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EA Noise Impact Assessment.

Address:

17 Rugby Street

London

WC1N 3QT

Client.

Bridie Hall
Pentreath & Hall

09 May 2017

Engineer: Simone Longo AMIOA

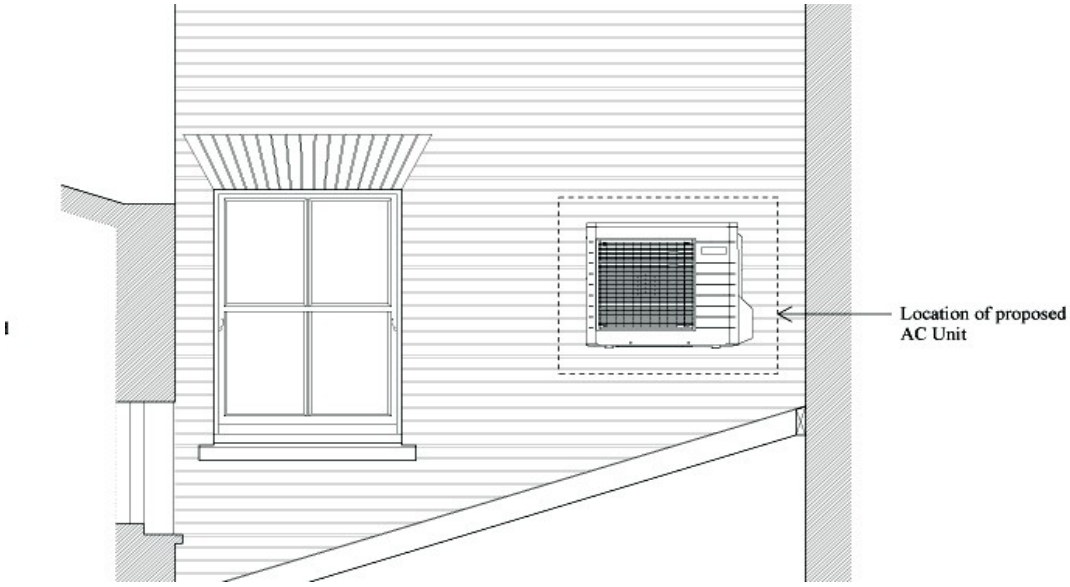
Acoustic Report – Environmental Assessment, (Noise Impact Assessment). 17 Rugby St, WC1N 3QT. Engineer: Simone Longo AMIOA	N. M. & S. www.noisemeasurements.co.uk - www.nmsacoustics.com e: info@nmsacoustics.com t: 0800 014 8482 - m: 07887561945 (24 hours)

Summary:

1.0 Survey address.

1.1 The environmental noise survey object of this report has been carried out at the rear facade nearest noise sensitive window position at 17 Rugby St, WC1N 3QT, below is an aerial map of the site taken from Google Earth showing the microphone position marked with an “A”, with a “B” is the proposed unit and the loft window marked with a “C” is the nearest noise sensitive window at an approximate distance of 3 m from the unit.

1.2 Furthermore the elevation drawings provided by the architect shows the installation in more details.



2.0 Environmental Noise survey details.

2.1 The noise survey was carried out on Monday 28th of November between the hours of 11 am until 17 approximately in order to capture the lowest representative background noise of the area during the propose hours of operation..

2.2 The measuring microphone was installed at the rear facade of the building at 1 m from the wall at the nearest accessible level just below the noise sensitive window.

3.0 Environmental noise survey results.

3.1.1 Environmental noise result lowest LA90,15min.

Lowest recorded background noise level.	
Recording made on 28/11/2016 @ 16.50	45.3 dBA LA90,15min

4.0 Weather condition:

4.1 No remarks.

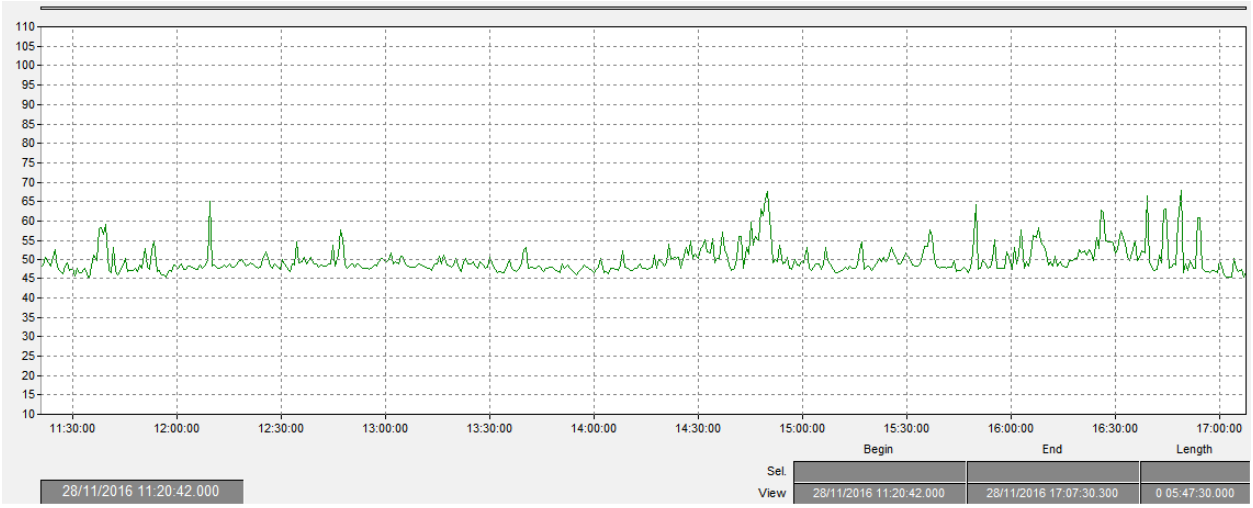
5.0 Instrumentation

5.1 Table showing instrumentation data.

Instrument type:	Norsonic Sound Analyser Nor-140			Serial no:	1402725
Preamflifier type:	Norsonic Type Nor-1209			Serial no:	12247
Microphone type:	Norsonic Type Nor-1225			Serial no:	24301
UKAS ILAC periodic laboratory verification by:	UKAS ILAC LABORATORY 0789 CERTIFICATE U17345				
Date of last verification:	04/11/14				
Calibrator type:	Norsonic Type 1251			Serial no:	31943
UKAS ILAC periodic laboratory verification by:	UKAS ILAC LABORATORY 0789 CERTIFICATE U17243				
Date of last verification:	04/11/15				
Measurement title:	EA assessment / sampling technique.			Date:	28/11/16
Measurement duration:	Continuous integration.	Period length:	15 min.	Filter bandwidth:	(A) 1/1 Oct
Initial calibration level:	113.9 dB	Sampling frequency:	50 ms	End calibration level:	113.9 dB

6.0 Noise survey data in graphical form.

6.1 Time Vs. Level graph relative to the survey.



7.0 Survey numerical data.

28/11/2016 11:20:42.000 - 28/11/2016 11:35:41.999	0 00:15:00.000	45.4 dB
28/11/2016 11:35:42.000 - 28/11/2016 11:50:41.999	0 00:15:00.000	45.8 dB
28/11/2016 11:50:42.000 - 28/11/2016 12:05:41.999	0 00:15:00.000	45.7 dB
28/11/2016 12:05:42.000 - 28/11/2016 12:20:41.999	0 00:15:00.000	47.1 dB
28/11/2016 12:20:42.000 - 28/11/2016 12:35:41.999	0 00:15:00.000	47.1 dB
28/11/2016 12:35:42.000 - 28/11/2016 12:50:41.999	0 00:15:00.000	47.7 dB
28/11/2016 12:50:42.000 - 28/11/2016 13:05:41.999	0 00:15:00.000	47.4 dB
28/11/2016 13:05:42.000 - 28/11/2016 13:20:41.999	0 00:15:00.000	47.2 dB
28/11/2016 13:20:42.000 - 28/11/2016 13:35:41.999	0 00:15:00.000	46.1 dB
28/11/2016 13:35:42.000 - 28/11/2016 13:50:41.999	0 00:15:00.000	45.9 dB
28/11/2016 13:50:42.000 - 28/11/2016 14:05:41.999	0 00:15:00.000	45.5 dB
28/11/2016 14:05:42.000 - 28/11/2016 14:20:41.999	0 00:15:00.000	46.4 dB
28/11/2016 14:20:42.000 - 28/11/2016 14:35:41.999	0 00:15:00.000	47.3 dB
28/11/2016 14:35:42.000 - 28/11/2016 14:50:41.999	0 00:15:00.000	47.1 dB
28/11/2016 14:50:42.000 - 28/11/2016 15:05:41.999	0 00:15:00.000	46.9 dB
28/11/2016 15:05:42.000 - 28/11/2016 15:20:41.999	0 00:15:00.000	46.3 dB
28/11/2016 15:20:42.000 - 28/11/2016 15:35:41.999	0 00:15:00.000	47.6 dB
28/11/2016 15:35:42.000 - 28/11/2016 15:50:41.999	0 00:15:00.000	46.5 dB
28/11/2016 15:50:42.000 - 28/11/2016 16:05:41.999	0 00:15:00.000	46.9 dB
28/11/2016 16:05:42.000 - 28/11/2016 16:20:41.999	0 00:15:00.000	47.5 dB
28/11/2016 16:20:42.000 - 28/11/2016 16:35:41.999	0 00:15:00.000	48.9 dB
28/11/2016 16:35:42.000 - 28/11/2016 16:50:41.999	0 00:15:00.000	46.8 dB
28/11/2016 16:50:42.000 - 28/11/2016 17:05:41.999	0 00:15:00.000	45.3 dB
28/11/2016 17:05:42.000 - 28/11/2016 17:07:49.300	0 00:02:07.350	44.2 dB

8.0 Subjective impression of the soundscape.

8.1 At the time of the installation of the equipment for the survey noise from human activity was noticeable at the site some DIY power tools, speech noise and some sporadic air traffic was the main contribution to the noise climate, traffic noise humming in the background was not particularity discernible.

9.0 Comments on the survey result.

9.1 The environmental noise survey was carried out at the nearest accessible location however this was at the rear facade of the building and the noise sensitive window is located at the floor above on the pitch roof, for this reason the environmental noise measured should be considered conservative and a correction of +2 dBA should be applied to take into account the increase in noise exposure of the noise sensitive window.

10.0 Proposed plant noise source installation.

10.1 The proposed plant consist in a air conditioning unit, maker DAIKIN model RXS-L.

10.2 Manufacture declared noise emission is 49 dBA (Heating / Cooling)

10.3 Operating hours for the propose plant is 11 am until 5 pm

11.0 Noise impact assessment.

11.1 As follow a simplified predictive estimated to evaluate the noise impact of the unit.

11.1.1 The proposed unit noise emission is given at 49 dBA this without any further details given should be understood as hemispherical radiation at 1 m distance.

11.1.2 The unit will be installed in a somehow narrow space in proximity of other reflective surfaces for this reason a correction of +3 is suggested (49+3) 52 dBA at 1 m

11.1.3 The nearest noise sensitive window from the unit is the loft window at the floor above at an approximated distance of 3 m, according with the inverse distance law 52 dBA measured at 1 m travelling at the distance of 2 m will be reduced to 42.4 dBA at 1 m from the centre window, which in this case is on the vertical axis from the proposed unit.

11.1.4 In this specific case however the noise sensitive window and proposed unit are not in the line of sight, the window is a loft window and is screened by the external wall of the building which cast an acoustic shadow, in this case I propose a -15 dBA correction to the noise emission to account

for the this effect, the total noise arriving at 1 m from the noise sensitive window is now (42.4-15)=27.4 dBA

11.1.5 To evaluate the environmental impact of the noise produced by the unit is necessary to compare the lowest representatives background noise LA90,15MIN from the predicted noise emission of the unit at the receptor window, in this case (45.3-27.4)= 17.9 dBA

11.1.6 The unit noise emission result 17.9 dBA below background noise and do not requires any noise mitigation to comply with the council noise policy.

12.0 Conclusion.

12.1 According with the predictive estimates the unit noise is well below the required threshold and should pose no detrimental effect to the surrounding amenities, therefore in regards to noise planning permission is recommended for approval.

Approved for Issue on behalf of
Noise Measurements & Solutions

Simone Longo Acoustic Engineer MA - AMIOA – AIA
Founder and director of Noise Measurements & Solutions.

Appendix A

SOURCE OF INFORMATION

Information used in this assessment has been obtained from the following sources:

- BS8233: 2014 Sound Insulation and noise reduction for buildings – Code of Practice.
- BS4142: 2014 Method for rating industrial noise affecting mixed residential and industrial areas.
- BS7445: 1991: Description and measurement of environmental noise.
- Engineering and noise control Third edition.
- Acoustic calculations: NOR-Review software.

Appendix B

GLOSSARY

dB Decibel. The decibel scale measures levels relative to a reference, either a fixed reference when measuring absolute levels, or another level when expressing changes. If the quantity is power- like (i.e. could be expressed in watts) the level in decibels is 10 times the common logarithm of the ratio of the measured quantity to the reference quantity. If the quantity is a physical amplitude such as pressure or voltage, and the power of the quantity is related to the its square, then the

decibel level is 20 times the common logarithm of the ratio of the measured quantity to the reference quantity. Thus doubling of power gives a 3 dB increase, while a doubling of pressure gives a 6 dB increase.

L*A* A-weighted sound pressure level. The units are decibels, abbreviated dB (or dB(A) if the subscript A is omitted). A- weighting is a frequency weighting which discriminates against low frequency and very high frequency sound in order to approximate the frequency response of the human ear. The subscript *s* or *f* signifies that the time constant of the measurement is either 'slow' (1 second) or 'fast' (125 milliseconds)

L*Amax* The maximum value of L*A* reached during one or more noise events. (See reference to '*s*' and '*f*' subscripts above).

L*Aeq,T* Equivalent continuous sound level. The root mean square sound pressure level determined over time interval T expressed in decibels. May be regarded as the level of a notional steady sound which has the same energy in period T as an actual time-varying sound which occurs in the same period. Sound level, duration and number of events are treated such that doubling the number of events, or doubling the duration of an event, has the same effect as doubling the number of sources (i.e. doubling the energy), which in the decibel scale is an increase of 3 dB (see above).

L*A10* The A-weighted sound level in dB which is exceeded for 10% of the time period stated.

ppv Peak particle velocity, the highest instantaneous velocity reached by a vibrating surface.

VDV Vibration Dose Value, the fourth root of the time integral of the fourth power of the frequency-weighted vibration velocity. The frequency weightings are specified in BS 6841:1987 and BS 6472:1992. The units are ms-1.75.

SELv Sound Exposure Level (or Single Event Level), the time integral of the squared sound pressure expressed in decibels. May be regarded as L*Aeq,T* normalised so that T is one second regardless of the actual duration of the event. Is used to construct L*Aeq,T* for a period containing many noise events, from knowledge of the SELv for each individual event.