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NORTHSPRING, 19 CHAPEL WALKS, MANCHESTER

NOISE IMPACT ASSESSMENT

Report **17696-NIA-01_RevB**

Prepared on 06 January 2023

Issued For:

Chapel Walks GP Limited on behalf of Chapel Walks LP

c/o 1 Portland Place

London

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Executive Summary

This noise impact assessment has been undertaken in order to assess proposed bar use at the upper ground floor level of Northspring, 19 Chapel Walks, Manchester

Proposals will include customer seating and standing areas, where it is understood amplified will be played at an 'background level.

A background noise survey has been undertaken as detailed in the report, in order to determine an appropriate noise emission criterion, in accordance with the requirements of Manchester City Council.

Calculations were undertaken for the nearest residential receivers, identified as a first floor east facing window on the adjacent Motel One hotel and a south facing window of Union Buildings, 11 - 17 Chapel Walks. Additional calculations were undertaken for proposed restaurant and existing office premises above the site. It should be noted that if there are closer receivers that Clement Acoustics is not aware of, a reassessment will be necessary, and this should therefore be confirmed by the Client.

It has been demonstrated that compliance with the established criterion is feasible, dependant on the following material considerations:

- The bar operates between 12:00 and 02:00 only
- Receiver locations are as established in this report and marked on the attached site plan
- Mitigation is applied as recommended in this report, in the form of the attached noise management plan

If there is any deviation from the above, Clement Acoustics must be informed, in order to establish whether a reassessment is necessary.

Clement Acoustics has used all reasonable skill and professional judgement when preparing this report. The report relies on the information as provided to us at the time of writing and the assumptions as made in our assessment.

Contents

1.0	INTRODUCTION	1
2.0	SITE DESCRIPTION	1
3.0	ENVIRONMENTAL NOISE SURVEY	2
3.1	Unattended Noise Survey Procedure	2
3.2	Weather Conditions	2
3.3	Equipment	3
4.0	RESULTS.....	3
4.1	Unattended Noise Survey Results	3
5.0	NOISE CRITERIA	4
5.1	Local Authority Criteria – Residential Receptors.....	4
5.2	Commercial Receivers	4
6.0	BAR OPERATION NOISE	5
6.1	Proposed Activities.....	5
6.2	Noise Breakout Assessment – Existing Construction	6
6.3	Noise Breakout Assessment – Commercial Receivers.....	7
7.0	PROPOSED MITIGATION.....	7
7.1	Noise Limiter – Music	7
7.2	Proposed Window Upgrades.....	8
7.3	Door Upgrades	9
7.4	Proposed Floor Upgrade Works	9
7.5	Proposed Wall Upgrade Works	10
8.0	NOISE IMPACT ASSESSMENT.....	10
8.1	Operation Noise	10
8.2	British Standard Requirements	11
9.0	CONCLUSION	12

List of Attachments

17696-SP1	Indicative Site Plan
17696-TH1	Environmental Noise Time History
17696-DWG1 & DWG2	Indicative Construction Drawings
Appendix A	Glossary of Acoustic Terminology
Appendix B1 to B4	Acoustic Calculations
Appendix C	Noise Management Plan

Document Revision	Date of Revision	Reasons for Revision	Revision By
0	10/10/2022	First Issue	Jamie Newton AMIOA
A	11/10/2022	Addressing client comments	Jamie Newton AMIOA
B	06/01/2023	Updated operation hours and assessment of receiver at Union Buildings	Jamie Newton AMIOA

1.0 INTRODUCTION

Clement Acoustics has been commissioned by Chapel Walks GP Limited on behalf of Chapel Walks LP to measure existing background noise levels at Upper ground floor Unit, Northspring, 19 Chapel Walks, Manchester. Measured noise levels have been used to determine noise emissions criteria for a proposed bar in agreement with the planning requirements of the Manchester City Council.

This report presents the results of the environmental survey followed by noise impact calculations and outlines any necessary mitigation measures. An acoustic terminology glossary is provided in Appendix A.

2.0 SITE DESCRIPTION

The site is located at the building previously known as Cavendish House, bound by Pall Mall to the east, Chapel Walks to the south, Blackpool Fold to the west and Hotel Motel One Manchester Royal to the north. The surrounding area is predominantly commercial in nature.

Proposals are for a change of use for an upper ground floor unit within Northspring, 19 Chapel Walks for use as a bar serving drinks only. Proposals will include customer seating areas, where it is anticipated background levels of music will be played for the majority of the time. It is understood there are no proposals for amplified music is not anticipated to be played at an 'entertainment' level.

East facing windows within the adjacent hotel and south facing windows of Union Buildings, 11 - 17 Chapel Walks have been identified as the nearest affected residential receivers. This nearest noise sensitive receivers were identified through observations on-site. If there are any receivers closer to that identified within this report then a further assessment will need to be carried out. Therefore, the closest noise sensitive receiver should be confirmed by the client before any noise mitigation measures are implemented.

Locations are shown in attached site plan 17696-SP1.

3.0 ENVIRONMENTAL NOISE SURVEY

3.1 Unattended Noise Survey Procedure

Measurements were undertaken at one position as shown on indicative site drawing 17696-SP1. The choice of this position was based both on accessibility and on collecting representative noise data in relation to the nearest affected receivers.

The surroundings and position used for the monitoring location are described in Table 3.1.

Position No.	Description
1	The microphone was mounted on a third storey window at the north of the building. The microphone was positioned 1 m in front of the window. ^[1]

Table 3.1: Description of unattended monitoring locations

Note [1]: The position was not considered to be free-field according to guidance found in BS 4142: 2014, and a correction for reflections has therefore been applied. Based on the presence of the reflective surface and the nature of surrounding noise sources, a correction for reflections of 3 dB has been applied, in line with the recommendations of the standard.

Continuous automated monitoring was undertaken for the duration of the survey between 15:00 on 15 July 2022 and 09:00 on 18 July 2022.

The measurement procedure generally complied with BS 7445: 1991: '*Description and measurement of environmental noise, Part 2- Acquisition of data pertinent to land use*'.

3.2 Weather Conditions

At the time of set-up and collection of the monitoring equipment the weather conditions were dry with a light wind. It is understood that the weather conditions during the unattended survey remained dry with wind speeds below 5 m/s.

It is considered that the weather conditions did not significantly adversely affect the measurements and are therefore considered suitable for the measurement of environmental noise.

3.3 Equipment

The equipment calibration was verified, by means of a field verification check, before and after use and no abnormalities were observed.

The equipment used was as follows.

- 1 No. Svantek Type 957 Class 1 Sound Level Meter
- Norsonic Type 1251 Class 1 Calibrator

4.0 RESULTS

4.1 Unattended Noise Survey Results

The $L_{Aeq:5min}$, $L_{Amax:5min}$, $L_{A10:5min}$ and $L_{A90:5min}$ acoustic parameters were measured at the location shown in site drawing 17696-SP1.

Measured noise levels are shown as a time history in Figure 17696-TH1, with average ambient and minimum background noise levels summarised in Table 4.1.

Time Period	Average ambient noise level	Minimum background noise level
	$L_{eq:T}$	$L_{90:5min}$
Daytime (07:00 - 23:00)	54 dB(A)	44 dB(A)
Night-time (23:00 - 07:00)	44 dB(A)	42 dB(A)
Operational Hours (12:00 – 02:00)	55 dB(A)	43 dB(A)

Table 4.1: Average ambient and minimum background noise levels

5.0 NOISE CRITERIA

5.1 Local Authority Criteria – Residential Receptors

The Manchester City Council general criteria for noise emissions affecting residential receptors are as follows:

“The noise level from any plant or activities shall be 10dB or more below the lowest measured external background noise LA_{90T} at the closest residential window. The equipment shall be installed and constructed in accordance with any approved scheme and be permanently maintained thereafter.”

Based on the results of the environmental noise survey and requirements of the Manchester City Council, Table 5.1 presents the proposed activity emission criteria to be achieved at 1 m from the nearest noise sensitive receivers.

Period	Noise Emission Limit $L_{eq,T}$
Daytime (07:00 - 23:00)	34 dB(A)
Night-time (23:00 - 07:00)	32 dB(A)
Operational Hours (12:00 – 02:00)	33 dB(A)

Table 5.1: Noise emission limits for residential receivers

5.2 Commercial Receivers

The closest receivers to the site are proposed commercial offices on the first floor of Northspring Chapel Walk, and office buildings upper ground floor entrance and reception. Locations are shown as Receiver Locations 2 and 3 respectively in attached site plan 17696-SP1.

In order to assess whether noise emissions will be controlled to an acceptable level, guidance has been sought in British Standard 8233: 2014 ‘Guidance on sound insulation and noise reduction for buildings’ [BS 8233].

In Table 6 of BS 8233, guidance is given on typical noise levels for non-domestic buildings where concentration may be required. The relevant guidance given in this table is summarised in Table 5.2.

Objective	BS8233 Description	Location	Design range $L_{Aeq,T}$ dB
Study and work requiring concentration	Executive office	Office Above	35-40 dB(A)
Circulation	Staff / Meeting Room	Reception Adjacent	35-45 dB(A)

Table 5.2: BS8233 recommended internal background noise levels

Based on the use of the adjacent space, we would recommend noise emissions should not exceed the design ranges shown in Table 5.2.

6.0 BAR OPERATION NOISE

6.1 Proposed Activities

As the building is not currently in use as a bar, manual measurements were taken of similar sized venue, with patrons present and music played back at a level considered to be an entertainment level. In this way, an assessment will be provided for the worst-case scenario of loudest noise levels.

The measured noise levels that will be used in calculations are as shown in Table 6.1.

Source	Sound Pressure Level (dB) in each Frequency Band, at source								dB(A)
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
Busy Bar with Background Music	93	93	90	91	87	81	71	66	92

Table 6.1: Measured Noise Levels

These levels will be used to calculate the current noise breakout to nearby noise sensitive receivers.

6.2 Noise Breakout Assessment – Existing Construction

Windows to rooms used for residential purposes have been identified at the location shown in attached site plan 17693-SP1. The closest windows are located a minimum of 14 m from the façade of the proposed venue.

The facade to the venue is formed of existing masonry and glazing. In order to provide a robust assessment, nominal doorsets and single glazing windows have been assumed for the façade construction. Laboratory data for glazing and masonry and doorset is shown in Table 6.2.

Construction	Stated Sound Reduction in Each Frequency Band							
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
5mm Single Glazing	20	19	23	30	35	27	32	35
Masonry	51	58	65	70	75	79	84	84
Standard Doorset	18	19	22	26	24	23	20	19

Table 6.2: Predicted sound reduction of café bar facade

The main entrance doors to the bar are on the eastern facade of the building, 14 m west of the Receiver 1, Motel One. Receiver 2, Union Buildings are located 20 m west of the centre of the southern façade of the bar. With music played back at the level shown in Table 6.1, predicted noise emissions levels at nearest residential windows would be as shown in Table 6.3.

Levels have been calculated using the measured background music levels, the calculated sound reduction of the venue facade and the formula shown in Appendix B1.

Receiver	Operating Hours Criterion	Noise Level at Receiver (due to amplified music)
Receiver 1: Motel One	33 dB(A)	51 dB(A)
Receiver 2: Union Buildings, 11 - 17 Chapel Walks		47 dB(A)

Table 6.3: Noise levels and criteria at Residential Receiver

As shown in Table 6.3 and Appendix B, transmission of noise to the nearest sensitive windows due to the effects of the events and activities would exceed the set criteria, based on current proposals.

6.3 Noise Breakout Assessment – Commercial Receivers

An upper ground floor reception area and first floor office would adjoin the proposed bar.

In order to predict the transmission of noise to adjacent spaces, calculations have been undertaken using the following standard acoustic formula:

$$SPL_{receiver} = SPL_{source} - SRI_{separation} + 10\log_{10} S - 10\log_{10} A$$

Where:

- $SRI_{separation}$ is the sound reduction of the separating floor [see below],
- S is the area of the transmitting floor,
- and A is the absorption area of the receiving room.

On site sound reduction measurements of the existing separating elements were not possible during the site visit described. As such, assessments will be based upon proposed wall and floor constructions in Section 7 of this report.

7.0 PROPOSED MITIGATION

7.1 Noise Limiter – Music

The noise limits shown below in Table 7.1 are recommended for an inline limiter in order to ensure a low impact on nearby residential receivers. These limits should be met at 1 m inside of the bar door.

Noise Source	Low Frequency Limits		Overall Limit
	63Hz	125Hz	
Amplified Music	82 dB	86 dB	88 dB(A)

Table 7.1: Music noise emission limits

Note: It must be noted all stated noise limits are a prediction only, based on the expected performance of the external façade, and acoustic formulae. A final commissioning exercise should be undertaken to determine the appropriate limits in practice, which could be lower.

As amplified recorded music is more controllable in nature, an inline ‘compression’ type limiter can be considered. By placing such a device in the audio line, it can be ensured that amplified music is not able to breach the noise limit.

7.2 Proposed Window Upgrades

As the windows present the weakest point of the façade for noise egress, we would recommend targeting upgrade works to these elements to contain noise generated within the bar.

Sound reduction performance calculations have been undertaken in order to specify the minimum performance required from glazed elements in order to achieve the sound source having a low impact.

The minimum sound reduction index (SRI) value required for all replacement windows is shown in Table 7.2. **The performance is specified for the whole window unit, including the frame and other design features.**

Minimum Sound Reduction Index (dB) at Octave Band Centre Frequency (Hz)					
125	250	500	1k	2k	4k
35	46	46	46	56	65

Table 7.2: Required glazing performance

It is essential that prospective glazing system suppliers can demonstrate compliance with the acoustic performance detailed in our specification rather than simply offering a generic glazing configuration. The complete glazing system should achieve the performance requirements stated in Table 7.2 when tested in accordance with BS EN 10140-2: 2010.

It is essential that the performance presented in Table 7.2 is met. However, the following typical minimum configurations would be expected to meet the required levels of sound insulation.

- 10 mm Glass / 200 mm Gap / 6 mm Glass – R_w 49 dB

It should be noted that the installation of a secondary glazing system is expected to provide the required sound insulation uplift.

7.3 Door Upgrades

In order to further limit noise egress, a lobby door system is proposed with sealed doorsets with a performance of R_w 35 dB hung at the internal door set.

Examples of suitable doorsets include:

- Enfield 35dB Acoustic Door (R_w 35 dB)
- Sound Service D35 'Medium' Acoustic Door (R_w 35 dB)

Alternative solutions would be acceptable, provided it can be demonstrated with manufacturer data that the sound reduction offered is at least R_w 35 dB.

7.4 Proposed Floor Upgrade Works

Based on an onsite observation, the existing wood floor joists between the proposed bar area and proposed office space above are understood to be approximately 150mm thick, with a number of large holes.

Improvement works have therefore been proposed as follows:

- Seal floorboards above existing joists where possible
- Infill existing wood joists with mineral wool ^[1]
- 19mm high density plank plaster board to seal joist void
- 2 layers 15 mm SoundBloc plasterboard
- Separated joist forming 100 mm void infilled with mineral wool ^[1]
- Ceiling formed of 2 layers of 15 mm SoundBloc plasterboard.

[1] Mineral wool depth should be adjusted accordingly, such that mineral wool fills $\frac{1}{2}$ to $\frac{2}{3}$ of the void depth, with a minimum mass per unit area of 45 kg/m³

Indicative section drawing 17696-DWG1 illustrates the construction of the perimeter detail. The above construction is expected to achieve a performance of approximately R_w 83 dB.

7.5 Proposed Wall Upgrade Works

A wall separating the bar area and office reception area is proposed. A construction of the following is therefore proposed:

- 2 layers 15mm SoundBloc plasterboard
- 110 mm void formed of separated studs
- Infill studs with mineral wool ^[1]
- 2 layers 15mm SoundBloc plasterboard

Indicative section drawing 17696-DWG2 illustrates the construction of the perimeter detail. The above construction is expected to achieve a performance of approximately R_w 66 dB.

8.0 NOISE IMPACT ASSESSMENT

8.1 Operation Noise

The closest noise sensitive spaces have been identified as follows:

- Receiver 1 - a first floor window on the eastern facade of a hotel directly north of the site
- Receiver 2- A south facing window of a residential unit withing Union Buildings, 11 - 17 Chapel Walks
- Receiver 3 - The proposed first floor office directly above the site
- Receiver 4 – The entrance and reception to the office building directly west of the site.

Taking into account all necessary acoustic corrections and mitigation set out in Section 7, the resulting noise level at the identified noise sensitive spaces would be as shown in Table 8.1. Detailed calculations are shown in Appendix B.

Receiver	Operation Hours Criterion	Noise Level at Receiver (due to proposed operations)
Receiver 1 – Motel One [Noise Emission Level Outside Window]		33 dB(A)
	33 dB(A)	
Receiver 2 – Union Buildings, 11 - 17 Chapel Walks [Noise Emission Level Outside Window]		24 dB(A)
Receiver 3 – First Floor Office [Noise Emission Level Inside Space]	35 – 40 dB(A)	40 dB(A)
Receiver 4 – Office Entrance and Reception [Noise Emission Level Inside Space]	35 – 45 dB(A)	45 dB(A)

Table 8.1: Noise levels and project criterion at noise sensitive receivers

As presented in Table 8.1 and Appendix B, the proposed bar would be expected to meet the requirements of the proposed criteria during the proposed operating hours of 12:00 – 02:00 daily, with the installation of the mitigation measures set out in this report.

8.2 British Standard Requirements

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

British Standard 8233: 2014 '*Guidance on sound insulation and noise reduction for buildings*' gives recommendations for acceptable internal noise levels in residential properties. Assuming worst case conditions, of the closest window being for a bedroom, BS 8233: 2014 recommends 30 dB(A) as being acceptable internal sleeping conditions during night-time.

With loudest external levels of 34 dB(A), acceptable internal conditions would be met within the adjacent hotel by taking the attenuation of the window itself into consideration. According to BS 8233: 2014, a typical building facade with a partially open window offers 15 dB attenuation.

It can therefore be predicted that, in addition to meeting the requirements of the set criteria, the emissions from the site would be expected to meet the most stringent recommendations of the relevant British Standard, with neighbouring windows partially open. Predicted levels are shown in Table 8.2.

Receiver	Recommended Target – <i>For resting/sleeping conditions in a bedroom, in BS 8233: 2014</i>	Noise Level at Receiver (due to bar operations)
Inside Hotel Window	30 dB(A)	21 dB(A)
Inside Residential Window	30 dB(A)	9 dB(A)

Table 8.2: Noise levels and BS 8233: 2014 criteria inside nearest residential spaces

9.0 CONCLUSION

An environmental noise survey has been undertaken at Northspring, 19 Chapel Walks Manchester. The results of the survey have enabled criteria to be set for noise emissions from the proposed bar in accordance with the requirements of the Manchester City Council

A noise impact assessment has then been undertaken using previously measured noise data to predict the noise levels, due to the proposed bar, at the nearby noise sensitive receivers.

Calculations show that noise emissions from the proposed units should meet the requirements of the Manchester City Council with the recommended mitigation installed as stated herein and a noise management plan implemented.

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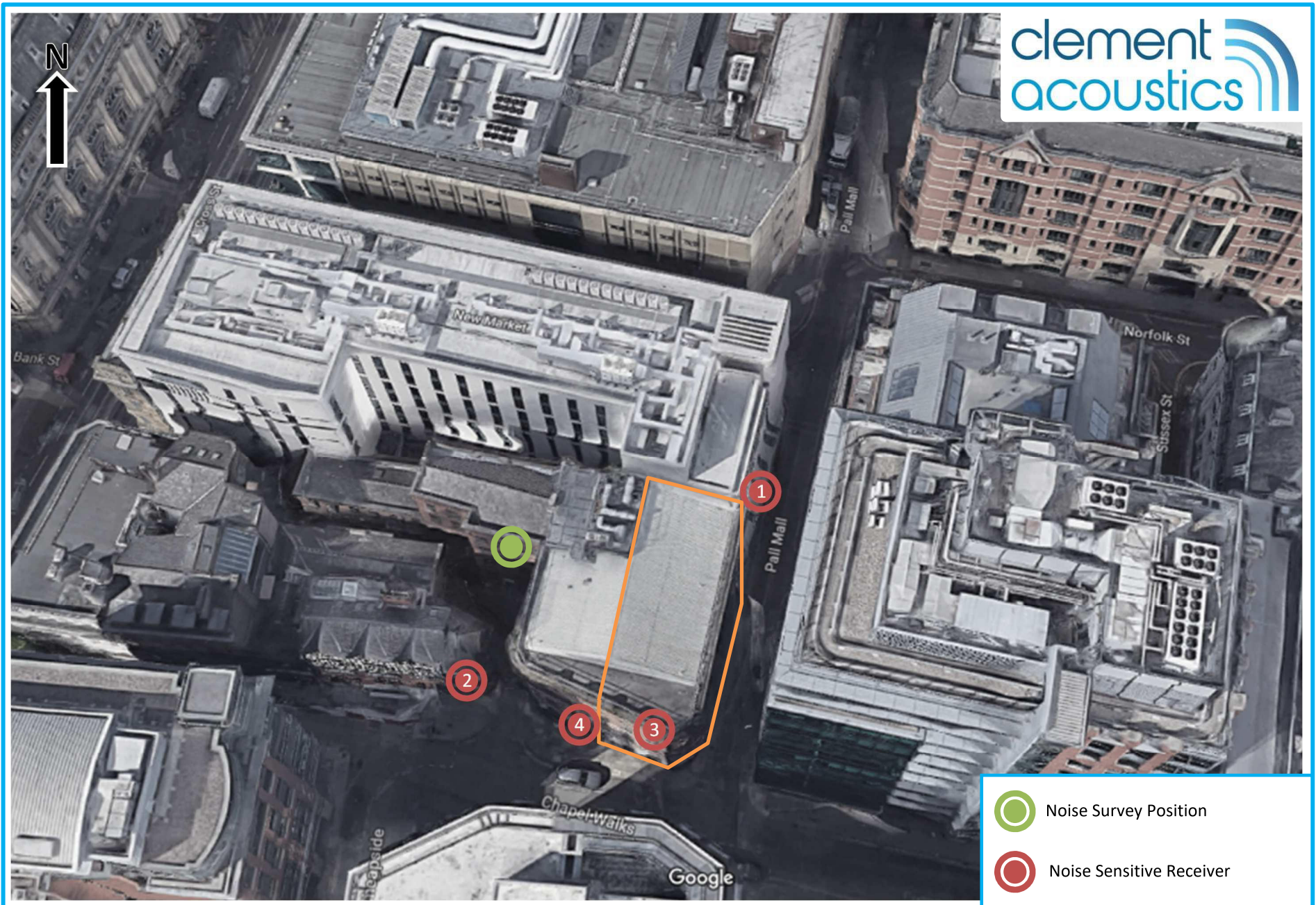


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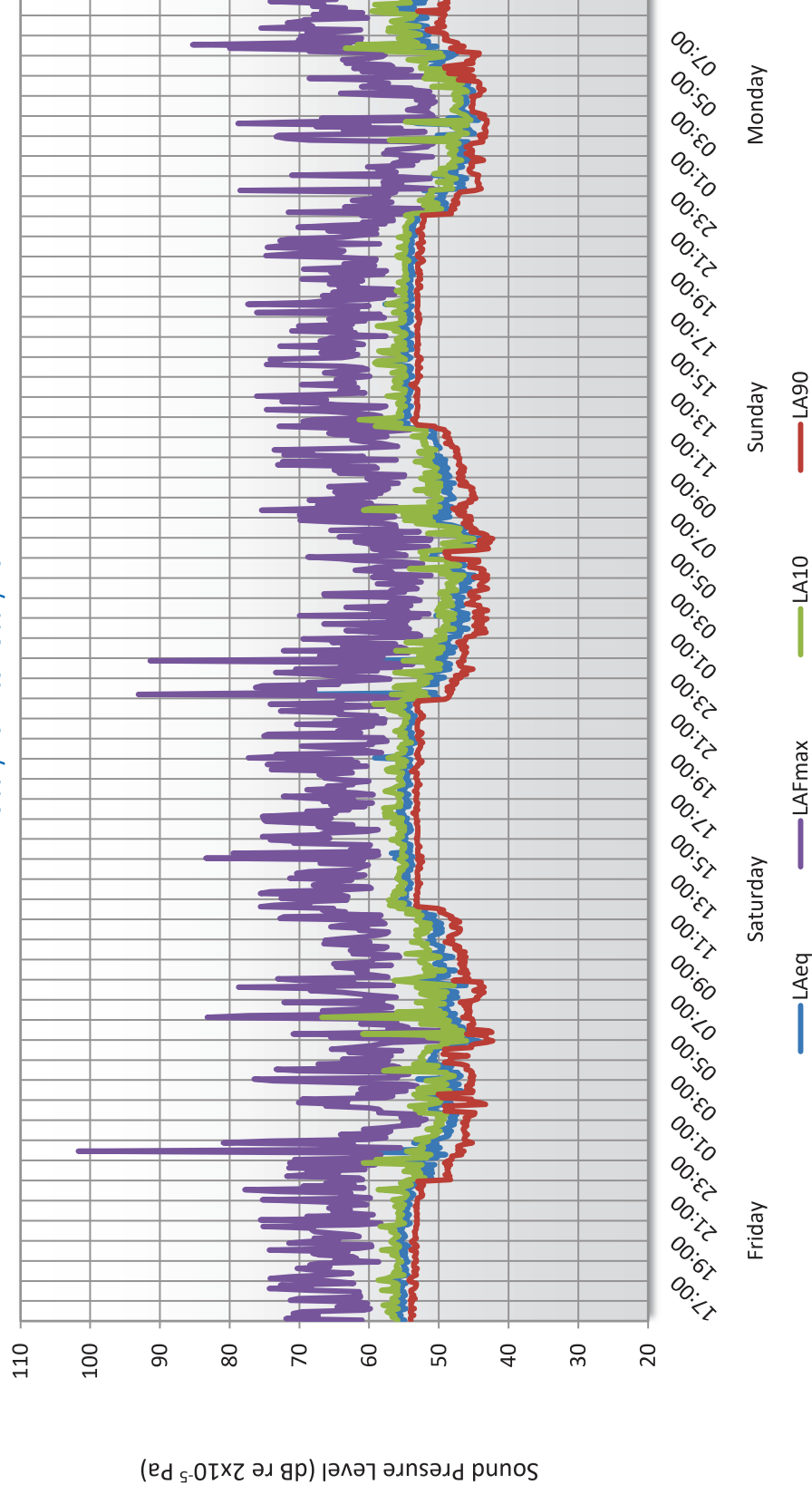
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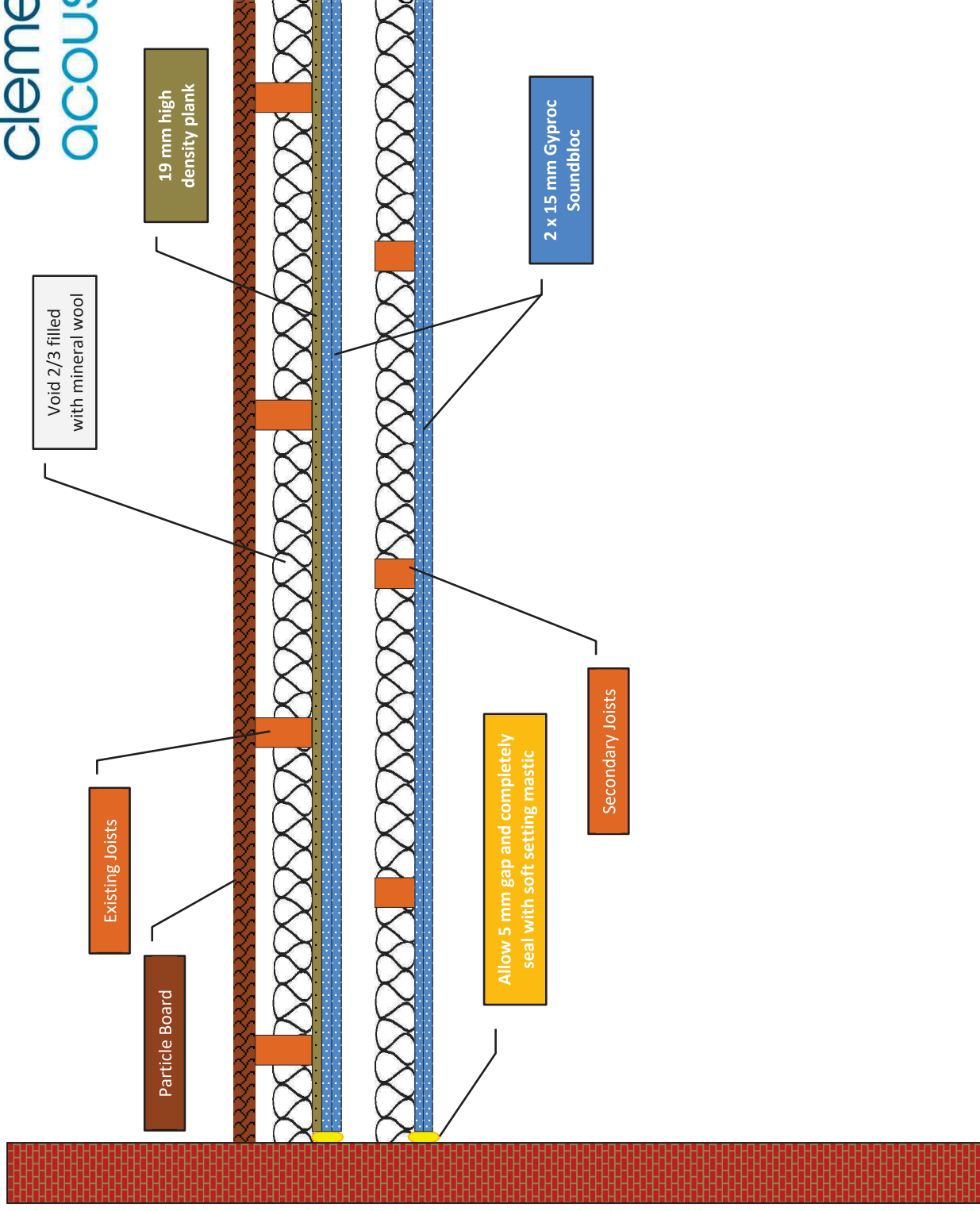
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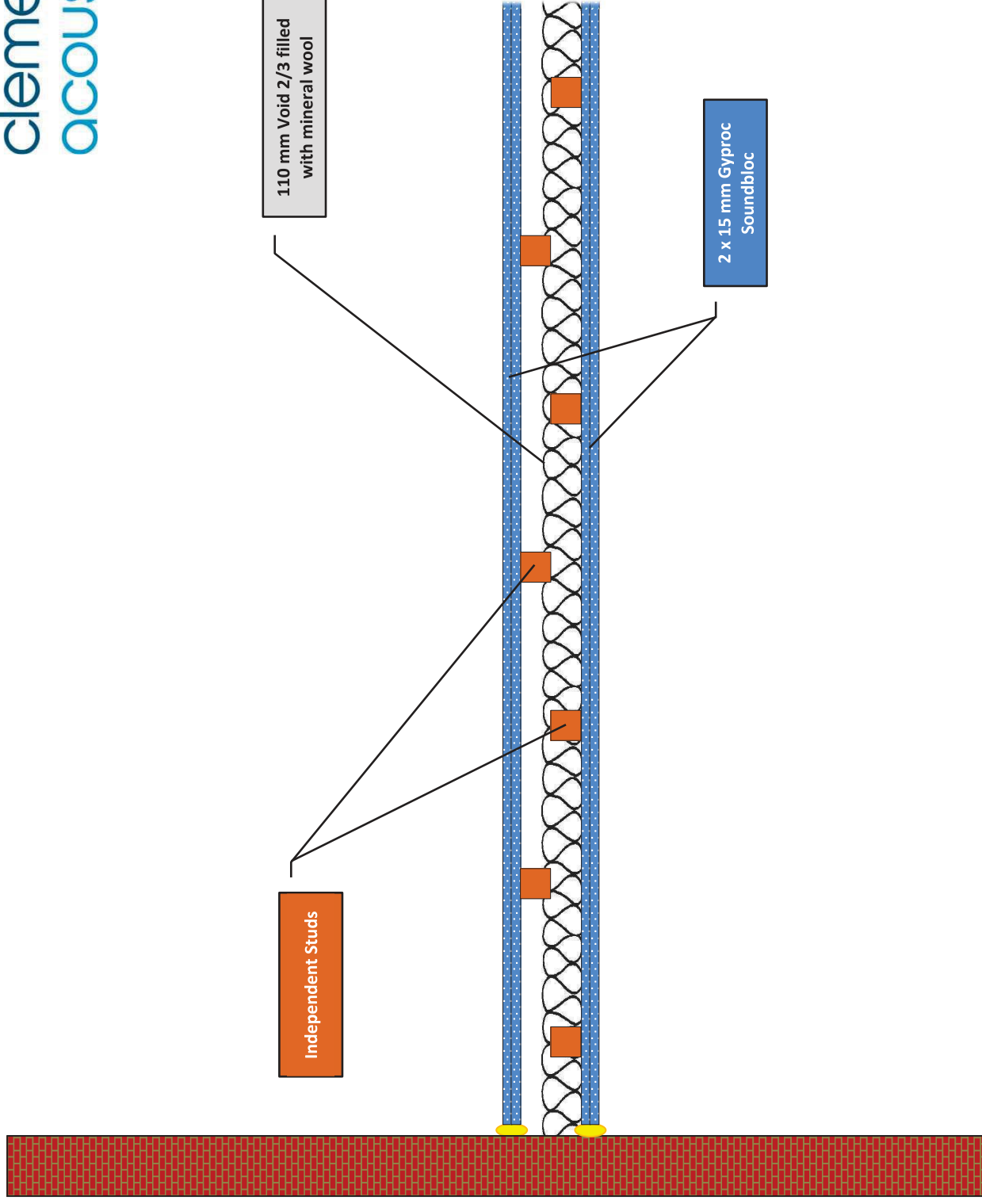
Position 1

Environmental Noise Time History

15 July 2022 to 18 July 2022







GLOSSARY OF ACOUSTIC TERMINOLOGY

dB(A)

The human ear is less sensitive to low (below 125Hz) and high (above 16kHz) frequency sounds. A sound level meter duplicates the ear's variable sensitivity to sound of different frequencies. This is achieved by building a filter into the instrument with a similar frequency response to that of the ear. This is called an A-weighting filter. Measurements of sound made with this filter are called A-weighted sound level measurements and the unit is dB(A).

L_{eq}

The sound from noise sources often fluctuates widely during a given period of time. An average value can be measured, the equivalent sound pressure level L_{eq} . The L_{eq} is the equivalent sound level which would deliver the same sound energy as the actual fluctuating sound measured in the same time period.

L_{10}

This is the level exceeded for not more than 10% of the time. This parameter is often used as a "not to exceed" criterion for noise

L_{90}

This is the level exceeded for not more than 90% of the time. This parameter is often used as a descriptor of "background noise" for environmental impact studies.

L_{max}

This is the maximum sound pressure level that has been measured over a period.

Octave Bands

In order to completely determine the composition of a sound it is necessary to determine the sound level at each frequency individually. Usually, values are stated in octave bands. The audible frequency region is divided into 10 such octave bands whose centre frequencies are defined in accordance with international standards.

Addition of noise from several sources

Noise from different sound sources combines to produce a sound level higher than that from any individual source. Two equally intense sound sources operating together produce a sound level which is 3dB higher than one alone and 10 sources produce a 10 dB higher sound level.

Attenuation by distance

Sound which propagates from a point source in free air attenuates by 6dB for each doubling of distance from the noise source. Sound energy from line sources (e.g. stream of cars) drops off by 3 dB for each doubling of distance.

Subjective impression of noise

Sound intensity is not perceived directly at the ear; rather it is transferred by the complex hearing mechanism to the brain where acoustic sensations can be interpreted as loudness. This makes hearing perception highly individualised. Sensitivity to noise also depends on frequency content, time of occurrence, duration of sound and psychological factors such as emotion and expectations. The following table is a reasonable guide to help explain increases or decreases in sound levels for many acoustic scenarios.

Change in sound level (dB)	Change in perceived loudness
1	Imperceptible
3	Just barely perceptible
6	Clearly noticeable
10	About twice as loud
20	About 4 times as loud

Barriers

Outdoor barriers can be used to reduce environmental noises, such as traffic noise. The effectiveness of barriers is dependent on factors such as its distance from the noise source and the receiver, its height and its construction.

Reverberation control

When sound falls on the surfaces of a room, part of its energy is absorbed and part is reflected back into the room. The amount of reflected sound defines the reverberation of a room, a characteristic that is critical for spaces of different uses as it can affect the quality of audio signals such as speech or music. Excess reverberation in a room can be controlled by the effective use of sound-absorbing treatment on the surfaces, such as fibrous ceiling boards, curtains and carpets.

Receiver 2: Union Buildings, 11 - 17 Chapel Walks	Frequency, Hz								
Source: Amplified Music Levels	63	125	250	500	1k	2k	4k	8k	dB(A)
Internal Sound Pressure Level									
Predicted Source Noise Level Within Ground Floor (Limited)	93	93	90	91	87	81	71	66	92
Predicted Sound Reduction of glazed facade, dB (SRI)	-26	-25	-29	-36	-41	-33	-38	-41	
Correction for total area of building facade (S = 20m ²)	13	13	13	13	13	13	13	13	
Correction for directivity (Q) and distance (r) (Q=4, r = 20m)	-18	-18	-18	-18	-18	-18	-18	-18	
Non reverberant correction	-6	-6	-6	-6	-6	-6	-6	-6	
Sound pressure level at receiver due to music play back	56	57	50	44	35	37	22	0	47
						Design Criterion			33

Receiver 2: Union Buildings	Frequency, Hz								
Source: Amplified Music Levels	63	125	250	500	1k	2k	4k	8k	dB(A)
Internal Sound Pressure Level									
Predicted Source Noise Level Within Ground Floor (Limited)	82	86	87	84	84	81	71	66	88
Predicted Sound Reduction of glazed facade, dB (SRI)	-40	-41	-52	-52	-52	-62	-71	-71	
Correction for total area of building facade (S = 20m ²)	13	13	13	13	13	13	13	13	
Correction for directivity (Q) and distance (r) (Q=4, r = 20m)	-18	-18	-18	-18	-18	-18	-18	-18	
Non reverberant correction	-6	-6	-6	-6	-6	-6	-6	-6	
Sound pressure level at receiver due to music play back	31	34	24	21	21	8	-11	-16	24
	Design Criterion								33

APPENDIX B3 - Mitigated Noise Breakout to First Floor Office

16969

Northspring, 19 Chapel Walks, Manchester

Acoustic Calculation used for Room to Room Transmission:

$$SPL_2 = SPL_1 - R + 10 \log_{10} S - 10 \log_{10} A$$

APPENDIX B3: First Floor Office

Source: Music Playback Levels

	Frequency, Hz								
	63	125	250	500	1k	2k	4k	8k	dB(A)
Internal Measured Sound Pressure Level									
Predicted Music Source Noise Level Within Ground Floor	82	86	87	85	85	81	71	66	89
Predicted Sound Reduction of separating floor, dB (R)	-19	-51	-68	-75	-75	-75	-75	-75	
Correction for total area of floor (S = 135m ²)	21	21	21	21	21	21	21	21	
Correction for absorption area of receiver room (A = 65m ²)	-18	-18	-18	-18	-18	-18	-18	-18	
Sound pressure level at receiver	66	38	22	13	13	9	-1	-6	40

Design Criterion

35-40

APPENDIX B4 - Mitigated Noise Breakout to Adjacent Reception

16969

Northspring, 19 Chapel Walks, Manchester

Acoustic Calculation used for Room to Room Transmission:

$$SPL_2 = SPL_1 - R + 10 \log_{10} S - 10 \log_{10} A$$

APPENDIX B4: Reception

Source: Music Playback Levels

	Frequency, Hz								
	63	125	250	500	1k	2k	4k	8k	dB(A)
Internal Measured Sound Pressure Level									
Predicted Music Source Noise Level Within Ground Floor	82	86	87	85	85	81	71	66	89
Predicted Sound Reduction of separating wall, dB (R)	-15	-36	-51	-65	-75	-67	-75	-75	
Correction for total area of wall (S = 45m ²)	17	17	17	17	17	17	17	17	
Correction for absorption area of receiver room (A = 21m ²)	-13	-13	-13	-13	-13	-13	-13	-13	
Sound pressure level at receiver	70	53	39	23	13	17	-1	-6	45

Design Criterion

35-45

Appendix C – Noise Management Plan

Introduction

Clement Acoustics has been commissioned by Chapel Walks GP Limited on behalf of Chapel Walks LP to produce a noise management plan to address noise emissions from amplified recorded music and patron noise at Upper Ground Floor Unit, Northspring, 19 Chapel Walks, Manchester.

The purpose of this document is to put in place best available techniques (BAT) to reduce noise emissions from the proposed use.

Site Description

The site is located at ground floor of the building previously known as Cavendish House, bound by Pall Mall to the east, Chapel Walks to the south, Blackpool Fold to the west and Hotel Motel One Manchester Royal to the north. The surrounding area is predominantly commercial in nature.

Proposals are for a craft beer bar in the ground floor unit of a proposed office building at the site.

Activities in the bar area would typically comprise the following:

- Amplified playback of recorded music
- General noise generated by patrons and guests within the bar.

Proposed Noise Management Plan

Mitigation Measures

- **The noise limits as stated in the Clement Acoustics document 17696-NIA-01 must be achieved for all amplified music. These limits should be met at minimum 1 m from any external façade of the site. Either a ‘cut-off’ or ‘compression’ limiter could be considered, All noise limiters must be calibrated and commissioned by a suitable acoustic professional**

Low Frequency Limits		Overall Limit
63Hz	125Hz	
82 dB	86 dB	88 dB(A)

Note [1]: The limits shown are predictions, based on the stated assumptions and calculations

- **It is understood that a lobby door system is proposed. It must be ensured that one door can remain closed at all times. The inside door set within the lobby must have a minimum sound reduction of R_w 35 dB.**
- **Behaviour of patrons should be monitored by regular patrols to ensure there is no unnecessary or excessive noise.**
 - The behaviour of patrons can be a significant factor in the levels of generated noise, particularly where the sale of alcohol is concerned. Regular patrols should be undertaken to identify and prevent any potential for unnecessary noise due to the behaviour of patrons.

Implementation

The noise management must be enforced at all times when any form of amplified music is playing. The measures should be reviewed and reassessed whenever material changes are applied, for example in terms of layout or size. The measures should also be reviewed on receipt of any complaints due to noise.