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Internal Noise Impact Assessment.

Address:

Music & Beans
82 Camden High Street London NW1 0LT

Client:

Music & Beans Camden

Rev01

26 May 2018

Acoustic Consultant: Simone Longo AMIOA

Acoustic Report – Environmental Noise Impact Assessment EA - Internal Noise. Music & Beans Camden 82 Camden High Street London NW1 0LT 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:

Acoustic Report – Environmental Noise Impact Assessment EA - Internal Noise. Rev01 Music & Beans Camden 82 Camden High Street London NW1 0LT 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)

1.0 Survey address.

1.1 This survey was carried out at the premises in **82 Camden High Street London NW1 0LT** in the internal spaces dining area and rear kitchen.

1.2 The noise impact assessment object of this report is primarily to estimate whether the internal noises currently generated by the activity can adversely impact on the residential flat directly above.

2.0 Description of the premises and activity.

2.1 The activity can be briefly described as eat / drink in and take away coffee shop, a number of seating are available on the ground floor and basement floor, the main activity is coffee making, smoothie juices, and some pre cooked food prepared in the rear kitchen.

3.0 Noise sources.

3.1 For the purpose of this noise impact assessment it was noted the following noise sources.

3.2 At the front desk area there are a coffee grinder and coffee machine, a centrifugal mixer for making smoothie and a juice machine.

3.3 In the rear kitchen I have noticed three fridges, two ovens an extractor canopy dishwasher machine.

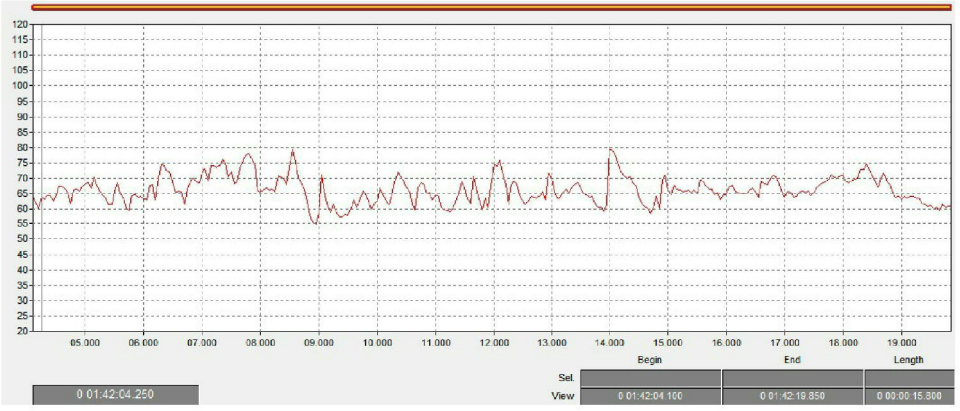
3.4 In the dining area background music is played and crowd noise should be accounted for in this assessment.

4.0 Noise Sources Measurements results.

4.1 Internal averaged music noise (measurement by moving microphone technique)

4.1.1 Measurement Result: 69 dB LAeq 14 sec.

4.2 Music noise time VS Level history.

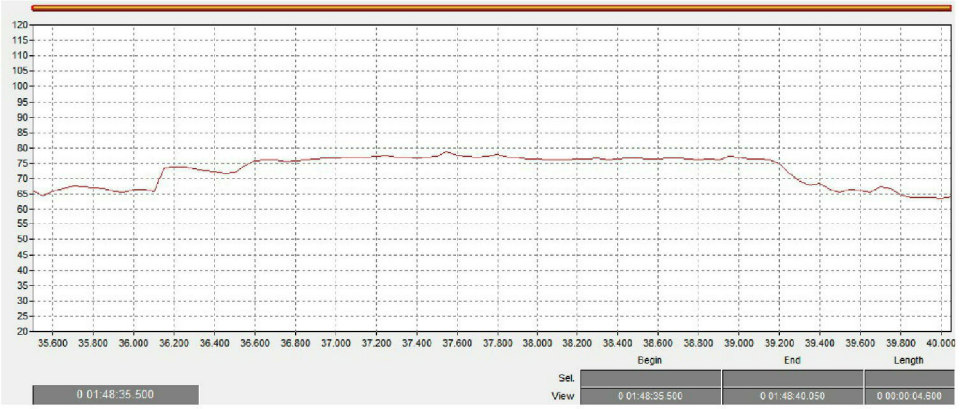


4.3 As follow is a picture showing the room just before the start of this measurement, as it can be seen no many customers are in the room and mainly music noise was audible, towards the other end (front of shop) road traffic noise was louder than indoor music noise, at around 72 dBA.

4.4 It should be noted that some appliances such as coffee machine and coffee grinder are installed in the front extension near the entrance and therefore with no neighbour above, here below another picture showing the part of the counter in the front ground floor extension with the appliances circled in red.

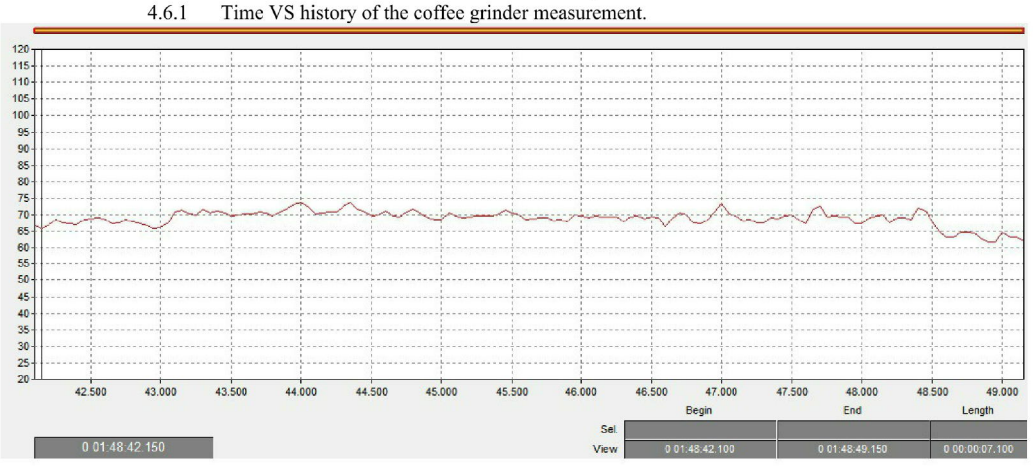
4.5 Steam release from the coffee machine was measured at 78 dBA 2.5 sec.

4.5.1 Time VS history of the steam release measurement.



4.6 Coffee Grinder noise was recorded at 70 dB LAeq 6 sec

4.6.1 Time VS history of the coffee grinder measurement.



4.7 Smoothie centrifugal: 82 dBA LAeq 6 sec.

4.7.1 Smoothie centrifugal time VS level history.

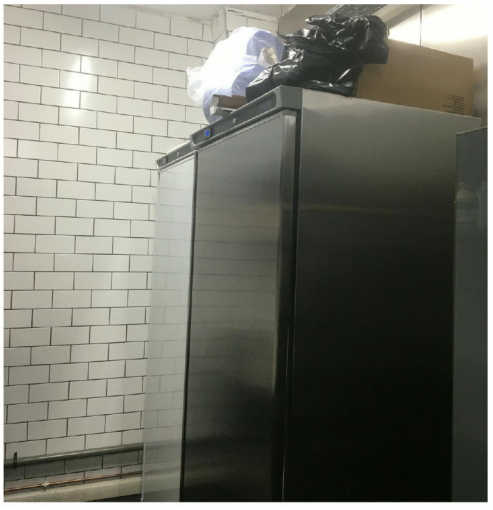
4.7.2 It should be noted that the smoothie machine is situated just below the residential flat above.

4.8 Kitchen noise.

4.8.1 The kitchen noise sources are mainly the fridges, as the ovens and dishwasher don't seems to produce any appreciable noise.

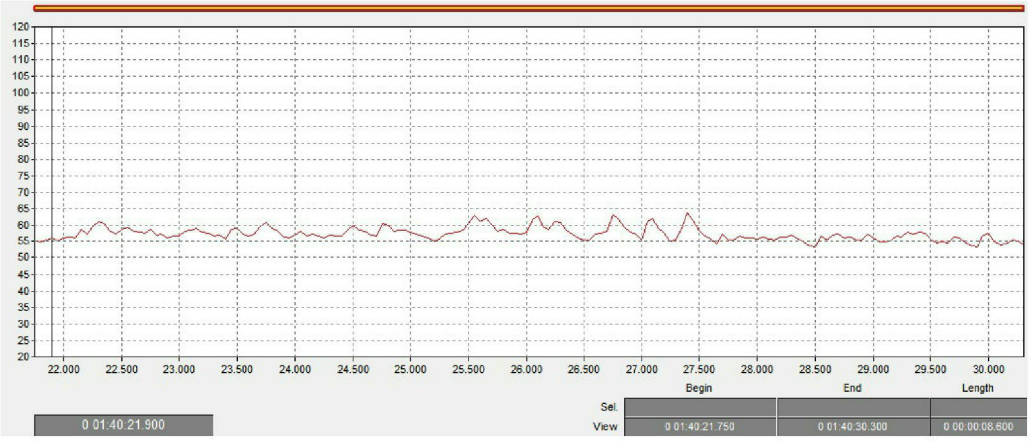
4.8.2 The fridges in any case where rather quiet, for the measurement the doors where opened for few minutes then closed to start the compressors and fans.

4.8.3 Here below some pictures of the kitchen appliances.



4.9 The fridge noise was unmeasurable due to the music noise too high, an LAMin indicates 53 dBA

4.10 Below is the Time VS history of the measurement.



5.0 Crowd noise.

5.1 During a number of visits the premises where found almost or partially empty of customers therefore a field measurement could not be carried out, in this case crowd noise could be estimated at 75 dBA at peak capacity.

6.0 Identification of the plant.

6.1 Maker and model n of equipments.

6.1.1 Coffee machine: "La Marzacco"

6.1.2 Polar Light Duty Single Door Freezer Stainless Steel 600 Ltr 600 Ltr.

6.1.3 Polar Light Duty Single Door Fridge White 600Ltr 600 Ltr.

6.1.4 Polar 4 Door Counter Fridge 553 Ltr Stainless Steel Finish.

6.1.5 Santos Silent Drinks Blender 62A 1.5kW

6.1.6 Waring Torq 2 Blender TBB145K 1.4kW. Dual speed.

6.1.6.1 Other equipments where deemed not relevant to this assessment.

7.0 Instrumentation.

7.1 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 LABORATORY 0653 CERTIFICATE 09613		
Date of last verification:	08/12/16		
Calibrator type:	Norsonic Type 1251	Serial no:	31943
UKAS ILAC periodic laboratory verification by:	UKAS CALIBRATION 0653 UKAS LABORATORY 0653 CERTIFICATE UCRT17/2118		
Date of last verification:	15/12/17		
Measurement title:	EA assessment / sampling technique	Date:	24/05/2018

Measurement duration: sampling hours.	Continuous integration.	Period length:	15 min.	Filter bandwidth:	(A) 1/3
Initial calibration level:	113.9 dB	Sampling frequency:	50 ms	End calibration level:	113.9 dB

8.0 Personnel:

Simone Longo
NMS principal consultant AMIOA MA
Third party accreditation:
ALP10/991-INAC260 Certificate of Competence in Acoustics (EU)
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9.0 Weather condition:
- 9.1 Not applicable.

10.0 Floor insulation.
- 10.1 It is understood that floor insulation consist of two plasterboards one of them fire and one sound board applied directly to the joists, in the void in between the joists a standard fibrous absorber was installed.
- 10.2 Since an acoustic noise insulation test is not possible due to access problems the floor insulation must be estimated on the basis of the description provided.
- 10.3 I am unaware of other information on the floor make up, and if there is a void in between the ceiling of the shop and the floor of the commercial, therefore on the basis of the information given
  - 10.3.1 The suggested estimated noise insulation is in the range of no more than 32 dBA airborne noise impedance at most.

11.0 Noise impact assessment estimate.
- 11.1 As seen from the field measurements in this report the most noisy sources are the smoothie machine blender, which produces 82 dBA at 2 m approximately, with a separating floor insulation estimated at 32 dBA approximately this noise emission impact the floor above transferring noise level in the range of 50 dBA which is clearly a great deal.
- 11.2 Music noise estimated impact on the floor above is in the range of 37 dBA
- 11.3 Crowd noise estimated at 75 dBA at peak time will impact to the floor above with transmission of 43 dBA which is also a substantial disturbance.
- 11.4 It soon becomes obvious that, the substandard ceiling / floor insulation must be improved in order to achieve a reasonable amount of noise insulation between the premises and the residential above.

12.0 Noise mitigation measure.
- 12.1 According with the estimates, the floor insulation should be designed to achieve no less than 50 dBA insulation overall.
- 12.2 That would allow the emission level of the commercial activity to impact on the residential spaces by 25 dBA or less which should be acceptable, especially as there busy road adjacent.
- 12.3 With 30 dBA ambient noise in the residential premises, the noise impact of the activity will be negligible.
- 12.4 In addition to the ceiling upgrade also the loudest blender machine used for the smoothie preparation should be removed from the current location and used at the front of the room in the front extension, this will reduce its impact on the residential above.

13.0 Suggested ceiling upgrade.
- 13.1 On the current ceiling one additional layer of acoustic plasterboard 15 mm thick and minimum weight per square m of 13 Kg should be installed by using resilient bars.

13.2 Then a suspended ceiling with two additional layers of the same 15 mm plasterboard should be made to form a 150 - 200 mm void.

13.3 Void between the joists should be filled with acoustic rock wool density 40 Kg / m3

13.4 The floor upgrade description above will achieve no less than 50 – 55 dBA total noise impedance preventing noise generated from the commercial activity to cause any loss of amenities to the residential above.

14.0 Conclusion.

14.1 Since the primary noise source is entertainment noise, the management will make sure that excessive noise is not produced and therefore the commercial activity will not have any adverse impact on the residential above, therefore planning application should be granted on the basis of noise.

Approved for Issue on behalf of
Noise Measurements & Solutions

Simone Longo
Acoustic Consultant MA - AMIOA – AIA
Founder of NMS Acoustics.

The Director of Music & Beans.
Emre Kubilay

Appendix A
SOURCE OF INFORMATION

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

- Planning Policy Guidance PPG24.
- BS8233: 1999 Sound Insulation and noise reduction for buildings – Code of Practice.
- BS4142: 1997 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
- Inverse square law calculator web based at http://www.sengpielaudio.com/calculator-squarelaw.htm

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.