Figure 12: Proposed Mitigation – Residential Ground Floor



Please refer to the main report, Section 12 for Workspace mitigation.

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All habitable rooms:

Figure 13: Proposed Mitigation 1st to 4th Floor (inc)

Glazing: Type 2

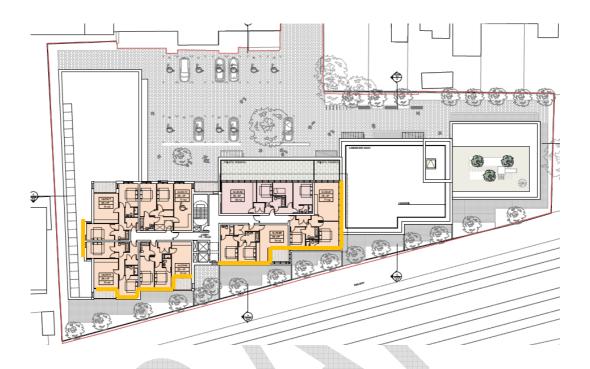
Ventilation: Type C (MVHR)

All other habitable rooms not highlighted:

Glazing: Type 1 Ventilation: Type A

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Figure 14: Proposed Mitigation – Fifth Floor and Above (inc)



All Daytime Habitable Rooms:

Glazing: Type 2 Ventilation: Type B All Bedrooms:

Glazing: Type 2

Ventilation: Type C (MVHR)

All other habitable rooms not highlighted:

Glazing: Type 1 Ventilation: Type A

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Appendix 1: Continuous Noise Survey Results

MP1 Noise Survey Results Adjacent to Railway Line

Date / Time Period	LAeq	LAmax	LA10	LA90
Friday				
21/10/2016 11:12	71.4	91.4	74.3	44.2
21/10/2016 11:30	70.5	91.4	69	44
21/10/2016 12:00	70.7	89.2	74.9	43.7
21/10/2016 12:30	70.9	91.7	70.6	43.8
21/10/2016 13:00	72.7	90.5	76.9	44.2
21/10/2016 13:30	70.9	92.2	71.5	44
21/10/2016 14:00	71.2	91.2	73.6	43.8
21/10/2016 14:30	71	91.2	71.4	44.4
21/10/2016 15:00	70.3	89	72.5	43.2
21/10/2016 15:30	72.4	90.3	75.9	44.9
21/10/2016 16:00	71.3	87.6	75.9	44.7
21/10/2016 16:30	73.7	92.8	77.3	44.2
21/10/2016 17:00	72.8	90.9	76.7	44
21/10/2016 17:30	73.8	90.7	76.7	43.2
21/10/2016 18:00	73.2	90.7	77.9	44.1
21/10/2016 18:30	74.3	92.4	77.5	43.3
21/10/2016 19:00	72.8	91.2	76.1	43.3
21/10/2016 19:30	71.6	90.3	73.5	42.8
21/10/2016 20:00	71.2	90.8	74.1	42.7
21/10/2016 20:30	71.3	88.1	74.1	43.2
21/10/2016 21:00	71.7	91.3	74.3	42.6
21/10/2016 21:30	70.5	90.9	65.5	41.7
21/10/2016 22:00	69.3	90.5	62.8	42.5
21/10/2016 22:30	70.5	91.4	69.8	41.9
21/10/2016 23:00	69.2	90.6	59.2	40.9
21/10/2016 23:30	69.2	90.1	67.6	40.3
Saturday				
22/10/2016 00:00	66.5	89.6	53.3	40
22/10/2016 00:30	64.4	92.1	47	40.2
22/10/2016 01:00	64.8	86.7	44.8	39.6
22/10/2016 01:30	58.3	87.2	44.3	39.7
22/10/2016 02:00	40.2	54.1	41.5	38.4
22/10/2016 02:30	62.3	86.5	42.8	39
22/10/2016 03:00	42.6	60.4	43	39.1
22/10/2016 03:30	62.9	86.1	44.5	38.7
22/10/2016 04:00	40.5	61	42	38.3
22/10/2016 04:30	58.1	85.8	40.7	37.1
22/10/2016 05:00	65.2	87.2	43	37
22/10/2016 05:30	68.7	92.8	55.3	38.8
22/10/2016 06:00	71.1	93.6	63.4	39.5
22/10/2016 06:30	67.7	90.2	60.7	40.7
22/10/2016 07:00	70.7	95.7	69.9	41.9
22/10/2016 07:30	72.3	91.8	75.5	42.6
22/10/2016 08:00	71.8	93.3	75	42.9
22/10/2016 08:30	71.6	93.6	73.3	42.3
22/10/2016 09:00	70.8	90.1	74.3	42.2
22/10/2016 09:30	70.5	90.5	72.2	43.5
22/10/2016 10:00	71.3	89.8	75.3	43.4
22/10/2016 10:30	71.1	90.5	73.4	43.5
22/10/2016 11:00	71.2	90.9	74.6	43.7
22/10/2016 11:30	72.1	91.8	75.8	43.7
22/10/2016 12:00	71.3	90.1	74.5	43.3
22/10/2016 12:30	71.9	90	74.2	43.4

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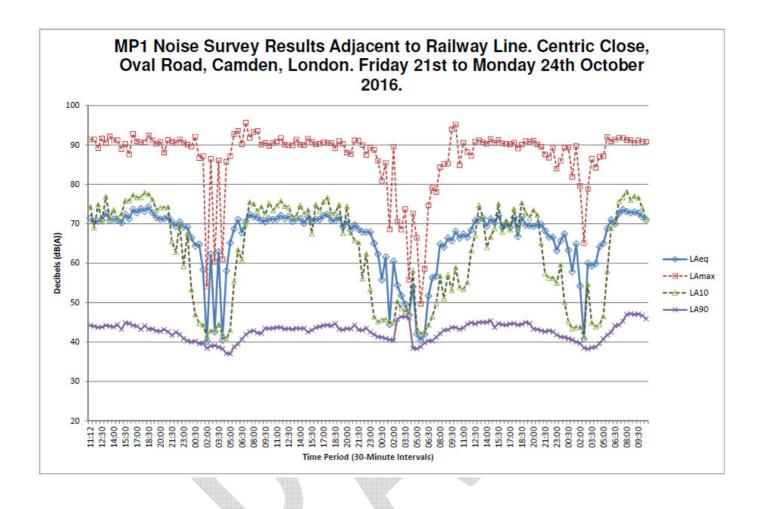
Date / Time Period	LAeq	LAmax	LA10	LA90
Saturday cont	2.104			
22/10/2016 13:00	70.6	89.9	71.9	43.2
22/10/2016 13:30	71.4	91.4	72	43.5
22/10/2016 14:00	71.3	90.1	74.7	43.4
22/10/2016 14:30	70.1	90	72.6	43.5
22/10/2016 15:00	71.7	91.6	73.5	42.5
22/10/2016 15:30	70.6	90.8	67.5	43
22/10/2016 16:00	71.2	90.2	74.9	43.7
22/10/2016 16:30	71.1	90.3	73.2	43.9
22/10/2016 17:00	72.1	90.7	75.6	44.2
22/10/2016 17:30	72.4	90.5	76.6	44.3
22/10/2016 18:00	70.9	90.5	72.7	44.1
22/10/2016 18:30	70.8	89.2	72.7	44.7
22/10/2016 19:00	71.7	91	74.8	43.3
22/10/2016 19:30	69.3	90.3	67.6	43.1
22/10/2016 20:00	70.6	88.1	74.4	43.4
22/10/2016 20:30	68.4	87.7	67.7	43.3
22/10/2016 21:00	69.7	91.2	65.8	44.3
22/10/2016 21:30	68.6	91.1	65.2	43.1
22/10/2016 22:00	67.9	90	56.1	43
22/10/2016 22:30	67.9	87.5	62.4	43.5
22/10/2016 23:00	67.9	89.3	53.4	42.5
22/10/2016 23:30	65	88.8	46.4	41.9
Sunday				
23/10/2016 00:00	62.3	86	45.1	41.3
23/10/2016 00:30	55.8	80.9	45.6	41.2
23/10/2016 01:00	61.6	85.5	45.7	40.9
23/10/2016 01:30	44.5	68.6	45.1	40.6
23/10/2016 02:00	60.5	89.5	44.9	40.4
23/10/2016 02:30	54.4	70.6	50.3	45.8
23/10/2016 03:00	51.8	68.5	48.5	46.4
23/10/2016 03:30	49.6	73.8	47.8	46.4
23/10/2016 04:00	46.9	55.8	47.5	46.1
23/10/2016 04:30	54	72.6	58.2	38.4
23/10/2016 05:00	42	66.4	43.4	38.3
23/10/2016 05:30	40.5	49.7	42.1	38.8
23/10/2016 06:00	42	58.6	42.6	39.8
23/10/2016 06:30	51.7	74.7	44.3	40.3
23/10/2016 07:00	56.3	79.1	46.4	40.3
23/10/2016 07:30	56.7	78.1	49.8	41.2
23/10/2016 08:00	64.9	84.4	56.7	42.1
23/10/2016 08:30	64.1	85.2	51	43
23/10/2016 09:00	66.4	85.3	57.1	43.1
23/10/2016 09:30	65.7	94	53.1	43.7
23/10/2016 10:00	68.1	95.2	58.9	43.7
23/10/2016 10:30	66.4	84.9	53.9	43.2
23/10/2016 11:00	67.4	90.6	53.4	43.6
23/10/2016 11:30	66.6	88.2	55.1	44.5
23/10/2016 12:00	68.4	87.2	63.2	44.9
23/10/2016 12:30	70.9	90.8	67.1	44.6
23/10/2016 13:00	71.1	91.2	74.7	45
23/10/2016 13:30	71.5	90.7	71.7	45
23/10/2016 14:00	69.4	90.3	64	45
23/10/2016 14:30	71.3	91.5	66.7	45.4
23/10/2016 15:00	70.3	90.5	68.8	43.7
23/10/2016 15:30	72.2	91.3	75.1	44.7

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Date / Time Period	LAeq	LAmax	LA10	LA90
Sunday cont				
23/10/2016 16:00	69.1	90.4	67.9	44.4
23/10/2016 16:30	70.1	90.3	70.9	44.3
23/10/2016 17:00	69.1	90.2	68.5	44.6
23/10/2016 17:30	71.6	90.6	73.8	44.7
23/10/2016 18:00	66.8	89.1	68.6	44.3
23/10/2016 18:30	71.8	90.1	75.3	44.5
23/10/2016 19:00	69.6	91	72.8	45
23/10/2016 19:30	69.6	90.8	71.5	44.7
23/10/2016 20:00	69.4	91.1	73.5	43.3
23/10/2016 20:30	69.8	90.2	72.2	43.2
23/10/2016 21:00	69.9	89.6	65.1	42.9
23/10/2016 21:30	68.2	87.6	57.3	42.6
23/10/2016 22:00	66.6	86.8	56.2	42.9
23/10/2016 22:30	66.6	89.3	56.3	42.6
23/10/2016 23:00	63.2	84	55	41.8
23/10/2016 23:30	65.7	86	59.6	41.3
Monday				
24/10/2016 00:00	67.4	89.3	50.1	41.2
24/10/2016 00:30	63.3	89.4	45.1	40.9
24/10/2016 01:00	57.8	81.9	43.4	40.6
24/10/2016 01:30	64.9	89.8	43.8	40
24/10/2016 02:00	54.2	79.6	43.8	39.7
24/10/2016 02:30	40.8	65.1	41.4	38.5
24/10/2016 03:00	60	78.9	54.6	38.2
24/10/2016 03:30	59.3	86.5	44.9	38.6
24/10/2016 04:00	59.9	84.2	43.9	38.7
24/10/2016 04:30	64.2	87	44.4	39.6
24/10/2016 05:00	65.1	87.2	46.5	40.8
24/10/2016 05:30	68.8	92	58	41.8
24/10/2016 06:00	71	90.9	69	42.5
24/10/2016 06:30	70	91.4	70.3	44.1
24/10/2016 07:00	72.6	91.9	75.6	44.3
24/10/2016 07:30	73.6	91.8	76.7	45.3
24/10/2016 08:00	73.1	91.3	78.2	47
24/10/2016 08:30	72.8	91.2	76	47.2
24/10/2016 09:00	73	90.5	77	47
24/10/2016 09:30	72.7	91.2	76.6	47.1
24/10/2016 10:00	71.7	90.8	74.1	46.7
24/10/2016 10:30	71.1	90.9	71.1	45.9

Weekday:				
Day	72.3	91.1	74.9	44.8
			Range:	43-47
Evening	71.2	90.7	71.3	42.6
			Range:	42-43
Night	65.8	89.0	49.6	39.2
	Range:	54-94	Range:	37-41
Weekend:				
Day	70.3	90.7	68.3	43.6
			Range:	40-45
Evening	69.2	89.8	66.2	43.4
			Range:	43-45
Night	63.5	86.1	48.9	41.2
	Range:	50-91	Range:	38-46

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Appendix 2: Sample Noise Survey Results

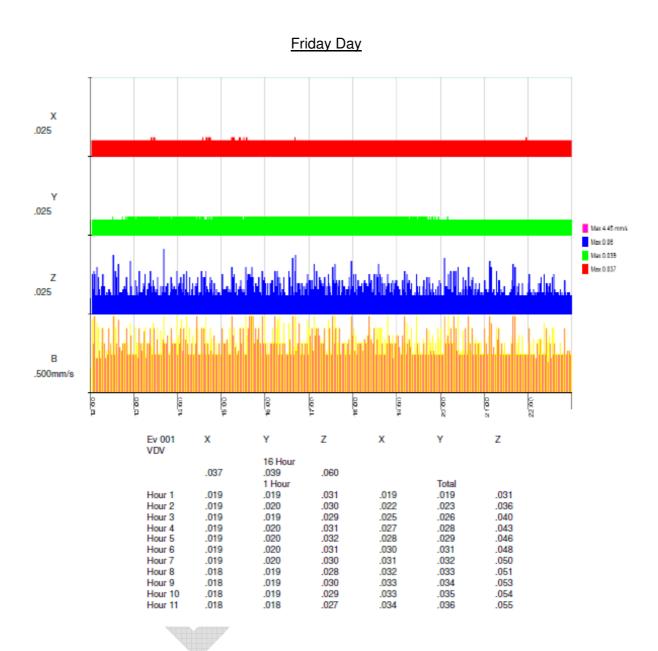
Sample Noise Measurements

Date / Time Period	Duration	Location	LAeq	LAmax	LA10	LA90	Comments
Friday 21st Oct							
21/10/2016 12:11	00:02:51	а	52.8	56.4	53.6	51.9	Measurement of plant under existing apartments.
21/10/2016 12:16	00:03:05	р	54.9	71.6	59.2	45.2	Line of sight to road. Can hear trains - max @ <60dB(A).
21/10/2016 12:20	00:05:00	b	56.4	69.3	59.4	44.6	Maxima due to road traffic. Trains are less than road traffic.
Monday 24th Oct							
24/10/2016 11:14	00:15:02	р	57.7	73.6	61.3	46.8	Line of sight to road. Some work being done on nearby house.
24/10/2016 11:30	00:30:00	b	58.3	78	61.6	47.3	Max due to road traffic. Can hear trains.
24/10/2016 12:00	00:13:07	Ь	56.9	72.3	61.1	46.7	Max due to road traffic. Can hear trains.



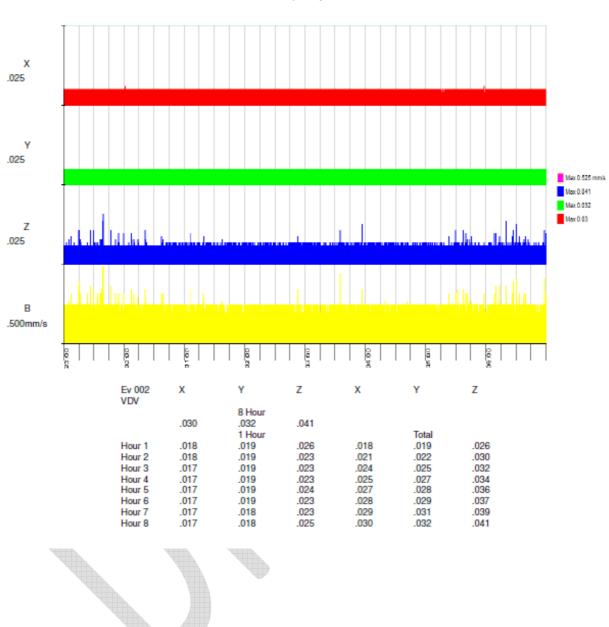
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Appendix 3: Vibration Survey Results



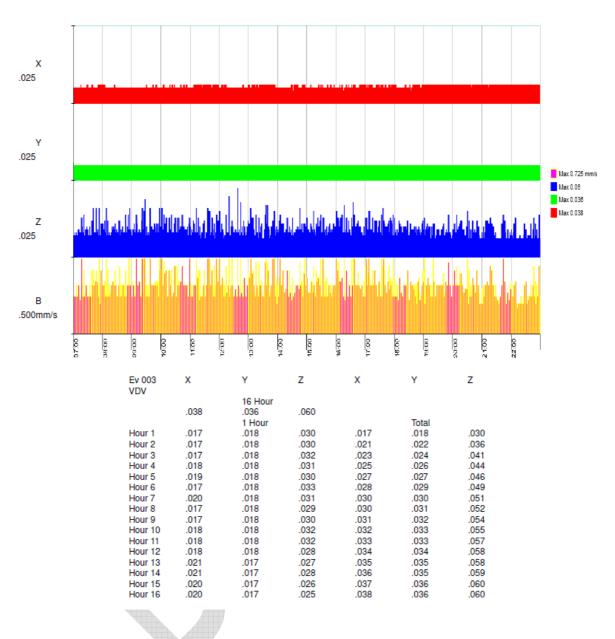
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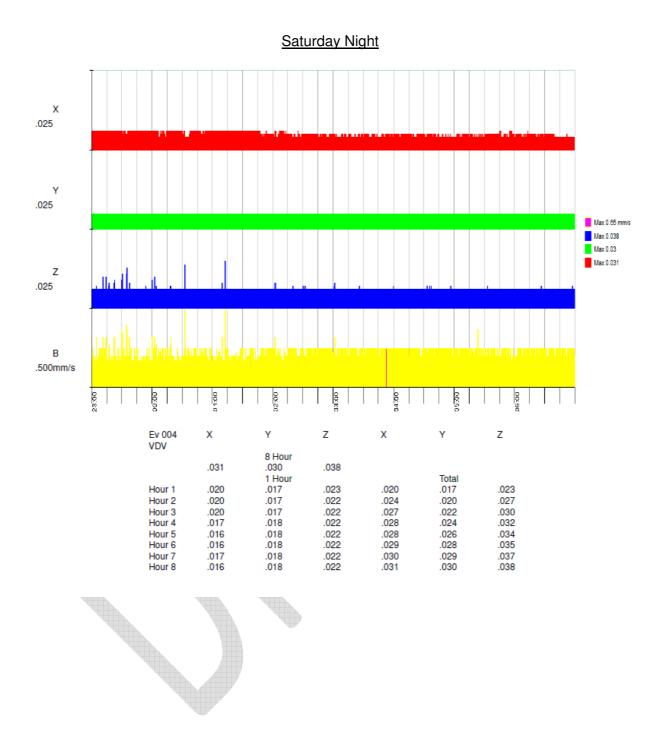


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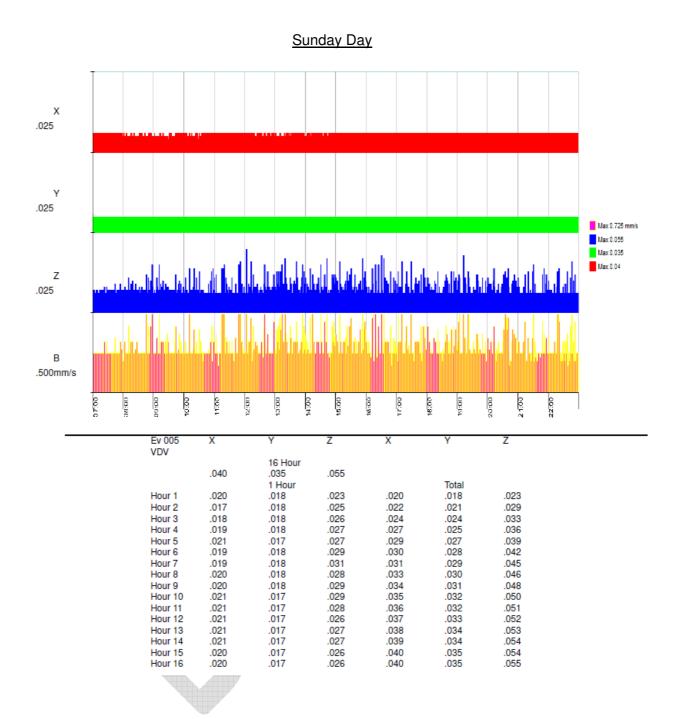
Saturday Day



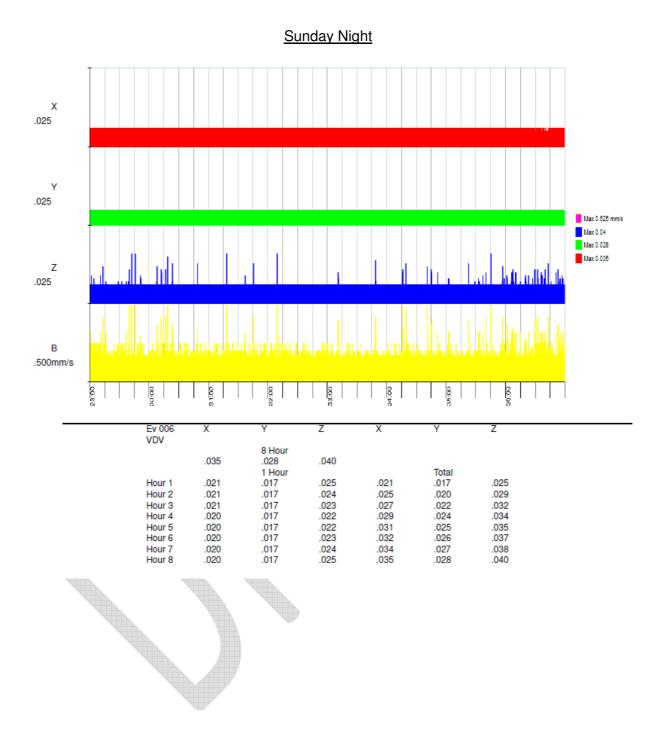
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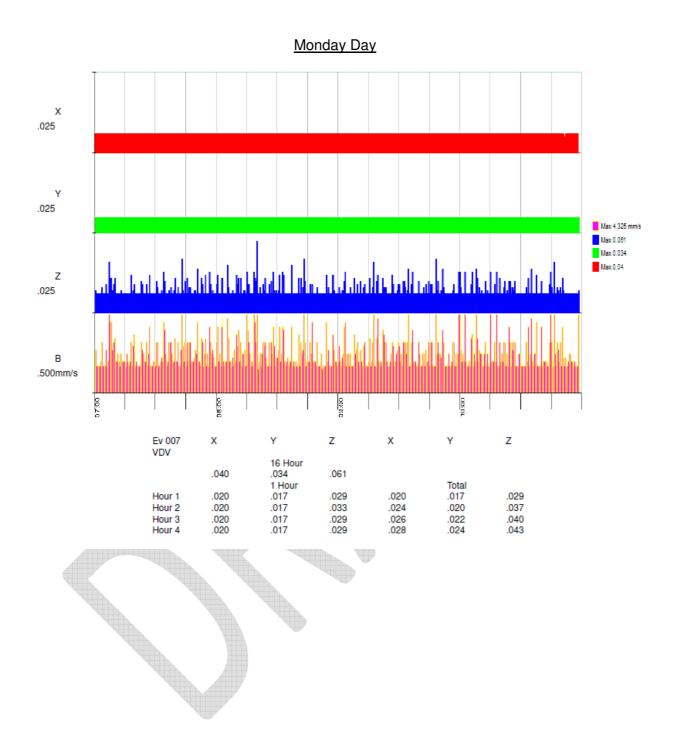
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Appendix 4: Technical Summary for Mitigation – Centric Close

Please refer to Figures 12 to 14 of the noise report when reading this technical note.

Glazing Requirements:

SRI - Octave Band Centre Frequency (Hz)	125	250	500	1k	2k	4k
Standard glazing: Type 1*	21	17	25	35	36	31
Enhanced Glazing: Type 2	27	36	43	52	55	59

A summary of requirements for glazing is shown below. Where an 'x' is placed, this denotes that the option is suitable for that specific façade or plot.

Façade / Plot (See Figures 12 to 14)	Standard Glazing Type 1	Enhanced Glazing Type 2
All habitable rooms not highlighted: All floors facing road	х	-
All habitable rooms: Facing / side to railway line	-	Х

^{*}Fairview's standard glazing specification is shown in the Table below:

SRI - Octave Band Centre Frequency (Hz)	125	250	500	1k	2k	4k
Standard glazing: 4/16/4mm	21	17	25	35	37	31

Other glazing configurations can be used as long as the octave band noise reduction above is achieved. The octave band frequency specification above <u>must</u> be provided to the supplier to enable an appropriate product to be selected.

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Ventilation Requirements:

Some habitable rooms will require MVHR / MEV acoustic ventilation to reduce noise from rail traffic. The following octave band reductions for vents are therefore required. Acoustic trickle vents or acoustic air bricks should be selected to meet the frequency reduction shown.

SRI - Octave Band		250	500	1k	2k	4k
Centre Frequency (Hz)	125	230	300	IK	ZK	71
Type A Standard Trickle vents / Airbrick	34	34	35	31	29	32
Type B Acoustic Ventilation – Airbricks	40	35	35	52	58	64

The following table gives the requirements of ventilation required for each façade of the development. Where an 'x' is placed, this denotes that the option is suitable for that specific façade or plot.

	Type A	Type B	Type C
Façade / Plot	Trickle-	Acoustic	
r agade / r lot	vents /	Vent – MEV	MVHR
	Airbricks	+ 1 Vent	
All habitable rooms not highlighted: Facing road	х	-	-
All habitable rooms: Facing Railway line	-	-	Х
All Daytime habitable rooms	-	Х	х
All bedrooms	-	-	х

Manufacturers / suppliers should be given the ventilation octave band specifications above to enable an appropriate product to be selected. Where MVHR is required for bedrooms only, it may be relevant to install MVHR for the whole plot rather than MEV in the Living room.

The above ventilation options are adequate to allow sufficient background ventilation.

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Multidisciplinary Consulting

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Fairview Ventures Limited Centric Close, Camden Air Quality Assessment

Document Ref: 774547-REP-ENV-001

Revision:

Date: 13 December 2016

Prepared:

S. Hashemi

Air Quality Consultant

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Checked and Approved:

G. Hodgkiss Senior Air Quality Consultant

g.H.

Project Revision Sheet

Revision No	Date	Status	Changes	Author	Checked
0	13 December 2016	Draft	-	S. Hashemi	G. Hodgkiss



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