

**HKR Discovery Bay Area N1 North Debris-Resisting Barriers Project - Project Profile**  
**Calculation of Construction Noise**

					Peaceful Mansion						
Construction Activity - for debris-resisting barrier "A"	Equipment	GW-TM Code	Number of Plant	Sound Power Level, dB(A)	Horizontal Separation (m)	Distance Attenuation dB(A)	Predicted Noise Level PNL, dB(A)	Correction for barriers dB(A)	Corrected Noise Level CNL, dB(A)	façade Correction dB(A)	CNL - Overall, dB(A)
Site clearance	Excavator / loader	CNP081	1	112	230	-55	57	0	57	3	63
	Lorry	CNP141	1	112	230	-55	57	0	57		
Slope cutting - excavation	Excavator / loader	CNP081	1	112	230	-55	57	0	57	3	63
	Lorry	CNP141	1	112	230	-55	57	0	57		
Slope cutting - rock breaking	Breaker, excavator mounted (pneumatic)	CNP027	1	122	230	-55	67	0	67	3	70
Slope cutting - soil nails	Air compressor > 30m <sup>3</sup> / min	CNP003	1	104	230	-55	49	0	49	3	62
	Breaker, hand-held, mass>35kg	CNP026	1	114	230	-55	59	0	59		
Platform forming - mass concrete fill	Concrete lorry mixer	CNP044	1	109	230	-55	54	0	54	3	63
	Concrete pump	CNP047	1	109	230	-55	54	0	54		
	Poker, vibratory, hand-held	CNP170	1	113	230	-55	58	0	58		
	Generator, silenced (75dB(A) at 7m)	CNP102	1	100	230	-55	45	0	45		
Formworks	Saw, circular, wood	CNP201	1	108	230	-55	53	0	53	3	56
	Drill, hand-held (electric)	CNP065	1	98	230	-55	43	0	43		
Concreting	Concrete lorry mixer	CNP044	1	109	230	-55	54	0	54	3	63
	Concrete pump	CNP047	1	109	230	-55	54	0	54		
	Poker, vibratory, hand-held	CNP170	2	113	230	-55	58	0	58		
	Generator, silenced (75dB(A) at 7m)	CNP102	1	100	230	-55	45	0	45		

					Peaceful Mansion						
Construction Activity - for debris-resisting barrier "F"	Equipment	GW-TM Code	Number of Plant	Sound Power Level, dB(A)	Horizontal Separation (m)	Distance Attenuation dB(A)	Predicted Noise Level PNL, dB(A)	Correction for barriers dB(A)	Corrected Noise Level CNL, dB(A)	façade Correction dB(A)	CNL - Overall, dB(A)
Site clearance	Excavator / loader	CNP081	1	112	290	-57	55	0	55	3	61
	Lorry	CNP141	1	112	290	-57	55	0	55		
Slope cutting - excavation	Excavator / loader	CNP081	1	112	290	-57	55	0	55	3	61
	Lorry	CNP141	1	112	290	-57	55	0	55		
Slope cutting - rock breaking	Breaker, excavator mounted (pneumatic)	CNP027	1	122	290	-57	65	0	65	3	68
Slope cutting - soil nails	Air compressor > 30m <sup>3</sup> / min	CNP003	1	104	290	-57	47	0	47	3	60
	Breaker, hand-held, mass>35kg	CNP026	1	114	290	-57	57	0	57		
Platform forming - mass concrete fill	Concrete lorry mixer	CNP044	1	109	290	-57	52	0	52	3	61
	Concrete pump	CNP047	1	109	290	-57	52	0	52		
	Poker, vibratory, hand-held	CNP170	1	113	290	-57	56	0	56		
	Generator, silenced (75dB(A) at 7m)	CNP102	1	100	290	-57	43	0	43		
Formworks	Saw, circular, wood	CNP201	1	108	290	-57	51	0	51	3	54
	Drill, hand-held (electric)	CNP065	1	98	290	-57	41	0	41		
Concreting	Concrete lorry mixer	CNP044	1	109	290	-57	52	0	52	3	61
	Concrete pump	CNP047	1	109	290	-57	52	0	52		
	Poker, vibratory, hand-held	CNP170	2	113	290	-57	56	0	56		
	Generator, silenced (75dB(A) at 7m)	CNP102	1	100	290	-57	43	0	43		

### **Haul Road Activities**

Using equation D6 of BS5228:Part 1:1997

$$\text{Leq} = \text{Sound Power Level} - 33 + 10 \log Q - 10 \log V - 10 \log d$$

where Q = Number of vehicles per hour

V = average vehicle speed (in km/h)

d = distance of receiving position from the centre of haul road (in metres)

As advised by the design engineer, the anticipated haul road activity is maximum 1 round trip per hour, i.e, 2 vehicles/hour.

For worst case, the highest SWL vehicle (lorry, 112 dB(A)) is assumed.

$$\begin{aligned} Q &= 2 \\ V &= 10 \\ d &= 110 \\ \text{Leq} &= 52 \end{aligned}$$

Construction activities	Construction Noise Level dB(A)					Other	Overall
	"A"	"F"	Both	Haul Road	Barriers Total		
Site clearance	63	61	65	52	65	75	75
Slope cutting - excavation	63	61	65	52	65	75	75
Slope cutting - rock breaking	70	68	72	52	72	75	77
Slope cutting - soil nails	62	60	64	52	65	75	75
Platform forming - mass concrete fill	63	61	66	52	66	75	75
Formworks	56	54	58	52	59	75	75
Concreting	63	61	66	52	66	75	75