

15424.170131. L1

31 January 2017

Robert Rowland

By email to: robert@boomcycle.co.uk

Dear Robert,

15424: EAGLE HOUSE, 4A PROCTER STREET, LONDON

Further to your recent enquiry, this addendum letter provides an assessment of the proposed extension of the opening hours of the gym, in order to confirm if it will have an adverse impact on the amenity of the closest noise sensitive receiver.

It is understood that the planning application for an extension to the opening hours of the gym is as follows:

- 06:00am – 10:00pm Monday to Friday
- 08:30am – 10:00pm Saturdays
- 09:00am – 18:00pm Sundays

The results from the continuous noise monitoring are shown as a time history of L_{Aeq} , L_{Amax} , L_{A10} and L_{A90} averaged over 5 minute sample periods in the attached Figure 15424.TH1.

Minimum background noise levels are shown in Table 1.1.

	Minimum background noise level $L_{A90: 5min}$ dB(A)
Daytime (07:00am-11:00pm)	71
Night-time (11:00pm-07:00am)	71
Night-time operating hours (06:00am-7:00am)	71
Daytime operating hours (07:00am-22:00pm)	71

Table 1.1: Minimum measured background noise levels

As the proposed units will only be used during the premises operating hours, we would recommend the criterion of 61dB(A) at nearest residential receiver to be used on this assessment.

Please note that the aforementioned criterion is 10dB below the lowest background level (L_{A90} (15minutes)) and therefore fully compliant with the requirement of The London Borough of Camden for noise emissions of new plant.

It is understood that the proposed plant unit installation comprises the following units:

- 2 No. Toshiba RAS-16BAV-E Heat pump Inverters

Taking all acoustic corrections into consideration, including distance corrections, the noise levels expected at the closest residential window would be as shown in Table 1.2. Detailed calculations are shown in the attached Appendix B.

Receiver - Nearest Noise Sensitive Window	Criterion	Noise Level at Closest Receiver
Operating hours	61 dB(A)	38 dB(A)

Table 1.2: Predicted noise levels and criterion at nearest noise sensitive location

As shown in the attached Appendix B and Table 1.2, transmission of noise to the nearest sensitive windows due to the effects of the plant installation during the premises operating hours fully satisfies the emissions criteria set by The London Borough of Camden.

Furthermore, the value of 38dB(A) is to be considered outside of the building. Windows may be closed or partially closed leading to further attenuation, as follows.

Further calculations have been undertaken to assess whether the noise emissions from the proposed plant unit installation would be expected to meet the recognised British Standard recommendations, in order to further ensure the amenity of nearby noise sensitive receivers during the premises operating hours.

British Standard 8233:2014 '*Sound insulation and noise reduction for buildings – Code of Practice*' gives recommendations for acceptable internal noise levels in residential properties. Assuming worst case conditions, of the closest window being for a bedroom, BS8233:2014 recommends 35 dB(A) as being the value for internal resting/sleeping condition during the daytime and 30 dB(A) as being the value for internal resting/sleeping condition during the night-time .

With calculated external levels of 38dB(A), the residential window would need to provide an additional attenuation in order for the conditions to be achieved. According to BS8233:2014, even a partially open window offers 10-15dB attenuation, thus leading to an acceptable internal noise level that meets the criterion.

Receiver	Condition Design Range – <i>For resting/sleeping conditions in a bedroom, in BS8233:2014</i>	Noise Level at Receiver (due to plant installation)
Inside Nearest Residential Space	30 dB(A)	28 dB(A)

Table 1.3: Noise levels and criteria inside nearest residential space

Predicted levels are shown in Table 1.3, with detailed calculations shown in the attached Appendix B. It can therefore be stated that, as well as complying with the requirements of The London Borough of Camden, the emissions from the plant unit installation during the aforementioned premises operating hour would be expected to comfortably meet the most stringent recommendations of the relevant British Standard, even with neighbouring windows partially open.

Further calculations have been undertaken with regards to the relevant British Standard and it has been ensured that the amenity of nearby residential receivers will be protected during the aforementioned premises operating hours.

I trust that the above are satisfactory for your requirements and remain available should any further clarifications be required.

Best Regards,

Gonçalo Lemos MIOA, MSEE

KP Acoustics Ltd

Unit 4A, Eagle House, Procter Street, London
Environmental Noise Time History
8th April to 9th April 2013

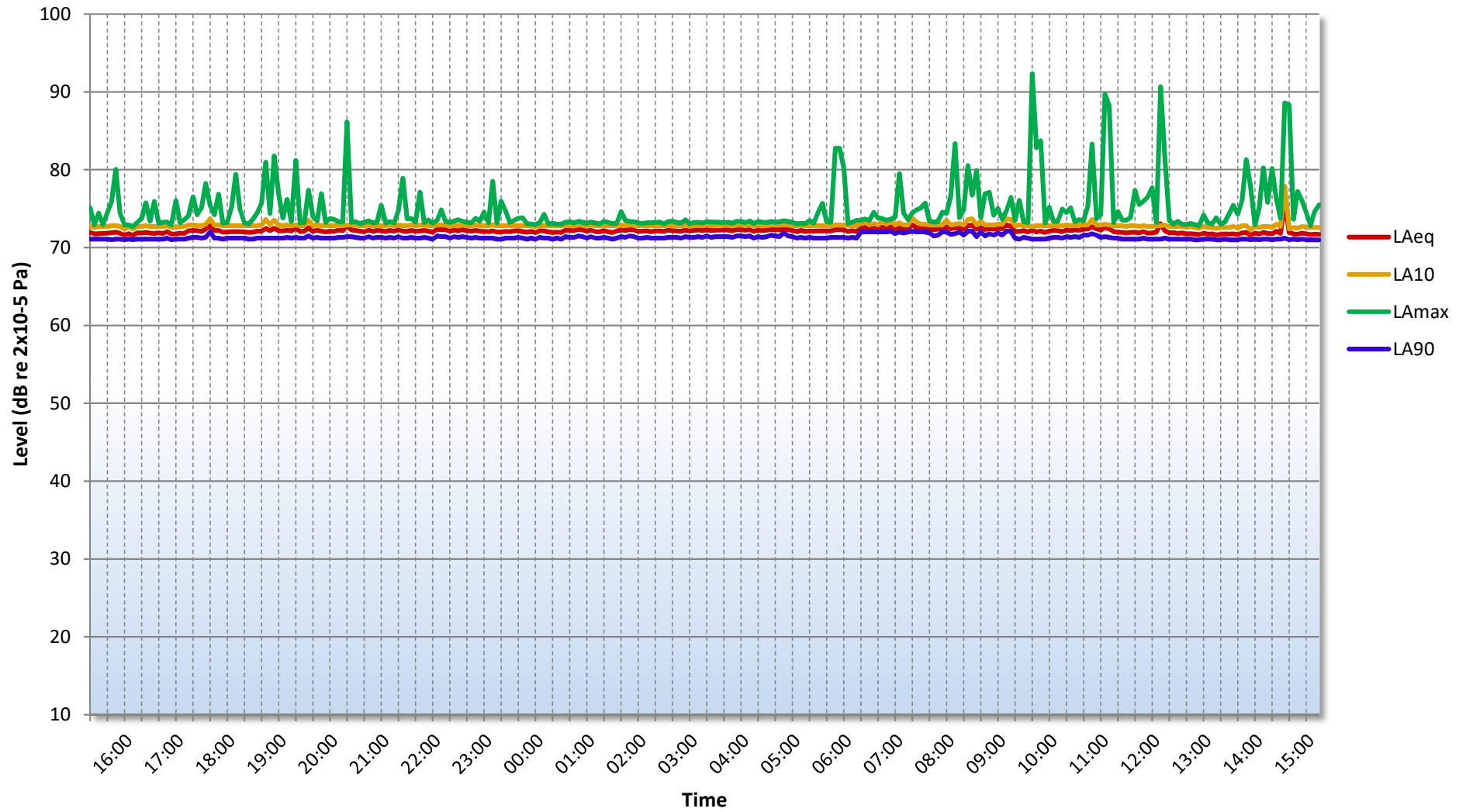


Figure 15424.TH1

APPENDIX B

UNIT 4A, EAGLE HOUSE, PROCTER STREET, LONDON

PLANT UNIT EMISSIONS CALCULATIONS

Source: Plant Unit Installation	<i>Frequency, Hz</i>								
Receiver: Residential properties located directly above the proposed installation location	<i>63</i>	<i>125</i>	<i>250</i>	<i>500</i>	<i>1k</i>	<i>2k</i>	<i>4k</i>	<i>8k</i>	<i>dB(A)</i>
2No. Toshiba RAS - 16BAV -E Heat pump Inverters	60	57	53	50	44	40	38	30	
Correction for number of units 2 No.	3	3	3	3	3	3	3	3	
Correction for reflections, dB	3	3	3	3	3	3	3	3	
Attenuation provided by distance (6m)	-16	-16	-16	-16	-16	-16	-16	-16	
Attenuation provided by the building envelope, dB	-1	-2	-3	-5	-5	-7	-7	-7	
Total Sound Pressure Level from Toshiba RAS- 16BAV-E Unit	49	45	40	35	29	23	21	13	38
Sound pressure level 1m from nearest residential receiver	49	45	40	35	29	23	21	13	38

Design Criterion	61
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Receiver: Inside Nearest Residential Window

Source: Plant Unit Installation	<i>Frequency, Hz</i>								
	<i>63</i>	<i>125</i>	<i>250</i>	<i>500</i>	<i>1k</i>	<i>2k</i>	<i>4k</i>	<i>8k</i>	<i>dB(A)</i>
Sound pressure level outside window	49	45	40	35	29	23	21	13	38
Minimum attenuation from partially open window, dB	-10	-10	-10	-10	-10	-10	-10	-10	-10
Sound pressure level inside nearest office window	39	35	30	25	19	13	11	3	28