Appendix 4.10
Ventilation Noise Assessment

Appendix 4.10 Ventilation Shaft Noise Assessment

Fan Capacity		**125 m3/s**	**(Fully Reversible)**							
	Unit									Total
Octave Band Freq	**Hz**	**63**	**125**	**250**	**500**	**1K**	**2K**	**4K**	**8K**	
Sound Power Level of the fan	dB	115	115	122	118	118	114	109	102	***125.8***
Insertion Loss of the selected silencer	dB	-12	-20	-34	-42	-51	-52	-43	-22	
A-weighting network correction		-26.2	-16.1	-8.6	-3.2	0	1.2	1	-1.1	
Sound Power Level of the fan with silencer	***dB(A)***	***76.8***	***78.9***	***79.4***	***72.8***	***67***	***63.2***	***67***	***78.9***	***85.1***

Appendix 4.10 Ventilation Noise Assessment

East Ventilation Building

Louvre Ref.	Fan Type	SWL of the fan with dB(A)
EVB 1	125m^3/s	85.1
EVB 2	125m^3/s	85.1
EVB 3	125m^3/s	85.1
EVB 4	125m^3/s	85.1
EVB 5	125m^3/s	85.1
EVB 6	125m^3/s	85.1
EVB 7	125m^3/s	85.1
Tonality Correction		3
Total		96.5

With the noise criteria = 55 dB(A),

Log R = (SWL - SPL - 8 + 3)/20

R = 67m

where R is the minimum distance between the ventilation louvres of EVB and the NSRs so as to comply with the noise criteria of 55 dB(A)

With the noise criteria = 50 dB(A),

Log R = (SWL - SPL - 8 + 3)/20

R = 119m

where R is the minimum distance between the ventilation louvres of EVB and the NSRs so as to comply with the noise criteria of 50 dB(A)

Central Ventilation Building

Louvre Ref.	Fan Type	SWL of the fan with dB(A)
CVB 1	125m^3/s	85.1
CVB 2	125m^3/s	85.1
CVB 3	125m^3/s	85.1
CVB 4	125m^3/s	85.1
CVB 5	125m^3/s	85.1
CVB 6	125m^3/s	85.1
CVB 7	125m^3/s	85.1
CVB 8	125m^3/s	85.1
CVB 9	125m^3/s	85.1
CVB 10	125m^3/s	85.1
CVB 11	125m^3/s	85.1
Tonality Correction		3
Total		98.5

With the noise criteria = 55 dB(A),

Log R = (SWL - SPL - 8 + 3)/20

R = 84m

where R is the minimum distance between the ventilation louvres of CVB and the NSRs so as to comply with the noise criteria of 55 dB(A)

With the noise criteria = 50 dB(A),

Log R = (SWL - SPL - 8 + 3)/20

R = 149m

where R is the minimum distance between the ventilation louvres of CVB and the NSRs so as to comply with the noise criteria of 50 dB(A)