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Dear Russell

AS11350 79 FITZJOHN'S AVENUE, HAMPSTEAD**Planning Condition 11 (Ref. 2014/7851/P)**

We are writing in respect of planning condition 11 of the application (ref. 2014/7851/P) which states the following:

11 – 'The internal noise levels in the dwellings hereby approved shall not exceed an indoor ambient noise levels in unoccupied rooms of 30 dB(A) LA eq (1hour) and individual noise events shall not exceed 45 dB L_{Amax} at any time of day or night. Prior to first occupation of the development hereby approved, noise testing and an associated report to demonstrate compliance with the above levels shall be submitted to and approved in writing by the Local Planning Authority.'

The development is well advanced with all external façade elements installed albeit that internal linings and first fix partitioning is yet to commence. An early assessment of external noise intrusion has been requested and this technical report summarises the works undertaken and the relevant findings of this study.

External Building Fabric Envelope Indicative Performance Survey

A survey of the existing internal noise levels was undertaken over consecutive 5-minute periods within the second-floor bedroom in plot D.05 (position A) between 17:00 hours on Friday 17th January and 07:30 hours on Monday 20th January 2019. External measurements were undertaken over the same survey period on the site boundary (Position C). Additional synchronised manual measurements were taken either side of the façade (Position A and Position B) at second floor level over consecutive 1-minute periods between 16:17 and 16:28 to determine an indicative transmission loss for the building fabric envelope.

The following equipment was used during the survey:

- 2 no. Rion sound level meter type NL52;
- 1 no. Norsonic sound level meter type 118;
- 1 no. Rion sound level calibrator type NC74;
- 1 no. Norsonic sound level calibrator type 1251.

Calibration of the sound level meters was verified before and after use. No significant calibration drift was observed.

Results

Figures 11350/TH1-3 show the internal L_{Aeq} , L_{Amax} , L_{A10} and L_{A90} noise levels at Position A as time histories. Figures 11350/TH3-6 shows the comparative $L_{Aeq,30min}$ noise levels between Positions A and C.

Period	Measured $L_{Aeq,T}$	Range of Measured $L_{Aeq,1hour}$	Measured Typical* L_{Amax}
Daytime (07:00 – 23:00)	$L_{Aeq,16hour}$ 37 dB	$L_{Aeq,1hour}$ 32 - 40 dB	56 dB
Night-time (23:00 – 07:00)	$L_{Aeq,8hour}$ 31 dB	$L_{Aeq,1hour}$ 27 - 35 dB	48 dB

*'typical' derived from 90th percentile of all maximum events in the night-time period

During the survey period, the internal partitions had not yet been completed. On completion, when carpet, curtains and furniture have been fitted, noise levels (including maxima) will be significantly lower than those measured during this exercise. Based on the existing room conditions, it is expected that this correction would be in the order of 5 – 7 dB with reverberation times within the room tested standardised to 0.5 seconds.

It should be noted that the site boundary overlooking Fitzjohn’s Avenue currently features a solid hoarding at low level. It is reasonable to expect that the external façade incident noise level may increase on completion when this hoarding is removed, albeit only slightly.

Manual synchronised measurements either side of the façade at Positions A and B indicate a level difference of up to around 30dB, however, this does not account for the internal conditions and a transmission loss in the mid 30’s is not inconceivable. This is commensurate with the glazing performance specification (by others) set out in the Planning Stage report and the Stage E Acoustic Specification.

Relevant policy and guidance

The internal noise levels specified in planning condition 11 appear to be loosely based on the National Planning Policy Framework and desirable internal ambient noise levels as stated in BS8233:2014 *Guidance on sound insulation and noise reduction for buildings*, as well as guidance detailed in the World Health Organisation Guidelines for Community Noise (1999).

The relevant section of BS8233:2014 is shown in the following table:

Activity	Location	07:00 to 23:00 hours	23:00 to 07:00 hours
Resting	Living Room	35 dB $L_{Aeq, 16 \text{ hour}}$	-
Dining	Dining Room	40 dB $L_{Aeq, 16 \text{ hour}}$	-
Sleeping (daytime resting)	Bedroom	45 dB $L_{Aeq, 16 \text{ hour}}$	30 dB $L_{Aeq, 8 \text{ hour}}$

This table is set out in the Noise Assessment dated October 2014, prepared by others, for the planning application.

The WHO Guidelines for Community Noise states:

'For a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45dB L_{Amax} more than 10-15 times a night (Vallet & Vernet 1991).'

The extract below in respect of internal noise levels in residential accommodation is taken from the current *Camden Policy - Appendix 3 (Camden Local Plan 2017)*. This is consistent with the stated levels above and does not specify a daytime L_{Amax} level..

Table B: Noise levels applicable to noise sensitive residential development proposed in areas of existing noise

Dominant Noise Source	Assessment Location	Design Period	LOAEL (Green)	LOAEL to SOAEL (Amber)	SOAEL (Red)
Anonymous noise such as general environmental noise, road traffic and rail traffic ~	Noise at 1 metre from noise sensitive façade/free field	Day	<50dB $L_{Aeq, 16hr}^*$	50dB to 72dB $L_{Aeq, 6hr}^*$	>72dB $L_{Aeq, 16hr}^*$
		Night	<45dB $L_{Aeq, 8hr}^3$ <40 dB $L_{Aeq, 8hr}^{**}$	45dB to 62dB $L_{Aeq, 8hr}^*$ >40dB L_{night}^{**}	>62dB $L_{Aeq, 8hrs}^*$
	Inside a bedroom	Day	<35dB $L_{Aeq, 16hr}$	35dB to 45dB $L_{Aeq, 16hr}$	>45dB $L_{Aeq, 16hr}$
		Night	<30dB $L_{Aeq, 8hr}$ 42dB $L_{Amax, fast}$	30dB to 40dB $L_{Aeq, 16hr}$ 40dB to 73dB $L_{Amax, fast}$	>40dB $L_{Aeq, 8hr}$ >73dB $L_{Amax, fast}$
	Outdoor living space (free field)	Day	<50dB $L_{Aeq, 16hr}$	50dB to 55dB $L_{Aeq, 6hr}$	>55dB $L_{Aeq, 16hr}$
	Non-anonymous noise	See guidance note on non-anonymous noise			

It should be noted that the *Camden Local Development Framework (2010-2025) DP28* which was in place at the time of the planning decision does not include any internal noise criteria instead

setting out façade incident levels for daytime and night-time. Once again, the maximum event noise level is only set out for the night-time with the description ‘several times in any hour’ which during a night-time period would be consistent with the 10-15 times a night indicated above.

Table B: Noise levels on residential streets adjoining railways and roads at and above which attenuation measures will be required

Noise description and location of measurement	Period	Time	Sites adjoining railways	Sites adjoining roads
Noise at 1 metre external to a sensitive façade	Day	0700-1900	65 dB $L_{Aeq}12h$	62 dB $L_{Aeq}12h$
Noise at 1 metre external to a sensitive façade	Evening	1900-2300	60 dB $L_{Aeq}4h$	57 dB $L_{Aeq}4h$
Noise at 1 metre external to a sensitive façade	Night	2300-0700	55 dB $L_{Aeq}1h$	52 dB $L_{Aeq}1h$
Individual noise events several times an hour	Night	2300-0700	>82 dB L_{Amax} (S time weighting)	>82 dB L_{AMAX} (S time weighting)

The National Planning Policy Framework has since been revised and Professional Planning Guidance: Planning & Noise was published in 2017, which incorporates themes of the guidance with respect to ‘good acoustic design’ and a holistic approach to specification of mitigation measures to achieve acceptable levels of amenity in the context of the wider development, rather than strict compliance with numerical criteria.

The implications of designing to the overly stringent criteria set out in the planning condition are more significant than just a requirement for additional façade protection. To deliver compliant maximum event noise levels, the resulting internal average noise levels would be so low as to result in a loss of privacy between dwellings. Any sound generated in adjacent dwellings would be more perceptible in the neighbouring apartment and increased likelihood of complaints could arise despite the higher standard of airborne and impact sound insulation required in Condition 12.

The question of compliance certainty is also problematic with a ‘hard limit’ on maximum noise levels never to be exceeded at any time of day or night. Condition breaches would occur due to infrequent but inevitable noisy events (e.g. emergency sirens, noisy motorcycles, backfires, fireworks etc), to which it would be entirely unreasonable to expect the façade protection to be designed against this absolute limit never to be exceeded.

Examples of maximum events caused by emergency service vehicle sirens can be interpreted due to their specific frequency content and these have been annotated on the attached time histories as an example.

The condition is, therefore, unreasonable and probably unenforceable. A variation along the lines suggested in the text below would deliver a good level of amenity for residents without the unnecessary and potentially counter-productive over-design which would result from complying with the current requirements of condition 11.

11 – ‘The internal noise levels in the dwellings hereby approved shall not exceed an indoor ambient noise levels in unoccupied rooms of 35dB(A) $L_{Aeq,16hour}$ (07:00-23:00 hours) and 30dB(A) $L_{Aeq,16hour}$ (23:00-07:00 hours) and individual noise events shall not normally exceed 45dB L_{Amax} during the night (23:00-07:00 hours). Prior to first occupation of the development hereby approved, noise testing and an associated report to demonstrate compliance with the above levels shall be submitted to and approved in writing by the Local Planning Authority.’

We trust the above is of assistance. Should you have any queries please do not hesitate to contact us.

Yours sincerely
for CLARKE SAUNDERS ASSOCIATES

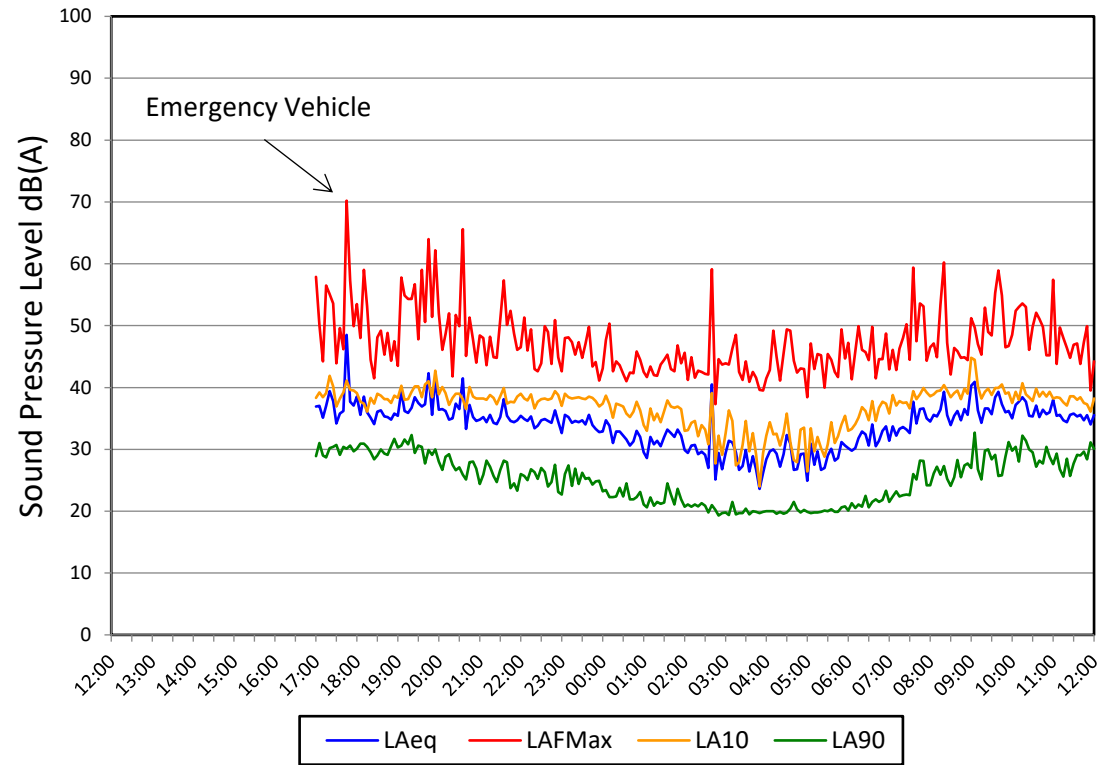


Daniel Saunders

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79 Fitzjohn's Avenue, Hampstead

Environmental Noise Time History: Position A

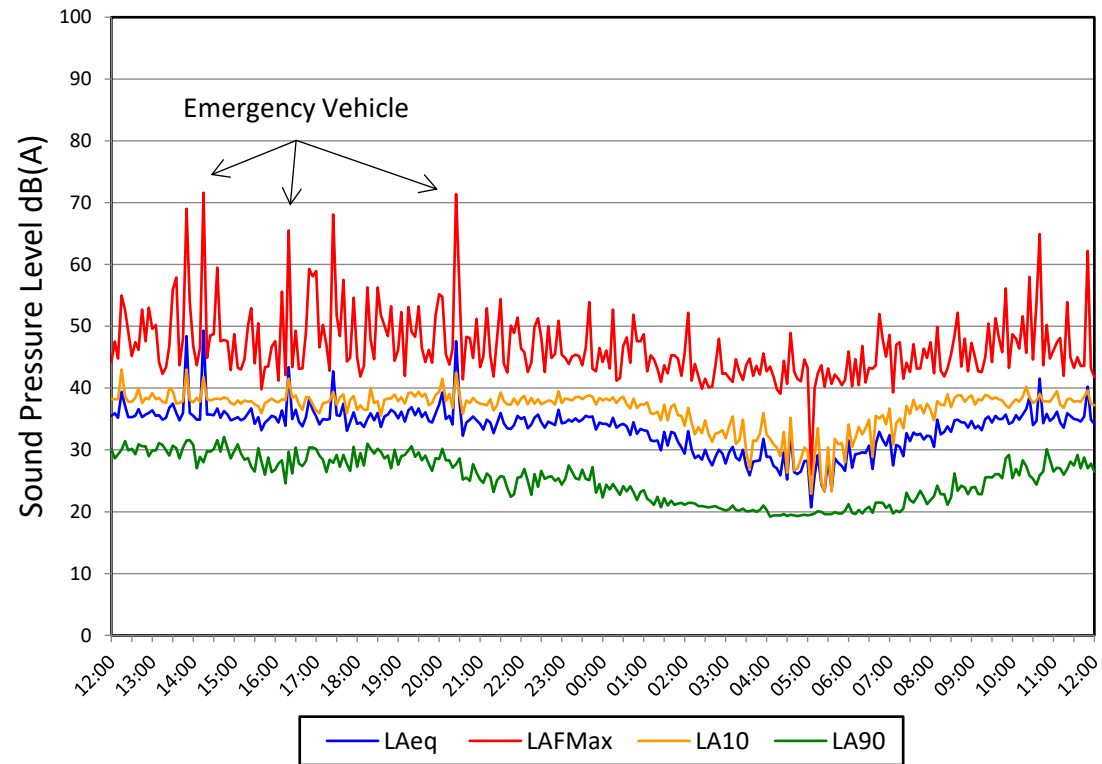


Friday 17 January to Saturday 18 January 2020

Figure AS11350/TH1

79 Fitzjohn's Avenue, Hampstead

Environmental Noise Time History: Position A

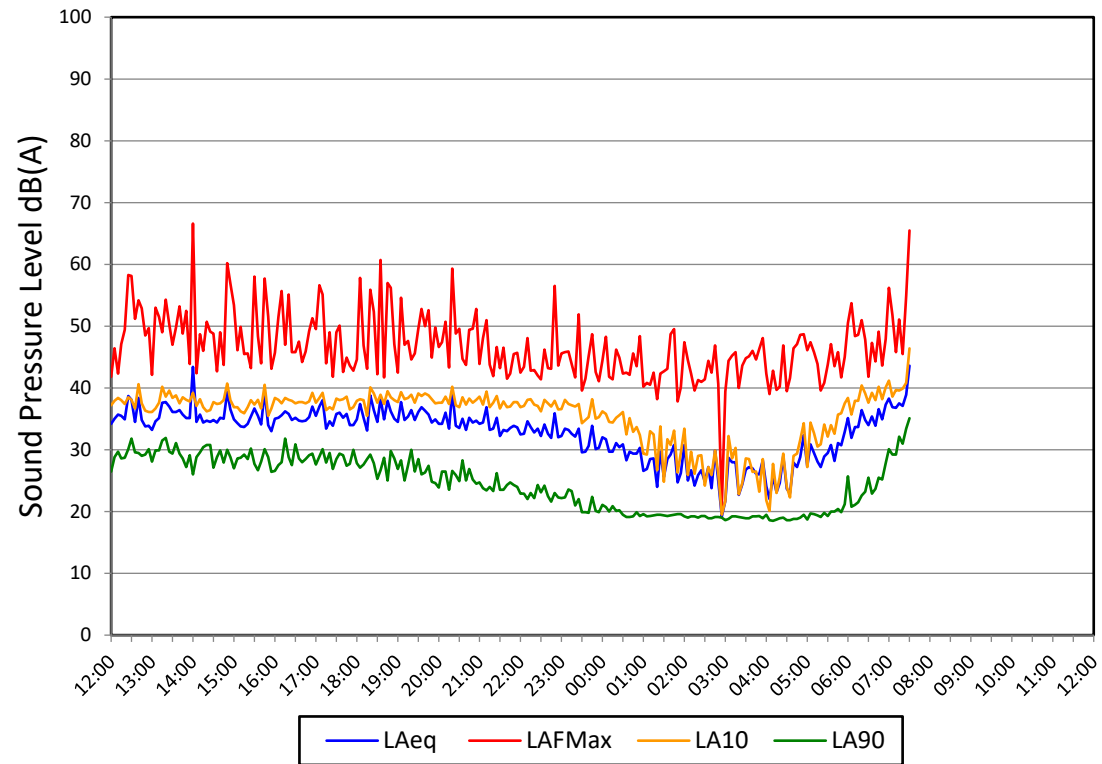


Saturday 18 January to Sunday 19 January 2020

Figure AS11350/TH2

79 Fitzjohn's Avenue, Hampstead

Environmental Noise Time History: Position A

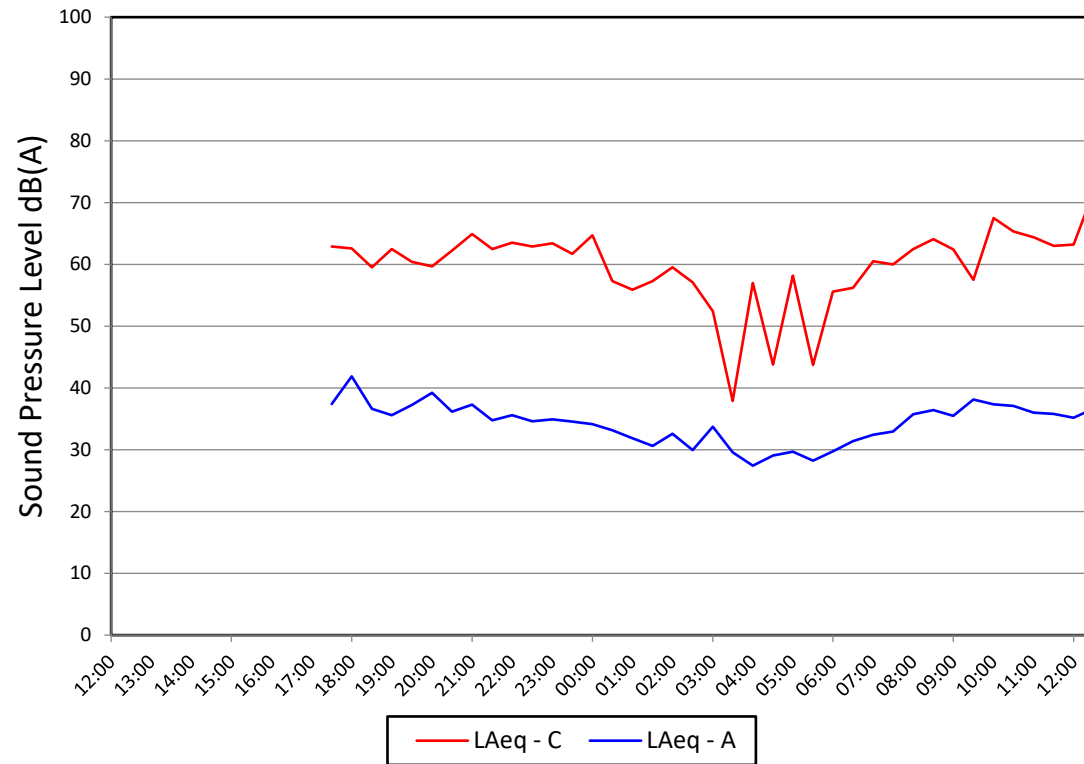


Sunday 19 January to Monday 20 January 2020

Figure AS11350/TH3

79 Fitzjohn's Avenue, Hampstead

Environmental Noise Time History: Position A and C

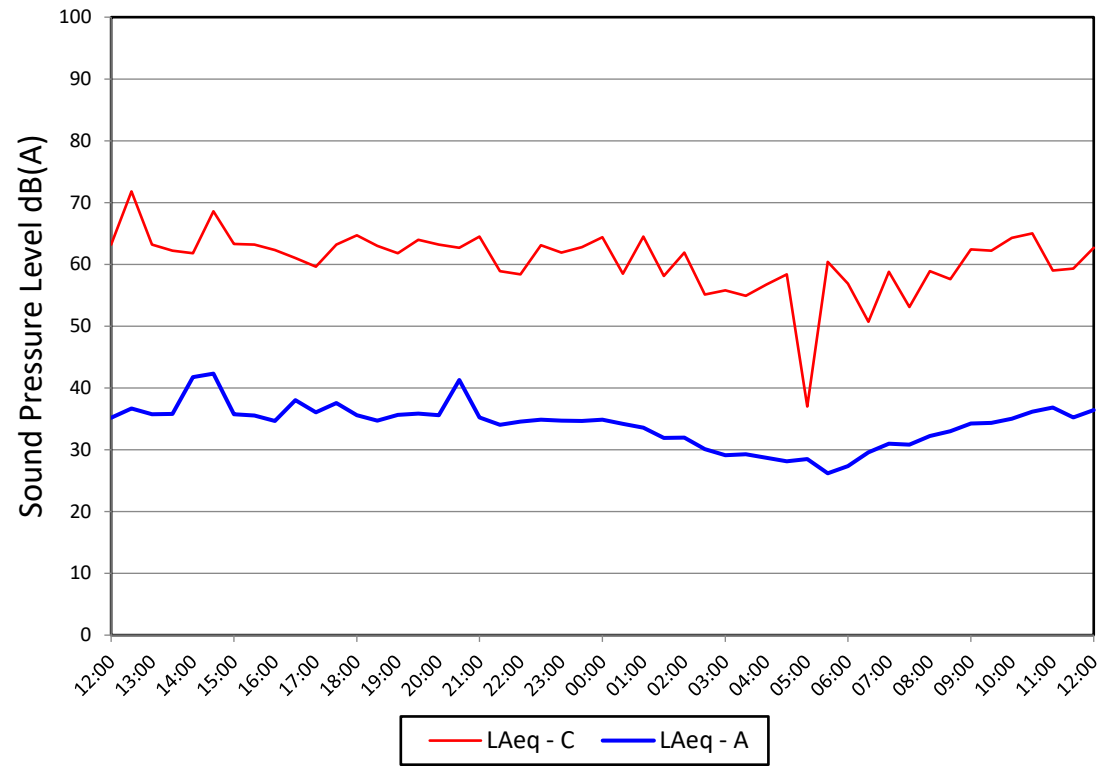


Friday 17 January to Saturday 18 January 2020

Figure AS11350/TH4

79 Fitzjohn's Avenue, Hampstead

Environmental Noise Time History: Position A and C

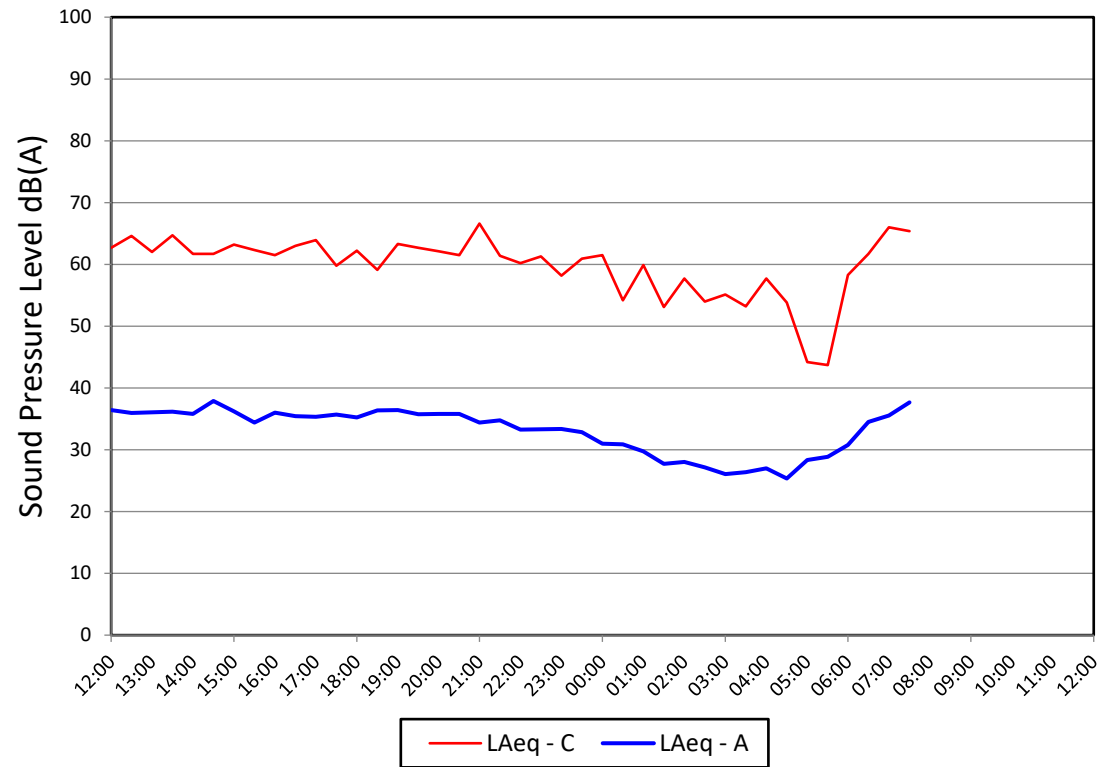


Friday 17 January to Saturday 18 January 2020

Figure AS11350/TH5

79 Fitzjohn's Avenue, Hampstead

Environmental Noise Time History: Position A and C



Friday 17 January to Saturday 18 January 2020

Figure AS11350/TH6