	114	10	10		124
			Ditch Witch Trencher	By WDI	117	2	3		120
			Forklifts	By WDI	113	10	10		123
			Sub-total						128
Phase 3 Penny's Bay Rail Link Yam O Station & Adjacent Section									
T164	T183	Foundation (Concreting)	Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0		106
			Poker vibrator	Tab C6/32	100	6	8		108
			Sub-total						111
T165	T184	Foundation (Formwork & Reinforcement)	Compressor ≤ 10m ³ /min	CNP001	100	1	0		100
			Generator	Tab C7/62	100	1	0		100
			Mobile crane	Tab C7/114	101	1	0		101
			Bar bender	CNP021	90	1	0		90
			Sub-total						105
T166	T185	Excavation	Compressor ≤ 10m ³ /min	CNP001	100	4	6		106
			Breaker, excavator mounted (hydraulic)	Tab C3/97	105	1	0		105
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Lorry	Tab C8/16	108	3	5		113
			Submersible pump	by MTRC	96	1	0		96
			Sub-total						115
T167	T186	Station Construction	Compressor ≤ 10m ³ /min	CNP001	100	2	3		103
			Handheld breaker 20kg≤mass≥35kg	CNP025	111	2	3		114
			Concrete truck (mixer)	Tab C6/35	100	3	5		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	6	8		108
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0		106
			Lorry	Tab C8/16	108	1	0		108
			Tower crane	CNP049	95	2	3		98
			Hoist, material (electric)	CNP122	95	1	0		95
			Saw, circular, wood	CNP201	108	1	0		108
			Sub-total						117
T168	T187	Sheet Piling for Protection on Existing Tracks/ Platforms	Sheet piling (hydraulic vibratory driver)	BS 5228: Part4:1992 Tab 1/53	118	1	0		118
			Sub-total						118
T169	T188	Tunnel Portal (Start-up Works) Excavation	Excavator/ Loader (for Trench)	Tab C3/97	105	3	5		110
			Lorry	Tab C8/16	108	6	8		116
			Sub-total						117
T170	T189	Sheet Piling	Sheet piling (hydraulic vibratory driver)	BS 5228:Part4:1992 1/53	118	1	0		118
			Sub-total						118
T171	T190	Soil Nail Installation and Initial Tunnel Excavation	Compressor ≤ 10m ³ /min	CNP001	100	3	5		105
			Drilling Rigs	Tab C11/ 1	117	2	3		120
			Sub-total						120
T172	T191	Re-construction of Roads	Vibrating roller	Tab C8/27	104	1	0		104
			Dozer	Tab C9/2	104	1	0		104
			Sub-total						107
T173	T192	Mechanical Rock Excavation	Breaker, excavator mounted (hydraulic)	Tab C3/97	105	2	3		108
			Sub-total						108
T174	T193	Tunnel Works Works at Tunnel Portal	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Mobile crane	Tab C7/114	101	1	0		101
			Lorry	Tab C8/16	108	1	0		108
			Ventilation fan	CNP241	108	2	3		111
			Forklift	By WDI	113	1	0		113
			Batching Plant	CNP022	108	1	0		108
			Sub-total						118
T175	T194	Removal of Spoil at Tunnel Portal	Excavator/Loader	Tab C3/97	105	1	0		105
			Lorry	Tab C8/16	108	3	5		113
			Sub-total						113
T176	B19	Concrete Lining, Track Laying	Compressor > 30m ³ /min	CNP003	104	2	3		107

Table C2.2 - Plant Inventory (Use of Quiet Plant)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Excavator/ Loader	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	1	0	101
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0	106
			Lorry	Tab C8/16	108	1	0	108
			Sub-total					114
		At Grade Trackwork						
T177	T195	Surface Drainage Construction including pumps to control water influx	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Concrete truck (mixer)	Tab C6/35	100	1	0	100
			Dozer	Tab C9/2	104	1	0	104
			Dump truck	Tab C9/27	105	2	3	108
			Crane/vibrocompaction	By SWHK	112	1	0	112
			Excavator/ Loader	Tab C3/97	105	2	3	108
			Mobile Crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	1	0	100
			Concrete lining machine (pump)	Tab C6/22	106	1	0	106
			Lorry	Tab C8/16	108	1	0	108
			Water pump	CNP282	103	8	9	112
			Sub-total					116
T178	T196	Track Laying	Generator	Tab C7/62	100	1	0	100
			Diesel locomotive	from West Rail	118	2	3	121
			Lorry	Tab C8/16	108	1	0	108
			Sub-total					121
T179	T197	Disney Station Excavation	Generator	Tab C7/62	100	2	3	103
			Excavator/ Loader	Tab C3/97	105	3	5	110
			Lorry	Tab C8/16	108	8	9	117
			Sub-total					118
T180	T198	Foundation (Concreting)	Concrete truck (mixer)	Tab C6/35	100	2	3	103
			Poker vibrator	Tab C6/32	100	6	8	108
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0	106
			Sub-total					111
T181	T199	Foundation (Formwork & Reinforcement)	Compressor ≤ 10m ³ /min	CNP001	100	1	0	100
			Generator	Tab C7/62	100	2	3	103
			Mobile crane	Tab C7/114	101	1	0	101
			Bar bender	CNP021	90	1	0	90
			Sub-total					106
T182	T200	Station Construction	Compressor ≤ 10m ³ /min	CNP001	100	4	6	106
			Handheld breaker 20kg≤mass≥35kg	CNP025	111	4	6	117
			Concrete truck (mixer)	Tab C6/35	100	3	5	105
			Mobile crane	Tab C7/114	101	2	3	104
			Poker vibrator	Tab C6/32	100	6	8	108
			Lorry	Tab C8/16	108	1	0	108
			Tower crane	CNP049	95	1	0	95
			Sub-total					119
T183	B17	Ventilation Building Ventilation Building Foundations	Compressor > 30m ³ /min	CNP003	104	2	3	107
			Handheld breaker >35kg	Tab C2/10	110	3	5	115
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Dump truck	Tab C9/27	105	2	3	108
			Backhoe	Tab C3/97	105	2	3	108
			Generator	Tab C7/62	100	1	0	100
			Vibratory piling rig	CNP164	115	1	0	115
			Poker vibrator	Tab C6/32	100	1	0	100
			Sub-total					119
T184	B18	Ventilation Building Superstructure	Compressor > 30m ³ /min	CNP003	104	1	0	104
			Concrete truck (mixer)	Tab C6/35	100	4	6	106
			Backhoe	Tab C3/97	105	2	3	108
			Mobile crane	Tab C7/114	101	2	3	104
			Generator	Tab C7/62	100	1	0	100
			Poker vibrator	Tab C6/32	100	1	0	100
			Sub-total					112

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
Phase 1									
Reclamation & Excavation									
A1	A1	Slope protection in Penny's Bay West	Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	6	8		118
			Concrete truck (mixer)	Tab C6/35	100	3	5		105
			Dump truck	Tab C9/27	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
				Sub-total					
A2	A2	Dredging at Theme Park Phase 1	Grab dredger	CNP063	112	1	0		112
			TS Dredger	By SWHK	109	1	0		109
				Sub-total					
A3	A3	Placement of sloping/vertical seawall at Theme Park Phase 1	Grab dredger	CNP063	112	2	3		115
			Derrick lighter	CNP061	104	6	8		112
			Tugboat	CNP221	110	10	10		120
			Hopper barge/ Pelican barge/ Barge	CNP061	104	4	6		110
				Sub-total					
A4	A4	Filling at Theme Park Phase 1	Grab Dredger	CNP063	112	6	8		120
			TS Dredger	By SWHK	109	4	6		115
			CS Dredger	By SWHK	104	2	3		107
			Derrick lighter	CNP061	104	4	6		110
			Dozer	Tab C9/2	104	8	9		113
			Dump truck	Tab C9/27	105	20	13		118
			Tugboat	CNP221	110	12	11		121
			Loading shovel (excavator)	Tab C3/97	105	12	11		116
			Hopper barge/ Pelican barge/ Barge	CNP061	104	24	14		118
			Crane/vibrocompaction	By SWHK	112	8	9		121
			Land drain rig (compressor)	CNP003	104	4	6		110
			Maine drain rig (compressor)	CNP003	104	4	6		110
			Sub-total						128
A5	A5	Surcharge at Theme Park Phase 1	Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	10	10		115
			Loading shovel (excavator)	Tab C3/97	105	5	7		112
				Sub-total					
A6	A6	Demolition. part of Cheoy Lee	Dump truck	Tab C9/27	105	1	0		105
			Excavator/Loader	Tab C3/97	105	1	0		105
			Backhoe	Tab C3/97	105	3	5		110
			Mobile crane	Tab C7/114	101	2	3		104
				Sub-total					
A7	A7	Ground treatment	Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
				Sub-total					
A8	A8	Excavation to tie in at existing Yam O Interchange	Compressor > 30m ³ /min	CNP003	104	2	3	-10	97
			Handheld breaker >35kg	Tab C2/10	110	5	7	-10	107
			Dump truck	Tab C9/27	105	8	9		114
			Excavator/Loader	Tab C3/97	105	2	3	-5	103
			Backhoe	Tab C3/97	105	2	3	-5	103
				Sub-total					
A9	A9	Blasting	Drilling Rigs	Tab C11/2	112	6	8		120
				Sub-total					
A10	A10	Slope protection in Yam O Section	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
				Sub-total					
A11	A11	Slope protection in Penny's Bay North Adja	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	4	6		116
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
				Sub-total					
A12	A12	Dredging sloping seawall at Yam O PTI	Grab dredger	CNP063	112	1	0		112
			Tugboat	CNP221	110	1	0		110
			Sand barge	CNP061	104	1	0		104
				Sub-total					

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
A13	A13	Placement of sloping seawall at Yam O PT1	Grab dredger	CNP063	112	1	0		112
			Derrick lighter	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Sand barge	CNP061	104	1	0		104
				Sub-total					
A14	A14	Filling at Yam O PT1	Grab dredger	CNP063	112	1	0		112
			Dozer	Tab C9/2	104	1	0		104
			Dump truck	Tab C9/27	105	2	3		108
			Tugboat	CNP221	110	2	3		113
			Loading shovel (excavator)	Tab C3/97	105	1	0		105
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3		107
			Land drain rig (compressor)	CNP003	104	1	0		104
			Maine drain rig (compressor)	CNP003	104	1	0		104
			Sand barge	CNP061	104	7	8		112
			Sub-total						118.78
A15	A15	Surcharge at Yam O PT1	Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	3	5		110
			Loading shovel (excavator)	Tab C3/97	105	1	0	-5	100
				Sub-total					
Transport Infrastructure									
B16	B20	Temporary Road Surfacing/Construction at grade:: Temporary Access Road	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
				Sub-total					
B17	B21	Road Structures including (Piling & Foundations plus superstructure) : CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m ³ /min	CNP003	104	2	3	-10	97
			Handheld breaker >35kg	Tab C2/10	110	4	6	-10	106
			Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile Crane	Tab C7/114	101	2	3	-5	99
			Generator	Tab C7/62	100	2	3	-10	93
			Bored piler,oscillator	CNP165	115	1	0	-10	105
				Sub-total					
B18	B22	Road Surfacing / Construction at grade : CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m ³ /min	CNP003	104	2	3	-10	97
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Grader	Tab C9/11	110	2	3	-5	108
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3	-5	102
				Sub-total					
B19	B23	Road Surfacing / Construction (elevated section including decking): CKWLR from Yam O to Penny's Bay Interchange	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Mobile Crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	4	6		106
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
			Launching girder (winch)	CNP263	102	1	0		102
				Sub-total					
B20	B24	Road Structures including (Piling & Foundations plus superstructure) : Road P2 Northshore Development to Theme Park West	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	4	6	-10	106
			Concrete truck (mixer)	Tab C6/35	100	4	6	-10	96
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile crane	Tab C7/114	101	2	3	-5	99
			Generator	Tab C7/62	100	1	0	-10	90
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Bored piler,oscillator	CNP165	115	1	0	-10	105
			Sub-total						112
B21	B25	Road Surfacing / Construction at grade incl. roadside buffers : Road P2 Northshore Development to Theme Park West	Compressor > 30m ³ /min	CNP003	104	2	3	-10	97

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
			Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5	-5	105
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Grader	Tab C9/11	110	1	0	-5	105
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	1	0	-5	99
			Sub-total						113
B22	B26	Road Surfacing / Construction (elevated section including decking): Road P2 Northshore Development to Theme Park West	Concrete truck (mixer)	Tab C6/35	100	4	6	-10	96
			Mobile crane	Tab C7/114	101	2	3	-5	99
			Poker vibrator	Tab C6/32	100	6	8	-10	98
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3	-5	102
			Sub-total						110
B23	B27	Road Surfacing / Construction at grade incl. roadside buffers: Road D1 Theme Park West Roundabout to Theme Park	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Poker vibrator	Tab C6/32	100	4	6		106
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
			Sub-total						117
B24	B28	Road Surfacing / Construction at grade : Acces Road at Yam O I.e from road P2, to Yam O Rail Station	Compressor > 30m ³ /min	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3	-5	103
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Grader	Tab C9/11	110	1	0	-5	105
			Tarmac paver	Tab C8/24	101	1	0	-5	96
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3	-5	102
			Sub-total						112
B25	B29	Central pedestrian walkway surfacing / construction: Approx. Middle of proposed park I.e boundary between Phase 1 and Phase 2 expansion	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Compactor	CNP050	105	2	3		108
			Sub-total						116
C26	C31	Services Infrastructure Installation of Utilities / Services I.e electricity, gas, telecom etc.	Compressor > 30m ³ /min	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3	-5	103
			Poker vibrator	Tab C6/32	100	2	3	-10	93
			Sub-total						110
C27	C32	Excavation of lake	Dump truck	Tab C9/27	105	10	10		115
			Backhoe	Tab C3/97	105	2	3		108
			Sub-total						116
C28	C33	Placement of lake membrane plus associated waterworks to tie into (ability to tap from) adjacent drainage system	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	2	3		103
			Sub-total						112
C29	C34	Lake de-silting and pumping facilities	Compressor > 30m ³ /min	CNP003	104	1	0		104

Table C2.3 - Plant inventory (Use of Quiet Plant, Barrier)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
						(No. has been reduced if cell is in grey)			
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	2	3		103
			Sub-total						111
C33	C38	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m ³ /min	CNP003	104	2	3	-10	97
			Handheld breaker >35kg	Tab C2/10	110	2	3	-10	103
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	2	3	-10	93
			Lorry	Tab C8/16	108	2	3		111
			Sub-total						114
C34	C39	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m ³ /min	CNP003	104	1	0	-10	94
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						111
C35	C40	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m ³ /min	CNP003	104	4	6	-10	100
			Concrete truck (mixer)	Tab C6/35	100	6	8	-10	98
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile crane	Tab C7/114	101	2	3	-5	99
			Poker vibrator	Tab C6/32	100	8	9	-5	104
			Lorry	Tab C8/16	108	2	3		111
			Sub-total						114
D36	D41	GIC Sites P.T.I at Yam O Station	Compressor > 30m ³ /min	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile crane	Tab C7/114	101	2	3	-5	99
			Vibratory piling rig	CNP164	115	1	0	-10	105
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Sub-total						110
D37	D42	P.T.I at Penny's Bay Station- Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						117
D38	D43	Public Parking in Penny's Bay Station - Pha	Backhoe	Tab C3/97	105	2	3		108
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Compactor	CNP050	105	2	3		108
			Sub-total						115
D39	D44	Police Station in Penny's Bay Station - Pha	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						112
D40	D45	Fire Station in Penny's Bay Station - Phase	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Poker vibrator	Tab C6/32	100	4	6		106
			Sub-total						112

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
D41	D46	Utility Yard	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	2	3		103
			Sub-total						117
Phase 1 - Theme Park Development									
E43	E48	Theme Park Building/Attraction Foundations in Penny's Bay Station -	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	11	10		120
			Concrete truck (mixer)	Tab C6/35	100	20	13		113
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	8	9		114
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	4	6		107
			Drilling rigs	Tab C11/2	112	8	9		121
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	4	6		116
			Compactor	CNP050	105	3	5		110
			Water pump	CNP282	103	15	12		115
			Pan scrapers	CNP204	119	3	5		124
						Sub-total			
E44	E49	Theme Park Building/Attraction Foundations in Penny's Bay Station -	Compressor > 30m ³ /min	CNP003	104	10	10		114
			Handheld breaker >35kg	Tab C2/10	110	15	12		122
			Concrete truck (mixer)	Tab C6/35	100	30	15		115
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	8	9		114
			Backhoe	Tab C3/97	105	12	11		116
			Mobile crane	Tab C7/114	101	12	11		112
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	2	3		108
			Water pump	CNP282	103	15	12		115
			Tower crane	CNP049	95	10	10		105
			Bobcats	By WDI	114	20	13		127
			Ditch Witch Trencher	By WDI	117	3	5		122
Forklifts	By WDI	113	20	13		126			
			Sub-total						132
E45	E50	Theme Park Surfacing, Landscaping and Berms in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	3	5		115
			Concrete truck (mixer)	Tab C6/35	100	8	9		109
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	12	11		116
			Mobile crane	Tab C7/114	101	4	6		107
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	1	0		105
			Bobcats	By WDI	114	6	8		122
			Ditch Witch Trencher	By WDI	117	3	5		122
Forklifts	By WDI	113	4	6		119			
			Sub-total						127
E46	E51	Ferry Pier Substructure: piling/foundations in Penny's Bay Station- Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	3	5		115
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Derrick lighter plus crane	CNP061	104	1	0		104
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Tugboat	CNP221	110	2	3		113
			Hopper barge/ Pelican barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Water pump	CNP282	103	6	8		111
			Lorry	Tab C8/16	108	2	3		111

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
						(No. has been reduced if cell is in grey)			
			Coring rig	CNP165	115	3	5		120
			Bobcats	By WDI	114	4	6		120
			Sub-total						125
E47	E52	Ferry Pier Superstructure: Precast decking and insitu infill in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Derrick Lighter plus crane	CNP061	104	1	0		104
			Tugboat	CNP221	110	1	0		110
			Hopper Barge/ Pelican Barge/ Barge	CNP061	104	1	0		104
			Mobile crane	Tab C7/114	101	1	0		101
			Generator	Tab C7/62	100	1	0		100
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Bobcats	By WDI	114	4	6		120
			Forklifts	By WDI	113	3	5		118
			Sub-total						123
E48	E53	Ferry Pier Building Foundations in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	2	3		108
			Generator	Tab C7/62	100	2	3		103
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Bobcats	By WDI	114	2	3		117
			Sub-total						129
E49	E54	Ferry Pier Building Superstructure in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Bobcats	By WDI	114	2	3		117
			Ditch Witch Trencher	By WDI	117	4	6		123
			Sub-total						125
E50	E55	Hotels Foundations in Penny's Bay Station Phase 1	Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	10	10		120
			Concrete truck (mixer)	Tab C6/35	100	10	10		110
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	4	6		111
			Excavator/ Loader	Tab C3/97	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	2	3		108
			Water pump	CNP282	103	4	6		109
			Tower crane	CNP049	95	2	3		98
			Bobcats	By WDI	114	4	6		120
			Pan Scrapers	CNP204	119	2	3		122
			Sub-total						127
E51	E56	Hotels Superstructure in Penny's Bay Station - Phase 1	Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	10	10		120
			Concrete truck (mixer)	Tab C6/35	100	20	13		113
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	4	6		111
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	2	3		108
			Tower crane	CNP049	95	3	5		100
			Bobcats	By WDI	114	20	13		127
			Ditch Witch Trencher	By WDI	117	3	5		122
			Forklifts	By WDI	113	20	13		126

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
Sub-total									131
E52		Water Recreation Centre - Foundation	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	1	0		115
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Water pump	CNP282	103	2	3		106
			Sub-total						
E53		Water Recreation Centre - Superstructure	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	2	3		113
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Poker vibrator	Tab C6/32	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Water pump	CNP282	103	2	3		106
			Sub-total						
Phase 2		Reclamation & Excavation							
F61	F64	Slope Protection along southern boundary of TCT	Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	6	8		118
			Concrete truck (mixer)	Tab C6/35	100	3	5		105
			Dump truck	Tab C9/27	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
Sub-total									120
F62	F65	Dredging for Theme Park phase 2	Grab dredger	CNP063	112	1	0		112
Sub-total									112
F63	F66	Placement of seawall for Theme Park phase 2	Grab dredger	CNP063	112	1	0		112
			Derrick lighter	CNP061	104	2	3		107
			Tugboat	CNP221	110	4	6		116
			Hopper barge/ Pelican barge/ Barge	CNP061	104	2	3		107
Sub-total									118
F64	F67	Filling reclamation for Theme Park phase 2	Grab dredger	CNP063	112	2	3		115
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	5	7		112
			Tugboat	CNP221	110	3	5		115
			Loading shovel (excavator)	Tab C3/97	105	2	3		108
			Hopper barge/ Pelican barge/ Barge	CNP061	104	3	5		109
			Crane/vibrocompaction	By SWHK	112	2	3		115
			Land drain rig (compressor)	CNP003	104	1	0		104
Marine drain rig (compressor)	CNP003	104	1	0		104			
Sub-total									121
F65	F68	Surcharge placement for Theme Park phas	Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	8	9		114
			Loading shovel (excavator)	Tab C3/97	105	2	3		108
Sub-total									116
Transport Infrastructure									
G94	G101	Road Surfacing / Construction at grade incl. roadside buffers: Road P2 Theme Park East Roundabout	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
Sub-total									116
G95	G102	Road Surfacing / Construction at grade incl. roadside buffers: Road D2 Theme Park East Roundabout to Theme Park	Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
Roller	Tab C8/27	104	2	3		107			

Table C2.3 - Plant Inventory (Use of Quiet Plant, Barrier)

ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
Sub-total									116
G96	G103	Road Surfacing / Construction at grade incl. roadside buffers, Road P2 Theme Park East Roundabout to Pa Kwu Interchange	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	3	5		110
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Roller	Tab C8/27	104	2	3		107
Sub-total									115
Services Infrastructure									
G102	H109	Installation of Utilities / Services i.e electricity, gas, telecom etc.	Compressor > 30m ³ /min	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
Sub-total									107
G103	H110	Installation of Water mains Fresh and Salt including irrigation	Compressor > 30m ³ /min	CNP003	104	1	0	-10	94
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	2	3	-10	93
			Lorry	Tab C8/16	108	1	0		108
Sub-total									111
G104	H111	Installation of sewerage mains both gravity and pumped including pumping stations, chambers and wells	Compressor > 30m ³ /min	CNP003	104	1	0	-10	94
			Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Lorry	Tab C8/16	108	1	0		108
Sub-total									111
G105	H112	Installation of Stormwater drainage, open channels plus culverts	Compressor > 30m ³ /min	CNP003	104	1	0	-10	94
			Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0	-5	100
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	4	6	-10	96
			Lorry	Tab C8/16	108	1	0		108
Sub-total									111
GIC Sites									
H109	I116	P.T.I in Penny's Bay Station- Phase 2	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
Sub-total									118
H110	I117	Public Parking in Penny's Bay -Phase 2	Backhoe	Tab C3/97	105	2	3		108
			Grader	Tab C9/11	110	1	0		110
			Tarmac paver	Tab C8/24	101	1	0		101
			Tarmac truck	Tab C9/27	105	2	3		108
			Compactor	CNP050	105	2	3		108
Sub-total									115
H111	I118	2nd Fire Station in Penny's Bay	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Dump truck	Tab C9/27	105	1	0		105
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	4	6		106
Sub-total									117
H112	I119	Utility Yard in Penny's Bay - Phase 2	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	1	0		100
			Dump truck	Tab C9/27	105	1	0		105

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ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
						(No. has been reduced if cell is in grey)			
			Backhoe	Tab C3/97	105	1	0		105
			Mobile crane	Tab C7/114	101	1	0		101
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	2	3		103
			Sub-total						117
Theme Park Development									
J117	J124	Theme Park Building/Attraction Foundation	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	11	10		120
			Concrete truck (mixer)	Tab C6/35	100	20	13		113
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/loader	Tab C3/97	105	8	9		114
			Backhoe	Tab C3/97	105	4	6		111
			Mobile crane	Tab C7/114	101	4	6		107
			Drilling rig	Tab C11/2	112	8	9		121
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	4	6		116
			Compactor	CNP050	105	3	5		110
			Water pump	CNP282	103	15	12		115
			Pan Scrapers	CNP204	119	3	5		124
			Sub-total						128
J118	J125	Theme Park Building/Attraction Constructio	Compressor > 30m ³ /min	CNP003	104	10	10		114
			Handheld breaker >35kg	Tab C2/10	110	15	12		122
			Concrete truck (mixer)	Tab C6/35	100	30	15		115
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/loader	Tab C3/97	105	8	9		114
			Backhoe	Tab C3/97	105	12	11		116
			Mobile crane	Tab C7/114	101	12	11		112
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	2	3		108
			Water pump	CNP282	103	15	12		115
			Tower crane	CNP049	95	10	10		105
			Bobcats	By WDI	114	20	13		127
			Ditch Witch Trencher	By WDI	117	3	5		122
			Forklifts	By WDI	113	20	13		126
			Sub-total						132
J119	J126	Theme Park Surfacing, Landcapping and Bar	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	3	5		115
			Concrete truck (mixer)	Tab C6/35	100	8	9		109
			Dozer	Tab C9/2	104	4	6		110
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	12	11		116
			Mobile crane	Tab C7/114	101	4	6		107
			Generator	Tab C7/62	100	4	6		106
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Compactor	CNP050	105	1	0		105
			Bobcats	By WDI	114	6	8		122
			Ditch Witch Trencher	By WDI	117	3	5		122
			Forklifts	By WDI	113	4	6		119
			Sub-total						127
J120	J131	Hotels Foundations	Compressor > 30m ³ /min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	12	11		121
			Concrete truck (mixer)	Tab C6/35	100	12	11		111
			Dozer	Tab C9/2	104	3	5		109
			Dump truck	Tab C9/27	105	6	8		113
			Excavator/ Loader	Tab C3/97	105	4	6		111
			Backhoe	Tab C3/97	105	3	5		110
			Generator	Tab C7/62	100	6	8		108
			Lorry	Tab C8/16	108	3	5		113
			Grader	Tab C9/11	110	3	5		115
			Compactor	CNP050	105	3	5		110
			Water pump	CNP282	103	6	8		111
			Tower crane	CNP049	95	3	5		100
			Bobcats	By WDI	114	6	8		122
			Pan scrapers	CNP204	114	2	3		117
			Sub-total						127
J121	J132	Hotels Superstructure	Compressor > 30m ³ /min	CNP003	104	3	5		109
			Handheld breaker >35kg	Tab C2/10	110	2	3		113

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ID	SWHK	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
		Item no.	(No. has been reduced if cell is in grey)						
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Excavator/ Loader	Tab C3/97	105	3	5		110
			Backhoe	Tab C3/97	105	3	5		110
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	6	8		108
			Lorry	Tab C8/16	108	3	5		113
			Grader	Tab C9/11	110	3	5		115
			Compactor	CNP050	105	3	5		110
			Tower crane	CNP049	95	3	5		100
			Sub-total						121
N137		Theme Park Development - Theme Park Extension (WDI Option)							
		Theme Park Extension - foundations	Compressor >30m ³ /min	CNP003	104	4	6	-10	100
			Handheld breaker >35kg	Tab C2/10	110	4	6	-10	106
			Concrete truck (mixer)	Tab C6/35	100	4	6	-10	96
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	2	3	-5	103
			Backhoe	Tab C3/97	105	2	3	-5	103
			Mobile Crane	Tab C7/114	101	2	3	-5	99
			Generator	Tab C7/62	100	2	3	-10	93
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3	-5	108
			Waterpump	CNP282	103	4	6	-10	99
			Bobcats	By WDI	114	5	7		121
			Ditch Witch Trencher	By WDI	117	1	0		117
			Forklifts	By WDI	113	10	10		123
			Pan Scrapers	CNP204	119	1	0		119
			Sub-total						127
N138		Theme Park Extension - superstructure							
			Compressor >30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	4	6		116
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Mobile Crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Lorry	Tab C8/16	108	2	3		111
			Waterpump	CNP282	103	4	6		109
			Tower crane	CNP049	95	1	0		95
			Sub-total						119
N139		RD&E Foundations							
			Compressor >30m ³ /min	CNP003	104	4	6		110
			Handheld breaker >35kg	Tab C2/10	110	8	9		119
			Concrete truck (mixer)	Tab C6/35	100	10	10		110
			Dozer	Tab C9/2	104	2	3		107
			Dump truck	Tab C9/27	105	2	3		108
			Excavator/ Loader	Tab C3/97	105	3	5		110
			Backhoe	Tab C3/97	105	2	3		108
			Mobile Crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Lorry	Tab C8/16	108	2	3		111
			Grader	Tab C9/11	110	2	3		113
			Waterpump	CNP282	103	4	6		109
			Pan Scrapers	CNP204	119	1	0		119
			Sub-total						124
N140		RD&E Superstructure							
			Compressor >30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	8	9		119
			Concrete truck (mixer)	Tab C6/35	100	10	10		110
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Backhoe	Tab C3/97	85	2	3		88
			Mobile Crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	2	3		103
			Lorry	Tab C8/16	108	2	3		111
			Waterpump	CNP282	103	4	6		109
			Tower crane	CNP049	95	1	0		95
			Bobcats	By WDI	114	10	10		124
			Ditch Witch Trencher	By WDI	117	2	3		120
			Forklifts	By WDI	113	10	10		123
			Sub-total						128
Phase 3		Penny's Bay Rail Link							
		Yam O Station & Adjacent Section							
T164	T183	Foundation (Concreting)	Concrete truck (mixer)	Tab C6/35	100	2	3	-10	93
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0	-10	96
			Poker vibrator	Tab C6/32	100	6	8	-10	98
			Sub-total						101

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ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
T165	T184	Foundation (Formwork & Reinforcement)	Compressor ≤ 10m ³ /min	CNP001	100	1	0	-10	90
			Generator	Tab C7/62	100	1	0	-10	90
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Bar bender	CNP021	90	1	0	-10	80
			Sub-total						
T166	T185	Excavation	Compressor ≤ 10m ³ /min	CNP001	100	4	6	-10	96
			Breaker, excavator mounted (hydraulic)	Tab C3/97	105	1	0	-10	95
			Excavator/ Loader	Tab C3/97	105	2	3	-5	103
			Lorry	Tab C8/16	108	3	5		113
			Submersible pump	by MTRC	96	1	0	-10	86
		Sub-total							113
T167	T186	Station Construction	Compressor ≤ 10m ³ /min	CNP001	100	2	3	-10	93
			Handheld breaker 20kg≤mass≤35kg	CNP025	111	2	3	-10	104
			Concrete truck (mixer)	Tab C6/35	100	3	5	-10	95
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Poker vibrator	Tab C6/32	100	6	8	-10	98
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0	-10	96
			Lorry	Tab C8/16	108	1	0		108
			Tower crane	CNP049	95	2	3		98
			Hoist, material (electric)	CNP122	95	1	0		95
			Saw, circular, wood	CNP201	108	1	0	-10	98
		Sub-total							111
T168	T187	Sheet Piling for Protection on Existing Tracks/ Platforms	Sheet piling (hydraulic vibratory driver)	BS 5228: Part4:1992 Tab 1/53	118	1	0	-10	108
			Sub-total						108
T169	T188	Tunnel Portal (Start-up Works) Excavation	Excavator/ Loader (for Trench)	Tab C3/97	105	3	5	-5	105
			Lorry	Tab C8/16	108	6	8		116
			Sub-total						
T170	T189	Sheet Piling	Sheet piling (hydraulic vibratory driver)	BS 5228: Part4:1992 1/53	118	1	0		118
			Sub-total						118
T171	T190	Soil Nail Installation and Initial Tunnel Excavation	Compressor ≤ 10m ³ /min	CNP001	100	3	5	-10	95
			Drilling Rigs	Tab C11/ 1	117	2	3	-10	110
			Sub-total						
T172	T191	Re-construction of Roads	Vibrating roller	Tab C8/27	104	1	0		104
			Dozer	Tab C9/2	104	1	0		104
			Sub-total						
T173	T192	Mechanical Rock Excavation	Breaker, excavator mounted (hydraulic)	Tab C3/97	105	2	3		108
			Sub-total						108
T174	T193	Tunnel Works Works at Tunnel Portal	Compressor > 30m ³ /min	CNP003	104	4	6	-10	100
			Mobile crane	Tab C7/114	101	1	0	-5	96
			Lorry	Tab C8/16	108	1	0		108
			Ventilation fan	CNP241	108	2	3	-10	101
			Forklift	By WDI	113	1	0		113
			Batching Plant	CNP022	108	1	0		108
			Sub-total						
T175	T194	Removal of Spoil at Tunnel Portal	Excavator/Loader	Tab C3/97	105	1	0	-5	100
			Lorry	Tab C8/16	108	3	5		113
			Sub-total						
T176	B19	Concrete Lining, Track Laying	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Excavator/ Loader	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	1	0		101
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0		106
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						
T177	T195	At Grade Trackwork Surface Drainage Construction including pumps to control water influx	Compressor > 30m ³ /min	CNP003	104	2	3	-10	97
			Concrete truck (mixer)	Tab C6/35	100	1	0	-10	90
			Dozer	Tab C9/2	104	1	0		104
			Dump truck	Tab C9/27	105	2	3		108
			Crane/vibrocompaction	By SWHK	112	1	0	-10	102
			Excavator/ Loader	Tab C3/97	105	2	3	-5	103
			Mobile Crane	Tab C7/114	101	2	3	-5	99

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ID	SWHK Item no.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Barr. Corr.	Sum
(No. has been reduced if cell is in grey)									
			Poker vibrator	Tab C6/32	100	1	0	-10	90
			Concrete lining machine (pump)	Tab C6/22	106	1	0	-10	96
			Lorry	Tab C8/16	108	1	0		108
			Water pump	CNP282	103	8	9	-10	102
			Sub-total						113
T178	T196	Track Laying	Generator	Tab C7/62	100	1	0		100
			Diesel locomotive	from West Rail	118	2	3		121
			Lorry	Tab C8/16	108	1	0		108
			Sub-total						121
Disney Station									
T179	T197	Excavation	Generator	Tab C7/62	100	2	3		103
			Excavator/ Loader	Tab C3/97	105	3	5		110
			Lorry	Tab C8/16	108	8	9		117
			Sub-total						118
T180	T198	Foundation (Concreting)	Concrete truck (mixer)	Tab C6/35	100	2	3		103
			Poker vibrator	Tab C6/32	100	6	8		108
			Concrete lining machine (concrete pump)	Tab C6/22	106	1	0		106
			Sub-total						111
T181	T199	Foundation (Formwork & Reinforcement)	Compressor ≤ 10m ³ /min	CNP001	100	1	0		100
			Generator	Tab C7/62	100	2	3		103
			Mobile crane	Tab C7/114	101	1	0		101
			Bar bender	CNP021	90	1	0		90
			Sub-total						106
T182	T200	Station Construction	Compressor ≤ 10m ³ /min	CNP001	100	4	6		106
			Handheld breaker 20kg≤mass≤35kg	CNP025	111	4	6		117
			Concrete truck (mixer)	Tab C6/35	100	3	5		105
			Mobile crane	Tab C7/114	101	2	3		104
			Poker vibrator	Tab C6/32	100	6	8		108
			Lorry	Tab C8/16	108	1	0		108
			Tower crane	CNP049	95	1	0		95
			Sub-total						119
Ventilation Building									
T183	B17	Ventilation Building Foundations	Compressor > 30m ³ /min	CNP003	104	2	3		107
			Handheld breaker >35kg	Tab C2/10	110	3	5		115
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Dump truck	Tab C9/27	105	2	3		108
			Backhoe	Tab C3/97	105	2	3		108
			Generator	Tab C7/62	100	1	0		100
			Vibratory piling rig	CNP164	115	1	0		115
			Poker vibrator	Tab C6/32	100	1	0		100
			Sub-total						119
T184	B18	Ventilation Building Superstructure	Compressor > 30m ³ /min	CNP003	104	1	0		104
			Concrete truck (mixer)	Tab C6/35	100	4	6		106
			Backhoe	Tab C3/97	105	2	3		108
			Mobile crane	Tab C7/114	101	2	3		104
			Generator	Tab C7/62	100	1	0		100
			Poker vibrator	Tab C6/32	100	1	0		100
			Sub-total						112

Annex C3

Construction Noise Impact Assessment - Predicted Noise Levels

Annex C3a:	Unmitigated Noise Levels
Annex C3b:	Predicted Noise Levels with Quiet Plant
Annex C3c:	Predicted Noise Levels at Luk Keng Tsuen with Quiet Plant & Barriers

Table C3a.1 - Unmitigated Noise Levels

NSR: Fung Chiu
 Date: 07/10/2014
 Project: 100-2100
 Receiving Point: 100-2100
 Emission Point: 100-2100
 Emission Time: 07:00-19:00
 Emission Level: 60(dBA) during 1900-2100
 Part 3

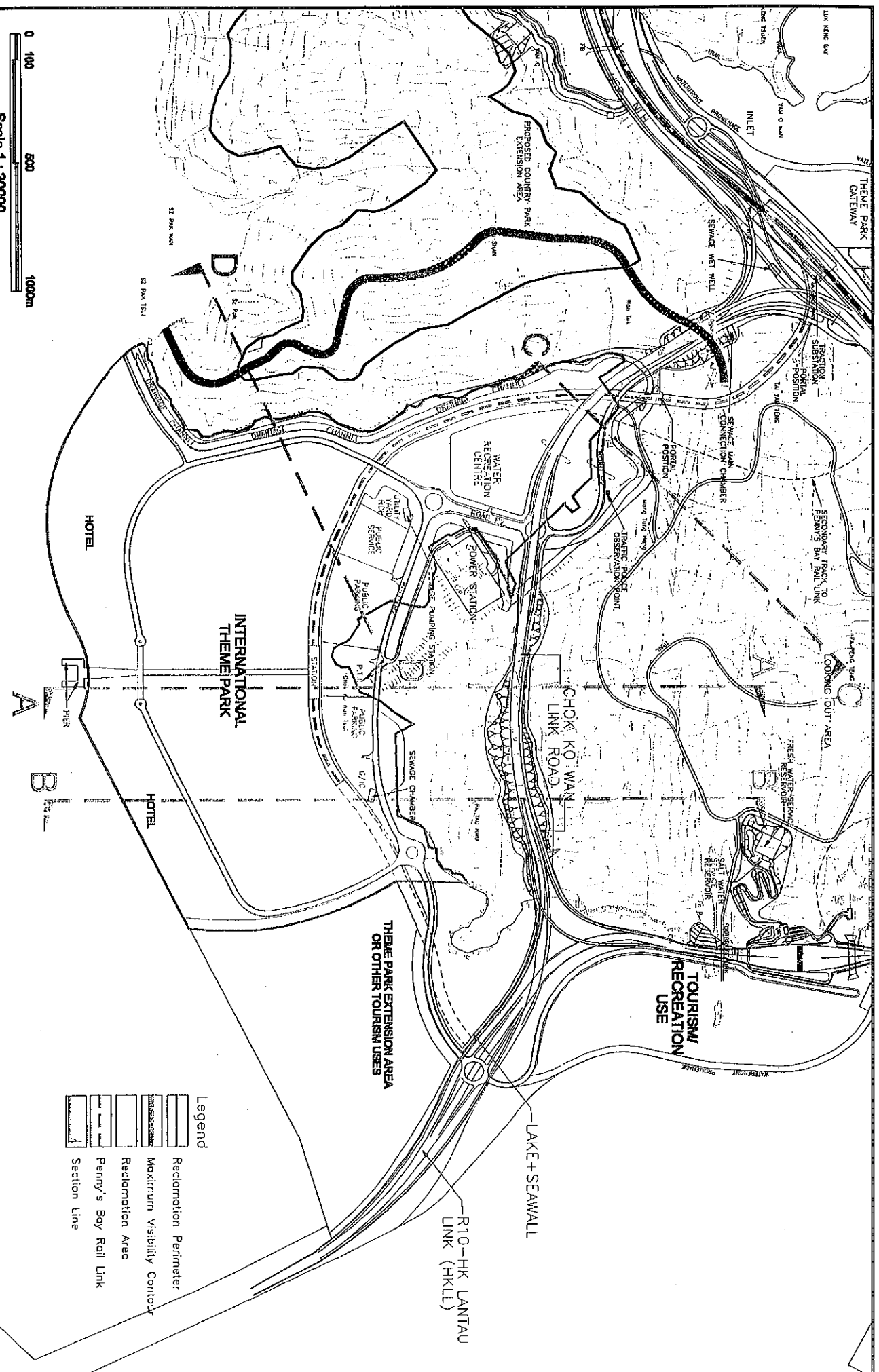
Item No.	Activity	Distance (m)	NSR (dBA)	20	21	22	23	24	25	26	27	28	29	30	31
1183	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1184	Form O' Station & adjacent Section	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1185	Foundation (concreting)	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1186	Excavation (concrete & reinforcement)	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1187	Station construction	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1188	Sheet piling for protection on existing tracks / platform	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1189	Formwork (Stackup Work)	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1190	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1191	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1192	Reconstruction of track	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1193	Mechanical work excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1194	Tunnel Works	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1195	Works at tunnel portal	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1196	Removal of spoil at tunnel portal	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1197	Concrete lining - track laying	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1198	Trackwork, OHL & Trip	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1199	Surface drainage construction including jumps to control water	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1200	Track laying	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1201	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1202	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1203	Foundation (concreting)	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1204	Excavation (concrete & reinforcement)	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1205	Station construction	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1206	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1207	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1208	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1209	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1210	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1211	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1212	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1213	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1214	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1215	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1216	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1217	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1218	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1219	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1220	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1221	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1222	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1223	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1224	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1225	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1226	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1227	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1228	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1229	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1230	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1231	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1232	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1233	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1234	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1235	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1236	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1237	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1238	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1239	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1240	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1241	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1242	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1243	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1244	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1245	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1246	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1247	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1248	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1249	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1250	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1251	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1252	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1253	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1254	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1255	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1256	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1257	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1258	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1259	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1260	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1261	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1262	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1263	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1264	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1265	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1266	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1267	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1268	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1269	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1270	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1271	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1272	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1273	Excavation	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1274	Formwork	4250	12.0	0	0	0	0	0	0	0	0	0	0	0	0
1275	Excavation	4250	12.0	0	0	0	0	0							

Table C3a.2 - Unmitigated Noise Levels

EM Noise Source	Description	NSR: Discovery Bay											
		1700	1730	1800	1830	1900	1930	2000	2030	2100	2130	2200	2230
A	Excavation & Extraction	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
A1	Slope protection in Penny's Bay Wet	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
A2	Drilling at Theme Park Phase 1	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
A3	Excavation & Extraction at Theme Park Phase 1	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
A4	Excavation & Extraction at Theme Park Phase 1	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
A5	Excavation & Extraction at Theme Park Phase 1	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
A6	Demolition part of Cheong Lee	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A7	Ground excavation in Cheong Lee (ground contamination)	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A8	Excavation to be in at existing Yam O breachage	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A9	Blasting in Yam O section	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A10	Excavation & Extraction in Yam O section	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A11	Slope protection in Penny's Bay from Adjacent to road P2	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A12	Drilling using seawater in Yam O PFI	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A13	Excavation & Extraction in Yam O PFI	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A14	Excavation & Extraction in Yam O PFI	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A15	Excavation & Extraction in Yam O PFI	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B	Temporary Infrastructure	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
B1	Temporary Road Surfacing / Construction of grade - Temporary access road	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
B2	Construction of foundations for superstructure - CM&E item	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B3	Road surfacing / Construction at grade - CR&ER from Yam O to Penny's Bay	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B4	Interchange / Construction of viaducts including doubley / CM&E item	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B5	Yam O to Penny's Bay Interchange	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B6	Road surfacing / Construction of grade - Road P2	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B7	Road surfacing / Construction of grade and crossable buffer - Road P2 Northside	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B8	Development of Theme Park Wetland section including doubley / Road P2	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B9	Northside Development to Theme Park Wet	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B10	Road surfacing / Construction of grade and crossable buffer - Road D1 Theme Park	2045	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
B11	Wall Roundabout to Theme Park	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B12	Road surfacing / Connection at grade - Access Road at Yam O to Yam O from road P2 to Yam O to D1 Station	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B13	General pedestrian walkway surfacing / construction - Approx. Middle of proposed site boundary between Phase 1 and Phase 2 expansion	2551	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
C	Services Infrastructure	2045	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
C1	Installation of Utility Services (ie electricity, gas, telecom etc.)	2045	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
C2	Placement of utility manholes plus associated networks to be able to lay out up	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C3	Form adjacent drainage system	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C4	Installation of stormwater drains	2045	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
C5	Installation of stormwater drains including pumping station, channels and weirs	2045	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
C6	Installation of stormwater drainage, open channels plus culverts	2045	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
D	QC Sites	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D1	PFI in Yam O Station	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
D2	PFI in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
D3	PFI in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
D4	PFI in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
D5	Fire Station in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
D6	Utility Yard in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E	Theme Park Development	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E1	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E2	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E3	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E4	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E5	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E6	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E7	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E8	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E9	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E10	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E11	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E12	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E13	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E14	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E15	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E16	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E17	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E18	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E19	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E20	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E21	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E22	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
E23	Theme Park building foundations in Penny's Bay Station - Phase 1	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
F	Excavation & Extraction	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
F1	Slope protection along southern boundary of TCT	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
F2	Excavation & Extraction at Theme Park Phase 2	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
F3	Excavation & Extraction at Theme Park Phase 2	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
F4	Excavation & Extraction at Theme Park Phase 2	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
F5	Excavation & Extraction at Theme Park Phase 2	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
G	Temporary Infrastructure	2100	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
G1	Road surfacing / Construction at grade and crossable buffer - Road P2 Theme Park	3101	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
G2	Road surfacing / Construction at grade and crossable buffer - Road O2 Theme Park	2777	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
G3	Road surfacing / Construction at grade and crossable buffer - Road P2 Theme Park	4015	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
H	Services Infrastructure	2777	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
H1	Installation of Utility Services (ie electricity, gas, telecom etc.)	2777	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
H2	Placement of utility manholes plus associated networks to be able to lay out up	2777	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
H3	Form adjacent drainage system	2777	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
H4	Installation of stormwater drains	2777	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
H5	Installation of stormwater drains including pumping station, channels and weirs	2777	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
H6	Installation of stormwater drainage, open channels plus culverts	2777	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
I	QC Sites	2777	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
I1	PFI in Penny's Bay Station - Phase 2	3350	8.1	8.1	8.1								

Table C3a.3 - Unmitigated Noise Levels

ERM Activity	NBR Luk Keng Tsuen		Distance (m)																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
ERM Activity	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1164	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
1165	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1166	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1167	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1168	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1169	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1171	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1172	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1173	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1174	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1175	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1176	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1177	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1178	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1179	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1180	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1181	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1182	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1183	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1184	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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AGREEMENT NO. CE 60 / 96
NORTHSHORE LANTAU DEVELOPMENT
FEASIBILITY STUDY

This Detail of Visibility Contour (Reclamation)
Figure No. K.4.6
(CAD Ref: D:\Dwg\209\209-41B)

- Legend
- Reclamation Perimeter
 - Maximum Visibility Contour
 - Reclamation Area
 - Penny's Bay Rail Link
 - Section Line

Scott Wilson (Hong Kong) Ltd
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ERM Hong Kong - Shunghoed Coe Asia Ltd. - Withier Smith Associates

Annex C4

Night-time Construction Noise Impact Assessment

Table C4.1 - Night-time Construction Plant Inventory

ERM No.	SWHK Item No.	Activity	Plant Required	PME Code	SWL	No. of plants	Plant No. Corr.	Sum
A2	A2	Dredging at Theme Park Phase 1	Grab dredger	By SWHK	112	1	0	112
			TS dredger	By SWHK	109	1	0	109
				Sub-total				
A4	A4	Filling at Theme Park Phase 1	Grab dredger	By SWHK	112	2	3	115
			TS dredger	By SWHK	109	4	6	115
			CS dredger	By SWHK	104	2	3	107
				Sub-total				

Annex C5

Noise Measurement Results
at Anaheim, California
Disneyland

#1. Data on noise levels at the berm was measured at three locations at the Disneyland Park. These locations are shown on the following map as Figure 1 and the data for the Leq and Maximum levels are also shown in Figures 2 and 3.

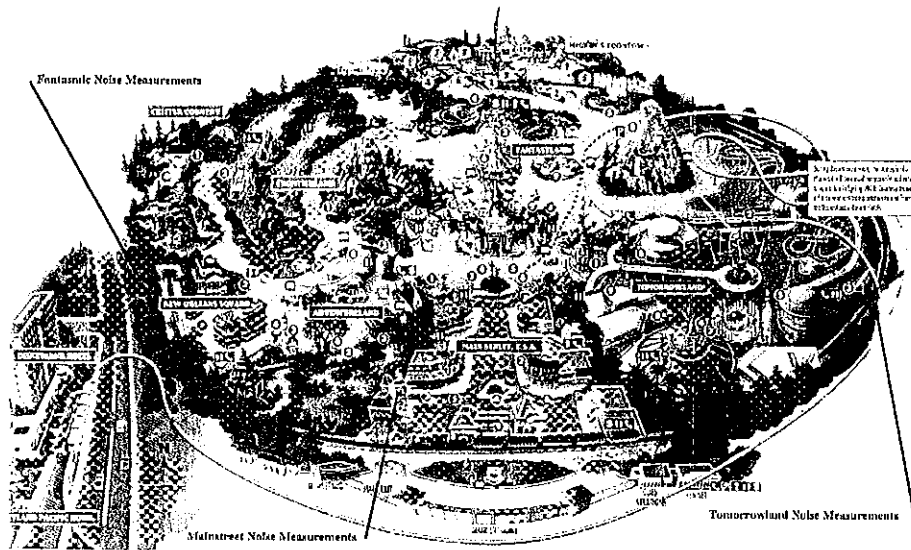


Figure 1. Locations of berm noise level measurements at Disneyland

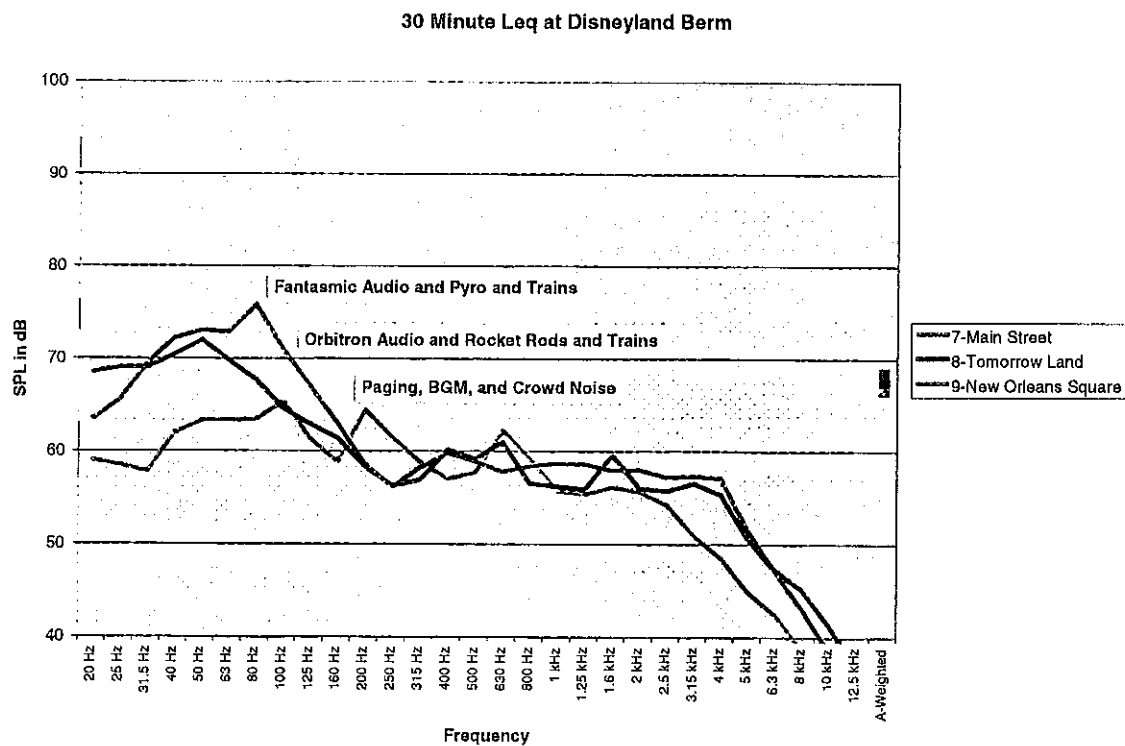


Figure 2. Average noise levels at Berm around Disneyland

The position on Main Street was above the Town Hall building, and simulates the berm at the entrance of the park. This location was chosen to avoid the noise of train operations, which will not be a feature of the new park. The location in Tomorrowland was on the top of the berm adjacent to the Tomorrowland train station. The Fantasmic location was across the tracks from the train station directly in front of the berm at New Orleans Square. The Fantasmic show, approximately 100 meters away, was playing to guests directly in the line of sight from this location.

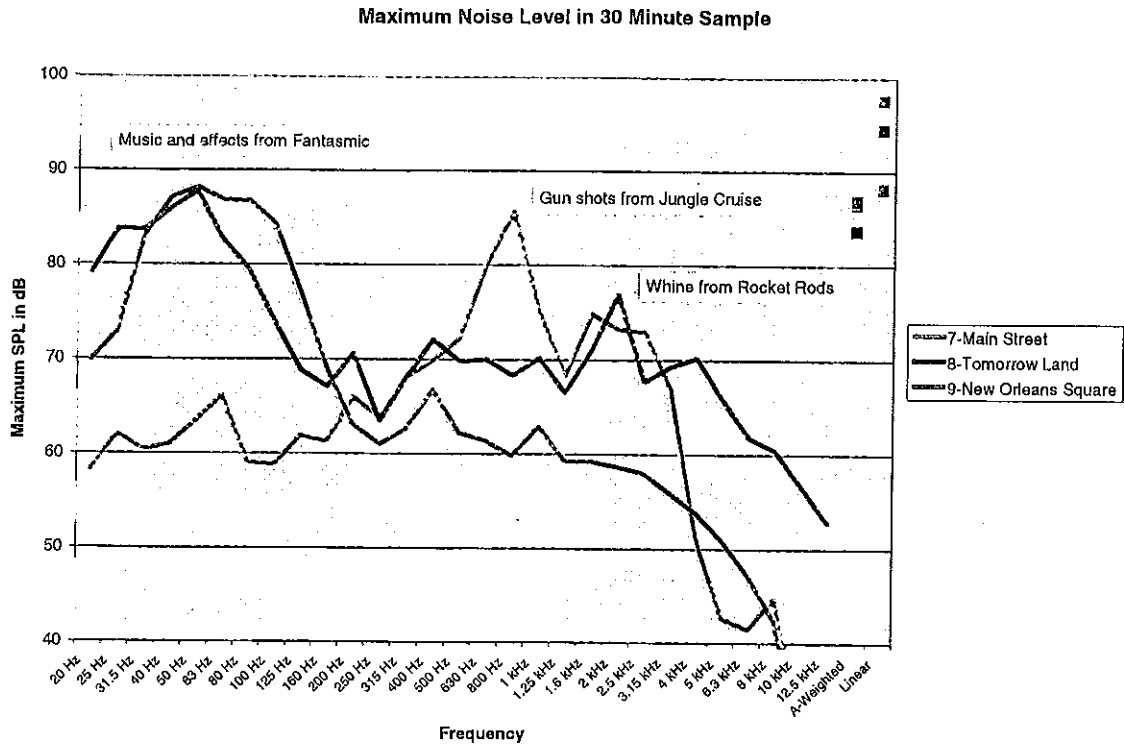


Figure 3. Maximum noise levels at Berm around Disneyland

#2. Typical noise levels inside Disneyland are shown in the following table. These measured levels are predominately Leq_{8sec} samples and represent both noisy and quiet areas of the park. Screaming from thrill rides is specifically addressed. This data is based on measured screams from the installed Space Shot attraction at Disney's California Adventure (DCA) in Anaheim and show that there are situations where the noise level at the berm can approach 75 dBA.

Location	Measured Noise Level in dBA	Sources
Tomorrowland	76.5, 79.1, 83.6	Rocket Rods ride at 50 meters, background music, and crowd noise
Main Street USA	68.5, 68.9, 69.4	Crowd noise and background music
Main Street USA	96.6	Parade Music in crowd
New Orleans Square	74.9, 77.8	Crowd noise and background music
Fantasy Land	75	Crowd noise and Carrousel music
DCA Space Shot, predicted	71 dBA max, 65.2 dBA Leq_{30}	4 screamers measured at 170 meters
DCA Roller Coaster	78.8 dBA max, 73 dBA Leq_{30}	24 screamers measured at 170 meters

Annex C6

Theme Park Operational Noise Assessment

The noise assessment process includes the following key steps:

- (a) Computation of Theme Park Sound Power Level (SWL);
- (b) Establishment of the noise transmission from Theme Park to NSR due to distance attenuation but without accounting for shielding effects as offered by boundary berms and hotel strip;
- (c) Calculation of applicable shielding effects; and
- (d) Combination of (b) and (c) above to predict resultant noise levels at NSR.

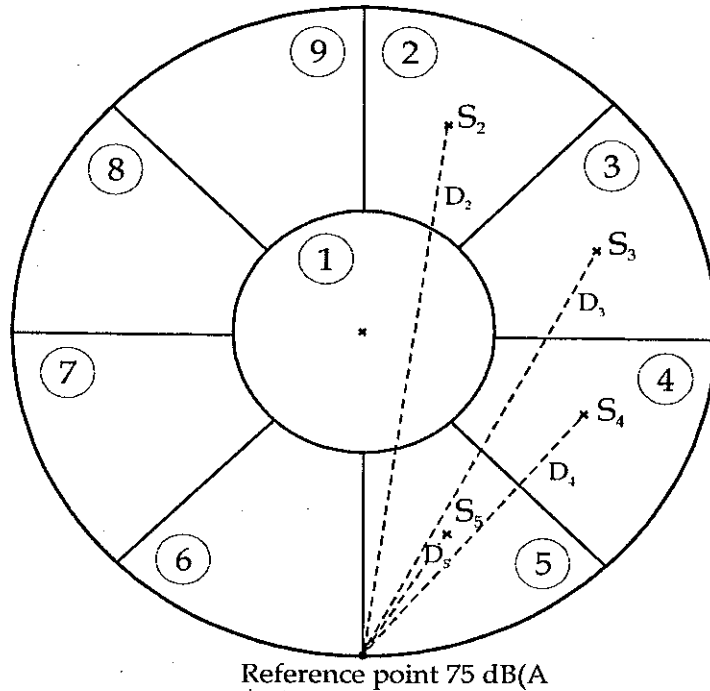
(a) *Computation of Theme Park SWL*

Given 75 dB(A) Sound Pressure Level (SPL) at boundary. Assuming there are nine sources of same strength.

Assuming nine sources - six "lands" (Fantasy, Frontier, Adventure, Tomorrow, Toon and area reserved for Expansion) and three other attraction locations (Main Street, Castle and Hub) in each phase of the Theme Park.

Each of these "lands" and attractions have the same SWL (a conservative approach) but would contribute a resultant SPL of 75 dB(A) at boundary.

Diameter of each phase of Theme Park = 700m (r = 350m; total circle area = 384,845 m². If divided into 9 equal sectors, each sector has an area = 42,761 m²)



Centre sector has radius of $r_c = 116.7$ m

$D_1 = 350$ m

$D_5 = D_6 = 150$ m

$D_4 = D_7 = 342$ m

$D_3 = D_8 = 500$ m

$D_2 = D_9 = 585$ m

$$SPL = SWL - 10\log(2\pi D^2)$$

Sector Number	SWL	"D"	$10\log(2\pi D^2)$	SPL
5+6	124.9	150	-51.5	73.4
4+7	124.9	342	-58.7	66.2
3+8	124.9	500	-62.0	62.9
2+9	124.9	585	-63.3	61.6
1	121.9	350	-58.9	63.0
Total				75.0

Therefore, SWL of each source is 121.9 dB(A).

(b) Transmission from Theme Park to NSR (without shielding effect)

The conservative method to establish the resultant noise transmission from multiple sources located close to one another is:

- Taking the Theme Park as 18 sources (9 sources in each phase), work out the individual contributions to the NSR and then combine them.

It has been established in (a) above that each sector of the 700m diameter circle has a SWL of 121.9 dB(A). There are a total of 9 sectors in each phase.

Take Discovery Bay (Tai Pak Tsui) as the NSR for computing the final resultant SPL from individual contributions.

Sector	SWL	"d" (m)	-10log(2πd ²)	SPL at NSR
Phase 1: 1	121.9	2400	-75.6	46.3
2 + 9	124.9	2625	-76.4	48.5
3 + 8	124.9	2510	-76.0	48.9
4 + 7	124.9	2330	-75.3	49.6
5 + 6	124.9	2200	-74.8	50.1
Phase 2: 1	121.9	3180	-78.0	43.9
2 + 9	124.9	3400	-78.6	46.3
3 + 8	124.9	3285	-78.3	46.6
4 + 7	124.9	3100	-77.8	47.1
5 + 6	124.9	2950	-77.4	47.5
Total SPL at NSR:				57.8 dB(A)

The comprehensive computations (after accounting for shielding effects, atmospheric absorption, etc.) are shown in (d) below.

(C) Calculation of Shielding Effects

Shielding by berm (9m high approximately)

From ISO 9613-2, barrier attenuation

$$D_z = 10 \log \left[3 + \left(\frac{C_2}{\lambda} \right) C_3 z K_{met} \right] \text{ dB}$$

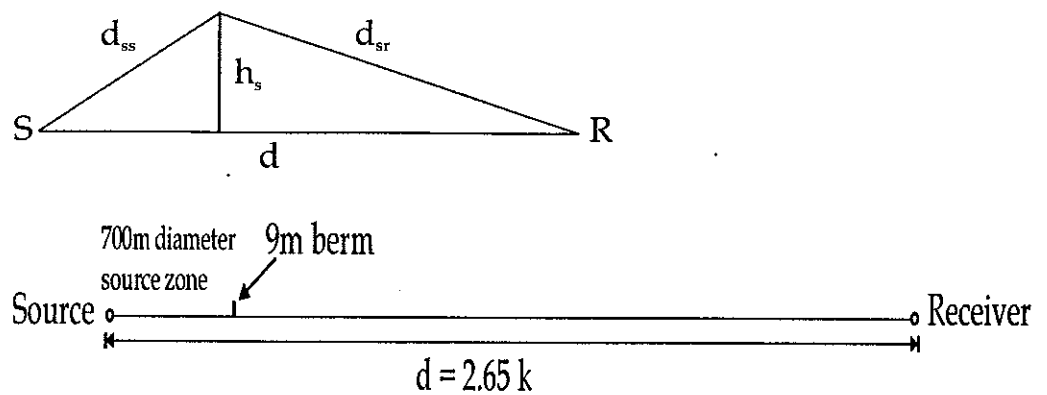
Where $C_2 = 20$, includes effects of ground reflection (here water)

$C_3 = 1$, for single diffraction

$\lambda =$ wavelength, $\lambda_{500\text{Hz}} = 0.69\text{m}$

$z =$ path length difference $= d_{ss} + d_{sr} - d$

Case 1: Source located at centre of 700m diameter circle



$$\begin{aligned} d_{ss} &= (350^2 + 8^2)^{1/2} = 350.091\text{m} \\ d_{sr} &= (2300^2 + 8^2)^{1/2} = 2300.014\text{m} \\ d &= 2650\text{m} \\ z &= 350.091 + 2300.014 - 2650 = 0.105\text{m} \end{aligned}$$

$$\begin{aligned} K_{met} &= \exp \left[-(1/2000) \sqrt{(d_{ss} d_{sr} d / 2z)} \right] \\ &= \exp \left[-(1/2000) \sqrt{(2.1335 \times 10^9 / 0.21)} \right] \\ &= 1.29 \times 10^{-22} \\ &= 0 \text{ approximately} \end{aligned}$$

Barrier attenuation of berm:

$$\begin{aligned} D_z &= 10 \log \left[3 + \frac{20}{0.69} K_{met} \right] \text{ dB} \\ &= 4.8 \text{ dB or } 5 \text{ dB approximately} \end{aligned}$$

Case 2: Source located close to far side of 700m diameter circle (at 585m)

$$\begin{aligned} d_{ss} &= (585 + 8^2)^{1/2} = 585.055\text{m} \\ d_{sr} &= (2300 + 8^2)^{1/2} = 2300.014\text{m, unchanged} \\ d &= 2885\text{m} \\ z &= 585.055 + 2300.014 - 2885 = 0.069\text{m} \end{aligned}$$

$$\begin{aligned}
K_{\text{met}} &= \exp [-(1/2000) \sqrt{(d_{\text{ss}}d_{\text{sr}}d/2z)}] \\
&= \exp [-(1/2000) \sqrt{(3.8822 \times 10^9/(2 \times 0.069))}] \\
&= 3.794 \times 10^{-37} \\
&= 0 \text{ approximately}
\end{aligned}$$

Barrier attenuation of berm:

$$\begin{aligned}
D_z &= 10 \log [3 + \frac{20}{0.69} K_{\text{met}}] \text{ dB} \\
&= 5 \text{ dB approximately}
\end{aligned}$$

Case 3: Source located close to near side of 700m diameter circle (at 150m)

$$\begin{aligned}
d_{\text{ss}} &= (150 + 8^2)^{1/2} = 150.213\text{m} \\
d_{\text{sr}} &= (2300 + 8^2)^{1/2} = 2300.014\text{m, unchanged} \\
d &= 2450\text{m} \\
z &= 150.213 + 2300.014 - 2450 = 0.227\text{m}
\end{aligned}$$

$$\begin{aligned}
K_{\text{met}} &= \exp [-(1/2000) \sqrt{(d_{\text{ss}}d_{\text{sr}}d/2z)}] \\
&= \exp [-(1/2000) \sqrt{(8.4645 \times 10^8/(2 \times 0.227))}] \\
&= 4.205 \times 10^{-10} \\
&= 0 \text{ approximately}
\end{aligned}$$

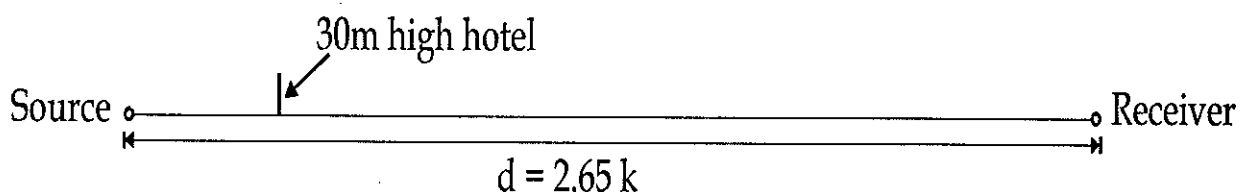
Barrier attenuation of berm

$$\begin{aligned}
D_z &= 10 \log [3 + \frac{20}{0.69} K_{\text{met}}] \text{ dB} \\
&= 5 \text{ dB approximately}
\end{aligned}$$

Conclusion:

Barrier attenuation value is not sensitive to relatively small changes to the separation between source and berm when receiver is located at large distances from the berm.

Shielding by hotel strip



$$\begin{aligned}
d_{\text{ss}} &= (550^2 + 29^2)^{1/2} = 550.764\text{m} \\
d_{\text{sr}} &= (2100^2 + 29^2)^{1/2} = 2100.2\text{m} \\
d &= 2650\text{m}
\end{aligned}$$

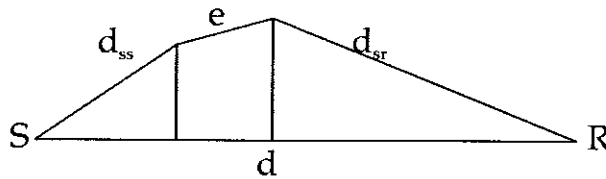
$$z = 550.764 + 2100.2 - 2650 = 0.964\text{m}$$

$$\begin{aligned} K_{\text{met}} &= \exp [-(1/2000) \sqrt{(d_{\text{ss}}d_{\text{sr}}d/2z)}] \\ &= 2 \times 10^{-9} \\ &= 0 \text{ approximately} \end{aligned}$$

Barrier attenuation of berm:

$$\begin{aligned} D_z &= 10 \log \left[3 + \frac{20}{0.69} K_{\text{met}} \right] \text{ dB} \\ &= 5 \text{ dB approximately} \end{aligned}$$

Combining shielding effects of berm and hotel strip



double diffraction case, $C_3 = 2$,

$$z = [(d_{\text{ss}} + d_{\text{sr}} + e)^2 + a^2]^{1/2} - d$$

$$\text{where } d_{\text{ss}} = (350^2 + 8^2)^{1/2} = 350.091\text{m}$$

$$d_{\text{sr}} = (2100^2 + 29^2)^{1/2} = 2100.2\text{m}$$

$$e = (200^2 + 21^2)^{1/2} = 201.099\text{m}$$

$$z = 48.12\text{m}$$

$$\begin{aligned} K_{\text{met}} &= \exp [-(1/2000) \sqrt{(d_{\text{ss}}d_{\text{sr}}d/2z)}] \\ &= \exp [-(1/2000) \sqrt{(1.9484 \times 10^9 / (2 \times 48.12))}] \\ &= 0.105 \end{aligned}$$

Combined barrier attenuation (berm and hotel strip):

$$\begin{aligned} D_z &= 10 \log \left[3 + \frac{40}{0.69} K_{\text{met}} \right] \text{ dB} \\ &= 9.6 \text{ dB or } 10 \text{ dB approximately} \end{aligned}$$

(d) Prediction of Theme Park SPL at NSRs (Peng Chau and Discovery Bay)

It may be concluded in (a) above that the SWL from each sector of each Theme Park Phase, required to produce L_{eq} 75 dB(A) at perimeter is = 121.9 dB(A).
(see above)

Table C6.1 and *Table C6.2* illustrate the prediction of the Theme Park SPL at both Peng Chau and Discovery Bay.

Table C6.1 Predicted Noise Levels at Peng Chau

Theme Park Phase Sector	Peng Chau (Tai Lei)																	
	Phase I									Phase II								
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
Line 1.					121.9 each									121.9 each				
Line 2	2650	2920	2700	2550	2550	2700	2500	2500	2920	3100	3400	3000	2900	2800	2800	2900	3000	3400
Line 3	-76.5	-77.3	-76.6	-76.1	-76.1	-76.6	-75.9	-75.9	-77.3	-77.8	-78.6	-77.5	-77.2	-76.9	-76.9	-77.2	-77.5	-78.6
Line 4	-7.4	-8.2	-7.6	-7.1	-7.1	-7.6	-7.0	-7.0	-8.2	-8.7	-9.5	-8.4	-8.1	-7.9	-7.9	-8.1	-8.4	-9.5
Line 5.					-10									-10				
Line 6					+3									+3				
Line 7.	31.0	29.4	30.7	31.7	31.7	30.7	32.0	32.0	29.4	28.4	26.8	29.0	29.6	30.1	30.1	29.6	29.0	26.8
Totals	42.7 dB(A)																	

Note:

Line 1 SWL

Line 2 Distance to NSR (m) "r"

Line 3 Conversion of SPL (spherical spreading)

Line 4 Atmospheric Absorption at 2.8 dB/ km

Line 5 Net Screening (shielding) from berms and hotel strips, etc

Line 6 Facade reflection

Line 7 SPL at NSR

Table C6.2 Predicted Noise Levels at Discovery Bay

Theme Park Phase Sector	Discovery Bay (Tai Pak Tsui)																	
	Phase I							Phase II										
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
Line 1					121.9 each									121.9 each				
Line 2	2400	2625	2510	2330	2200	2200	2330	2510	2625	3180	3400	3285	3100	2950	2950	3100	3285	3400
Line 3	-75.6	-76.4	-76.0	-75.3	-74.8	-74.8	-75.3	-76.0	-76.4	-78.0	-78.6	-78.3	-77.8	-77.4	-77.4	-77.8	-78.3	-78.6
Line 4	-6.7	-7.4	-7.0	-6.5	-6.2	-6.2	-6.5	-7.0	-7.4	-8.9	-9.5	-9.2	-8.7	-8.3	-8.3	-8.7	-9.2	-9.5
Line 5					-10									-10				
Line 6					+3									+3				
Line 7	32.6	31.1	31.9	33.1	33.9	33.9	33.1	31.9	31.1	28.0	26.8	27.4	28.4	29.2	29.2	28.4	27.4	26.8
Totals	43.5 dB(A)																	

Note:

- Line 1 SWL
- Line 2 Distance to NSR (m) "r"
- Line 3 Conversion of SPL (spherical spreading)
- Line 4 Atmospheric Absorption at 2.8 dB/ km
- Line 5 Net Screening (shielding) from berms and hotel strips, etc
- Line 6 Facade reflection
- Line 7 SPL at NSR

Annex C7

Fireworks Noise Assessment

ANNEX C7

Tested Fireworks Items Considered Suitable for Hong Kong Theme Park Use

Item Number	Size (mm)	Description
1	12	Repeater color comets
3	30	Repeater color crossettes
5	30	Repeater colour & noise effects
6	30	Repeater colour & noise effect
8	30	Colour crossette single shot
11	30	Bombette Candle 8 shot
12	30	Bombette Candle 8 shot
13	45	Color Candle 8 shot
17	30	Candle Crossette 8 shot
18	30	Candle Crossette 8 shot
20	75	Color Mine
23	75	Color Shell Domestic
24	75	Color Shell Domestic
25	75	Color Shell Foreign
26	75	Color Shell Foreign
28	100	Color Mine
29	100	Whistle Mine
30	100	Whistle Mine
32	100	Artillery Mine
33	100	Crossette Mine
34	100	Crossette Mine
35	100	Color Shell
36	100	Color Shell
37	100	Effect Shell Canister
38	100	Effect Shell Canister
39	100	Color & Whistle Shell
40	100	Color & Whistle Shell
53	75	Color Shell string of 10
54	75	Color Shell string of 10
57	100	Color Mine Foreign
59	60	Artillery Candle
60	60	Artillery Candle

Theme Park - Fireworks Noise

Design of a "hypothetical" fireworks show (5 minutes long) so as not to exceed $L_{eq, 15 \text{ minute}}$ 55 dBA at nearest NSR.

Minimum setback distance will be from Phase 1 launch area to Discovery Bay (Tai Pak Tsui) 2.4 km

(Atmospheric absorption rate at 500 Hz, average conditions of 20°C, 70% relative humidity = 2.8 dB/km)

Additional distance attenuation available (compared to SPL measured by ERM at 500 m and 800 m) is:

a) For fireworks measured at 500 m

$$\begin{aligned} &\text{Extra distance attenuation} \\ &= 20 \log (500/2400) + (2400 - 500 \text{ m}) (-2.8 \text{ dB}/1000 \text{ m}) \\ &= -13.6 - 5.3 = -19 \text{ dBA} \end{aligned}$$

b) For fireworks measured at 800 m

$$\begin{aligned} &\text{Extra distance attenuation} \\ &= 20 \log (800/2400) + (2400 - 800 \text{ m}) (-2.8 \text{ dB}/1000 \text{ m}) \\ &= -9.5 \text{ dB} - 4.5 = -14 \text{ dBA} \end{aligned}$$

If we are to obtain $L_{eq, 15 \text{ minute}}$ 55 dBA at 2.4 km, from a 5 minutes show, then objective for the actual 5 minutes of fireworks should be:

$$\begin{aligned} L_{eq, 5 \text{ minute}} &= L_{eq, 15 \text{ minute}} 55 + 10 \log (15 \text{ minutes}/5 \text{ minutes}) \\ &= 55 + 4.8 \text{ dBA} \\ &= 59.8 \text{ dBA} \end{aligned}$$

The total maximum SEL from all fireworks in 5 minutes show:

$$\begin{aligned} SEL_{\text{Total}} &= 59.8 + 10 \log (300 \text{ seconds}/1 \text{ second}) \\ &= 59.8 + 24.8 \text{ dBA} \\ &= 85 \text{ dBA at the nearest NSR} \end{aligned}$$

Fireworks SELs - Based on November 1999 measurement

Fireworks Item	Measurement Distance, m/ Attenuation, dB	Measured SEL	Distance Corrected SEL	Distance Corrected SEL with 3 dB facade correction	Noise Category	Hypothetical Fireworks Programs, Number of Items (SEL)	
						Program 1	Program 2
32	500/-19	94	75	78	A	2 (81)	1 (78)
59/60	800/-14	86	72	75	B	1 (75)	2 (78)
53/54	800/-14	83	69	72		1 (72)	2 (75)
5/6	500/-19	85	66	69	C	1 (69)	1 (69)
17/18	500/-19	82	63	66		2 (69)	4 (72)
33/34	500/-19	80	61	64	D	32 (79)	16 (76)
25/26	500/-19	79	60	63			
11/12	500/-19	78	59	62			
35/36	500/-19	78	59	62			
57	800/-14	73	59	62			
39/40	500/-19	77	58	61			
8	500/-19	76	57	60	E	64 (78)	128 (81)
28	500/-19	69	50	53			
3	500/-19	69	50	53			
37/38	500/-19	68	49	52			
13	500/-19	65	46	49			
29/30	500/-19	68	49	52			
23/24	500/-19	69	50	53			
1	500/-19	61	42	45			
20	500/-19	66	47	50			
Total SEL (dBA)						103 (85)	154 (85)

Both hypothetical programs would meet the $L_{eq,15min}$ 55 dBA criterion of nearest NSR.

Possible Fireworks Program

Noise Category	SEL Range (dBA)	SEL (dBA) For Computation Purposes	Possible Fireworks Program	SEL (dBA)
A	76 or above	80	1	80
B	71 - 75	75	2	78
C	66 - 70	70	8	79
D	61 - 65	65	16	77
E	60 or below	50	128	71
Total:			155	85

Note:

- This possible program is based on actual existing fireworks items that may be considered for Hong Kong use.
- This possible program is designed to meet the L_{eq} 55 dBA limit at NSRs.
- In the absence of preliminary designs of the fireworks displays, this possible program is to demonstrate and illustrate one possible scenario.
- Subject to actual detailed program design, the number of items in different categories could change or swap while maintaining the same overall noise output.