

## Appendix D3

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### Sample Calculations for Construction Noise Predictions



# Calculation of Construction Noise Levels

(with maximum no. plants)

Job Title.: KCR East Rail Extension

Job No.: 212B2

Date: 25/08/99

NSR		N4, Far East Mansion - Residential bio													
		Xr : 835862.2													
		Yr : 817425.7													
		Hr : 7.5													
Worksite	Description	SWL	Source location & distance						Corrections				CNL dB(A)		
			No.	Xs	Ys	Hs	Lsr	Cno	CLsr	Catm	Csrl	Cfac			
5A	Site Preparation (Slope Work)	127	1	835963.6	817410.3	1.5	102.7	0	-40.2	0.0	0.0	0.0	3	81.8	102.6
5A	Excavation (Drill and Blast)	134	1	835963.6	817410.3	1.5	102.7	0	-40.2	0.0	0.0	0.0	3	88.8	102.6
5A	Station Construction	129	1	835963.6	817410.3	1.5	102.7	0	-40.2	0.0	0.0	0.0	3	83.8	102.6
5A	Concreting	125	1	835963.6	817410.3	1.5	102.7	0	-40.2	0.0	0.0	0.0	3	79.8	102.6
5A	Backfilling	117	1	835963.6	817410.3	1.5	102.7	0	-40.2	0.0	0.0	0.0	3	71.8	102.6
6	Chemical Grouting	118	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	0.0	3	92.3	9.1
6	Site Preparation	116	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	0.0	3	90.3	9.1
6	Diaphragm Walling - walling	116	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	0.0	3	90.3	9.1
6	Diaphragm Walling - Concreting	112	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	0.0	3	86.3	9.1
6	Diaphragm Walling - Breaking	122	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	0.0	3	96.3	9.1
6	Road Decking	116	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	0.0	3	90.3	9.1
6	Excavation (At Surface)	116	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	0.0	3	90.3	9.1
6	Tunnel Box - Formation	114	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	0.0	3	88.3	9.1
6	Tunnel Box - Concreting	113	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	0.0	3	87.3	9.1
6	Backfilling	116	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	0.0	3	90.3	9.1
6	Road Reinstatement	117	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	0.0	3	91.3	9.1

## Definition of terms:

SWL

- the sound power level of a source, dB(A)

No.

- the number of items of plant operating simultaneously

Xr, Yr, Hr

- the coordinates of the NSR, m

Xs, Ys, Hs

- the coordinates of the source, m

Lsr

- the horizontal distance between the source and NSR, m

Cno

- correction for no. of plant items

CLsr

- the correction for slant distance between the source and the NSR, dB(A)

Catm

- the air absorption using CONCAWE methodology

Cfac

- the facade correction, dB(A)

Csrl

- the sound reduction provided by the building screening, dB(A)

CNL

- the corrected noise level, dB(A)(30 minutes)

**Westwood Hong & Associates Ltd.**  
**Calculation of Mitigated Construction Noise Levels (Mitigation 4 - Work with Road Segment and Period of Time)**

Job Title.: KCR East Rail Extension  
 Job No.: 21282  
 Date: 12/30/99

NSR	N4, Far East Mansion -Residential blo			Xr : 835862.2 Yr : 817425.7 Hr : 7.5										
	Worksite	Description	Basic Noise Level, dB(A)	No.	Source location & distance			Corrections					CNL	
			SWL		Xs	Ys	Hs	Lsr	Cno	CLsr	Catm	Csri	Cfac	
6S		Site Preparation	105	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	3	79.3
6S		Pipe Pile Wall	105	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	3	79.3
6S		Traffic Deck & Utility support	105	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	3	79.3
6S		Excavation & Shoring	102	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	3	76.3
6S		Subway Construction	101	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	3	75.3
6S		Backfilling	105	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	3	79.3
6S		Road Reconstruction	104	1	835864.5	817416.9	1.5	10.9	0	-20.7	0.0	0.0	3	78.3

**Definition of terms:**

- SWL - the sound power level of a source, dB(A)
- No. - the number of items of plant operating simultaneously
- Xr, Yr, Hr - the coordinates of the NSR, m
- Xs, Ys, Hs - the coordinates of the source, m
- Lsr - the horizontal distance between the source and NSR, m

- Cno - correction for no. of plant items
- CLsr - the correction for slant distance between the source and the NSR,
- Catm - the air absorption using CONCAWE methodology
- Cfac - the facade correction, dB(A)
- Csri - the sound reduction provided by the building screening, dB(A)
- CNL - the corrected noise level, dB(A)(30 minutes)