

Ambient Noise & Building Envelope Assessment

17 & 23 St John Street, Manchester

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This report has been prepared based upon a scope of works and associated resources agreed between the client and Philip Dunbavin Acoustics Ltd (PDA). This report has been prepared with all reasonable skill, care and diligence and has been based upon the interpretation of data collected. This has been accepted in good faith as being accurate and valid at the time of the collection. This report has been based solely on the specific design assumptions and criteria stated herein.



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1.0 SUMMARY

PDA Ltd have been commissioned by Zerum Ltd to carry out an ambient noise and building envelope assessment for the proposed residential development at 17 and 23 St John Street in Central Manchester. The proposed development comprises 2 no. four storey terrace properties situated off St John Street to the north and Camp Street at the south of the property in Manchester, M3 4DS. The plots were formerly used as offices. The proposal is to convert the existing buildings to form town house style residential dwellings

A noise level survey was undertaken in the vicinity of the site to determine the existing noise climate. The noise climate is dominated by local and distant road traffic noise. St John Street and Camp Street are reasonably busy throughout day and night time with general road traffic including cars, vans and taxis as well as occasional sirens due to passing emergency vehicles on the surrounding road network. Intermittent contributions were audible from night-time pedestrian noise.

Recommendations are given in this report for the glazing, ventilation and building façade elements that will be required to achieve the internal noise level requirements. Our calculations suggest that the criteria of BS8233:2014 and WHO Guidelines can be achieved within the dwellings. Therefore, in-line with the National Planning Policy Framework on the grounds of noise we would deem this site suitable for residential development.

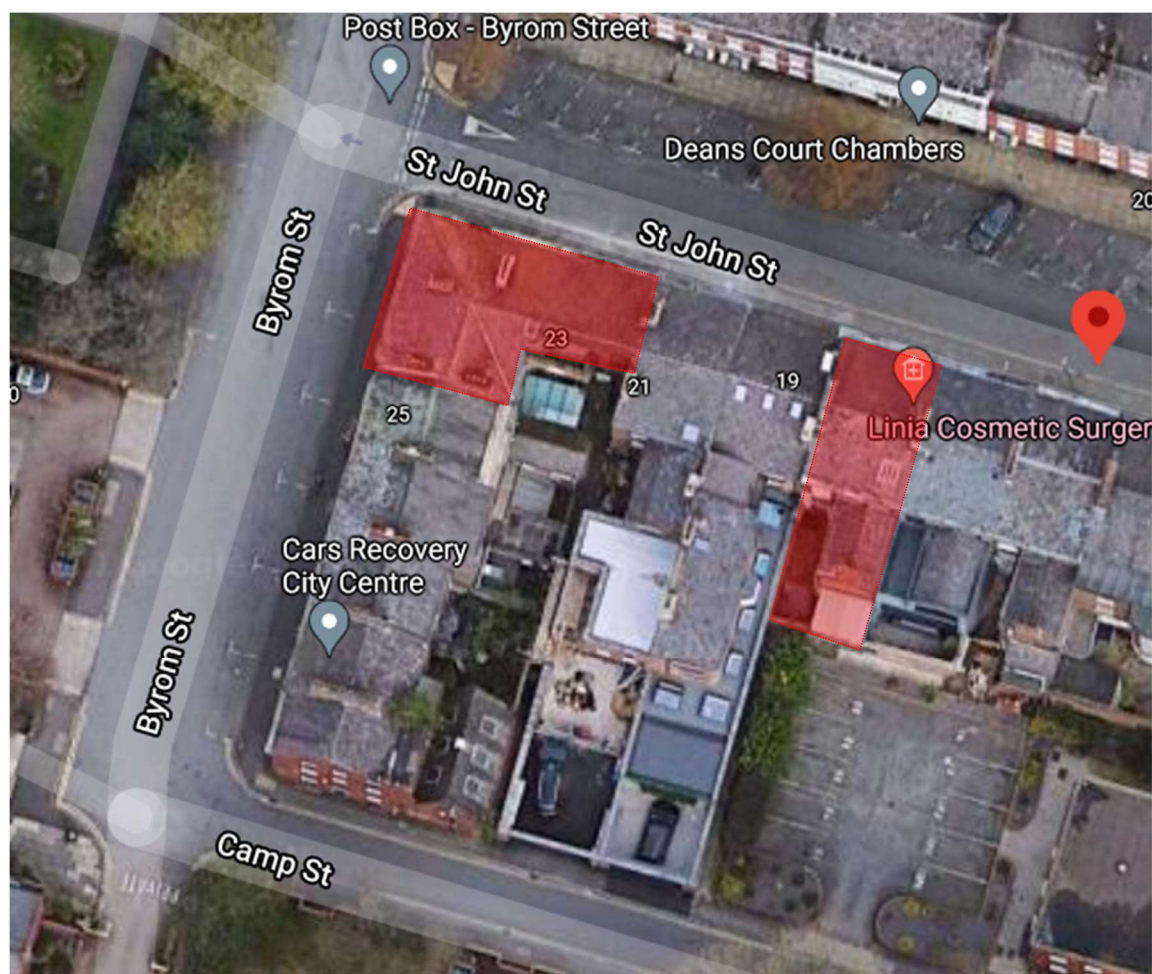
2.0 SITE DESCRIPTION

The proposed development comprises 2 no. four storey terrace properties situated off St John Street to the north and Camp Street at the south of the property in Manchester, M3 4DS. The plots were formerly used as offices.

The surrounding local area is mixed use comprising of residential and commercial with St John Street mainly comprising of businesses from the medical and law professions. Camp Street which runs at the back of the property is made up of a mixture of offices and residential. Deansgate (A56) runs approximately 110m to the east of the property and Quay Street (A34) runs approximately 100m to the north of the site with which both can be considered 'busy' main roads. The proposal is to convert the existing buildings to form town house style residential dwellings

A site plan showing the proposed site is shown in Figure 1 below.

Figure 1: Site plan showing proposed site (in red) and surrounding area



3.0 ASSESSMENT CRITERIA

3.1 National Planning Policy Framework

National Planning Policy is guided by the National Planning Policy Framework (NPPF) updated in June 2019. With regard to Noise the Framework states the following;

Planning policies and decisions should contribute to and enhance the natural and local environment by:

- *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.*

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- *mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- *identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.*

The terms 'significant adverse impact' and 'adverse impact' are defined in the explanatory notes of the 'Noise Policy Statement for England (NPSE)' which states;

There are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation. They are:

NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

Extending these concepts for the purpose of this NPSE leads to the concept of a significant observed adverse effect level.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur.

The notes also offer an explanation of the term 'other adverse impacts' as follows;

... refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development (paragraph 1.8). This does not mean that such adverse effects cannot occur.

Although no specific noise limits for LOAEL and SOAEL have been defined, in 2014 the UK Government published a planning practice guidance document for noise which indicates where these limits fall with relation to the perception of noise. A summary is reproduced in Section 3.2 below; the full document is published at <https://www.gov.uk/guidance/noise--2>.

3.1.1 Planning Practice Guidance – Noise

The UK Planning Practice Guidance on noise offers further guidance on the typical levels which constitute the NOEL, LOAEL and SOAEL and is reproduced in the table below;

Table 1: Planning Practice Noise Level Guidance

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not present	No Effect	No Observed Effect	No specific measures required
Present and not intrusive	Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
		Lowest Observed Adverse Effect Level	
Present and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
		Significant Observed Adverse Effect Level	
Present and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

3.2 BS8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings

British Standard 8233:2014, *Guidance on Sound Insulation and noise reduction for buildings*, gives guidance on internal noise levels within dwellings, flats and rooms in residential use when unoccupied. The following criteria are for Living and Dining Rooms for daytime use and Bedrooms for night time.

Table 2: BS8233 Recommended Indoor Ambient Noise Levels

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 $L_{Aeq,16hour}$	—
Dining	Dining room/area	40 $L_{Aeq,16hour}$	—
Sleeping (daytime resting)	Bedrooms	35 $L_{Aeq,16hour}$	30 $L_{Aeq,8hour}$

It should however be stressed that the above criterion relates to steady noise, in this case from road traffic etc., excluding unusual noise events departing from the typical noise character of the area.

In addition, BS 8233 suggests, ‘*regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$, depending on the character and number of events per night. Sporadic noise events could require separate values*’.

With regard to gardens and external areas, BS 8233:2014 (Section 7.7.3.2) gives the following advice:

For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50dB $L_{Aeq,T}$, with an upper guideline value of 55dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited.

3.3 WHO Guidelines for Community Noise

In 1999, the WHO (World Health Organisation) published Guidelines for Community Noise, stating the following noise levels are applicable to residential dwellings.

Table 3: WHO Guidelines for Community Noise Criteria

Specific Environment	Critical Health Effect(s)	L_{Aeq} dB	Time Base (hours) *	L_{AFMAX} dB
Dwelling, indoors	Speech intelligibility & moderate annoyance, daytime & evening	35	16	-
Inside bedrooms	Sleep disturbance, night-time	30	8	45

* Typically taken to be daytime/evening - 07:00 – 23:00 hours and night time 23:00 – 07:00 hours.

The WHO guidelines state that, “*it is recommended that $L_{Aeq,T}$ be used to evaluate more-or-less continuous environmental noises. Where the noise is principally composed of a small number of discrete events, the additional use of L_{Amax} or SEL is recommended.*” The guidelines recommend that for a good sleep, the indoor sound pressure levels should not exceed approximately 45dB L_{Amax} more than 10 – 15 times.

4.0 SURVEY DETAILS & RESULTS

A long term noise level survey was undertaken in the vicinity of the site to determine the existing noise climate. Measurements were taken from a single position over a period of approximately 79 hours between 16:15 hours on Wednesday 14th and 23:00 hours on Saturday 18th July 2021. Measurements were taken at 2nd floor level on the northern façade overlooking St John Street. It was ensured that there was a clear line of sight between the measurement position and the surrounding noise sources. All measurements were made and partially attended by Mr Jack Perry of PDA Ltd.

The survey was conducted using an NTI XL2 sound level meter. In accordance with IEC 61672-1:2002 the NTi XL2 has a class 1 frequency response and can operate as an integrating sound level meter with frequency analysis and statistical functions. The meter was set to measure 'A' weighted, broadband and octave band sound pressure levels and various statistical parameters. The meter were field calibrated to 1kHz at 94dB both before and after the measurement during which time no significant deviation was observed. In addition, a valid calibration certificate is held for both the meters and the calibrator.

A summary of the weather conditions during the survey period is given in Table 4 below:

Table 4: Weather Conditions

Measurement Date	Temperature	Windspeed	Events
Wednesday 14 th July 2021	12 - 20°C	1 - 2 m/s	Dry
Thursday 15 th July 2021	13 - 22°C	1 - 6 m/s	Dry
Friday 16 th July 2021	12 - 24°C	1 - 5 m/s	Dry
Saturday 17 th July 2021	13 - 28°C	1 - 5 m/s	Dry

4.1 Description of Noise Sources

The noise climate is dominated by local and distant road traffic noise. St John Street and Camp Street are reasonably busy throughout day and night time with general road traffic including cars, vans and taxis as well as occasional sirens due to passing emergency vehicles on the surrounding road network. Intermittent contributions were audible from night-time pedestrian noise.

4.2 Measured Noise Results

Full details of the measured results can be seen in the appendix included at the end of this report. A summary of the results is given in Table 5 below. Note that due to the proximity of the microphone to the façade of the building a -3 dB correction has been applied to account for reflections as such, the noise levels in Table 5 overleaf are representative of the equivalent free-field noise level:

Table 5: Summary of noise measurements

Measurement Date	Period	Average dB L _{Aeq,T}	Night-time L _{AFMax} *
Wednesday 14th July 2021	Day	52	n/a
	Night	48	65
Thursday 15th July 2021	Day	57	n/a
	Night	48	67
Friday 16th July 2021	Day	59	n/a
	Night	52	72
Saturday 17th July 2021	Day	53	n/a
	Night	n/a	n/a

Notes:

- * The WHO Guidelines for Community Noise state that sleep disturbance may occur where the specified 45dB L_{Amax} is exceeded internally 10 to 15 times over the 8-hour night-time period. The L_{Amax} recorded for these positions is the L_{Amax} exceeded no more than 10 times over the full night-time-period or equivalent.

4.2.1 2016 Measurements (Camp Street)

PDA have previously undertaken measurements in 2016 at no. 19 St John Street, located immediately to the west of the proposed development site.

Long term measurements were conducted between 12:27 hours on Friday 28th October 2016 and 11:20 hours on Monday 31st October 2016 encompassing a full weekend period. A summary of the 2016 measurements can be seen in Table 6 overleaf:

Table 6: Summary of 2016 Measurements

Measurement Date	Period	Average dB L _{Aeq,T}	Night-time L _{AFMax} *
Friday 28 th October 2016	Day	54	n/a
	Night	53	76
Saturday 29 th October 2016	Day	54	n/a
	Night	53	75
Sunday 30 th October 2016	Day	50	n/a
	Night	47	65
Monday 31 st October 2016	Day	56	n/a

Notes:

- * The WHO Guidelines for Community Noise state that sleep disturbance may occur where the specified 45dB L_{Amax} is exceeded internally 10 to 15 times over the 8-hour night-time period. The L_{Amax} recorded for these positions is the L_{Amax} exceeded no more than 10 times over the full night-time-period or equivalent.

4.3 Discussion of Results

To ensure that our assessment is conservative our assessment of noise ingress is based on the worst-case measured noise levels in Tables 5 and 6 above. In addition, a distance attenuation correction has been applied to the measured noise levels to account for the increased noise level at the façade on the ground and first floor.

5.0 NOISE INGRESS CALCULATIONS AND MITIGATION

In PDA's experience developments with the measured noise levels above are suitable for residential development provided that adequate acoustic attenuation is provided to habitable areas.

Considering the acoustic weak points of a building façade, typically the glazing and the ventilation elements, calculations have been undertaken to determine specifications for these building elements and the internal noise levels. These levels are compared with the criteria detailed in section 3 above.

5.1 Calculations

Based upon the measured and predicted noise levels, calculations have been undertaken to determine acoustic specification requirements for the proposed residential dwelling. Calculations have been undertaken in octave bands from 63 Hz to 8kHz inclusive, for the night-time L_{eq} , day-time L_{eq} and night-time L_{max} levels. The calculated internal noise levels are dependent on the size of room, location and relative glazing area. Room and glazing dimensions are taken from the drawings provided to us by the client for the development next door (19 St John Street), for the purposes of this assessment it is assumed that the layout will be approximately the same.

The sound insulation provided by the building envelope is a combination of the sound reduction indices of the individual façade elements and the area of the façade they cover. The result is a composite sound insulation value for the whole façade.

The calculation of noise break-in to the residential rooms has been undertaken in accordance with the calculation methods of BS EN 12354-3:2000 *Building Acoustics – Estimation of acoustic performance of buildings from the performance of elements. Part 3: Airborne sound insulation against outdoor sound*, in octave bands. Reverberation time is 0.5 seconds as per the BS EN 12354-3 reference time for dwellings.

Information on the sound insulation properties for specific element details has either been sourced from manufacturer's literature or from Insul® Sound insulation prediction software.

5.2 Design Assumptions

5.2.1 Walls

The exact wall construction has not been confirmed however for the purposes of this assessment, it is assumed that the build-up has an acoustic performance of at least 53 dB R_w .

Please note that the external façade should have no unsealed penetrations, and any openings for ventilation should meet the specifications for ventilators as discussed below.

5.2.2 Ventilation

Our calculations suggest that suitable internal noise levels can be achieved using acoustically attenuated trickle vents. However, it is noted that the sound insulation of the façade relies on the windows remaining closed with ventilation being provided by the trickle vents. During times when windows are open internal noise levels will likely exceed the criteria of Section 3.

With regard to purge ventilation BS 8223:2014 states:

"The Building Regulations' supporting documents on ventilation recommend that habitable rooms in dwellings have background ventilation. Where openable windows cannot be relied upon for this ventilation, trickle ventilators can be used and sound attenuating types are available. However, windows may remain openable for rapid or purge ventilation, or at the occupant's choice.

5.2.3 Room Dimensions

Room and glazing dimensions are taken from the drawings provided to us by the client for the development next door (19 St John Street), for the purposes of this assessment it is assumed that the layout will be approximately the same.

5.3 Glazing and Ventilation Specification

Our calculations have indicated that in order to achieve the internal noise levels given in section 3.0 the development will require the following glazing and ventilation specifications.

Table 7: Glazing and Ventilation Schedule

Room Type	Minimum Glazing Rating R_w dB	Minimum combined Ventilator Rating $D_{n,e,w}$ dB	Internal Noise Level Target dBA (Day/Night/Max)	Calculated Highest Internal Noise Level dBA (Day/Night/Max)
Bedrooms St John Street	33	33	35/30/45	32/27/45
Living Rooms St John Street	29	29 ¹	35/-/-	35/-/-
Bedrooms Rear	38	38	35/30/45	24/24/44
Living Rooms Rear	29	29 ¹	35/-/-	31/-/-

Notes:

* A standard non-acoustic trickle vent will likely achieve 29 dB $D_{n,e,w}$

It can be seen from the results in Table 7 above that the internal noise criterion can be achieved within the dwellings. Please note that calculations are based on the worst-case predicted noise levels therefore, in other areas of the development internal noise levels are likely to be lower.

5.4 Glazing Specification and Installation

For the glazing specification in Table 8, all sound insulation values quoted above must be achieved by the overall combination of frame and glazing, and not just by the glazing alone. The frame should not reduce the performance of the system overall.

Glazing framing systems must be fully sealed with any small gaps (<10mm nominal) around the perimeter to be stuffed with dense mineral wool to full frame depth and sealed both sides with acoustic non-setting mastic, with additional weathering protection to be applied additionally externally to this. No gaps should be left unsealed.

Note that the specifications are interchangeable provided the minimum sound insulation values are achieved in all octave bands, for example; 10/12/6mm could be used in place of the 6/12/6mm if desired.

Minimum performance requirements for the combination of glazing and framing recommended in the above tables are as follows:

Table 8: Required Minimum Sound Insulation of Combined Glazing and Framing

Typical Product	Minimum Sound Reduction Index R (dB) at Octave Band Centre Frequency (Hz)							R_w
	63	125	250	500	1000	2000	4000	
Existing Sash Glazing (assumed to be 4mm)	15	17	21	26	30	33	30	29
6/12/6mm	18	20	19	29	38	36	45	33
10/12/6mm	22	26	27	34	40	38	46	38

Figures stated in the table above are based on Pilkington manufacturer quoted data. Acoustic ratings should be checked with the manufacturer and supported by laboratory test reports where necessary.

5.4.1 Retaining Existing Glazing

If the existing sash windows are to be retained then the following glazing specification would be acceptable for all rooms:

Table 9: Required Minimum Sound Insulation Secondary Glazing

Typical Product	Minimum Sound Reduction Index R (dB) at Octave Band Centre Frequency (Hz)							R_w
	63	125	250	500	1000	2000	4000	
Existing 4mm glass, 100mm cavity, 6mm secondary glass	20	26	34	44	56	53	52	44

5.5 Ventilator Requirements

The ventilator inlets described in the following table are calculated to provide adequate sound insulation to maintain internal noise levels compliant with the guidance criteria when used in conjunction with the selected glazing. Selected ventilation inlets should provide equal or greater sound insulation performance across the frequency range to the values in Table 10; example products are noted below.

The acoustic specification relates to the combined performance of all ventilation elements. Where two or more ventilators are required to meet the ventilation requirement, the acoustic performance for a single ventilator must be selected so that the combined performance is as stated in the table below, e.g. for 2 no. ventilators, the acoustic performance of each will need to be $D_{n,e,w}$ 41 dB to meet a combined $D_{n,e,w}$ 38 dB specification. Requirements should be checked with the manufacturer.

Table 10: Required Minimum Sound insulation of Ventilators

Example Product	Minimum Normalised Element Level Difference $D_{n,e}$ (dB) at Octave Band Centre Frequency (Hz)						$D_{n,e,w}$
	125	250	500	1000	2000	4000	
Simon Acoustic EMM	40	36	35	31	33	36	33
Simon Acoustic EHAS	40	36	34	35	44	40	38

Ventilation strategy needs to be checked with Local Authority and other standards and regulations for compliance. It should be noted that inclusion of ventilators alone does not ensure compliance with Building Regulations or other regulatory requirements for ventilation. The ventilation strategy should be checked by others.



6.0 CONCLUSION

PDA Ltd have been commissioned by Zerum Ltd to carry out an ambient noise and building envelope assessment for the proposed residential development at 17 and 23 St John Street in Central Manchester. The proposed development comprises 2 no. four storey terrace properties situated off St John Street to the north and Camp Street at the south of the property in Manchester, M3 4DS. The plots were formerly used as offices. The proposal is to convert the existing buildings to form town house style residential dwellings

Recommendations are given in this report for the glazing, ventilation and building façade elements that will be required to achieve the internal noise level requirements. Our calculations suggest that the criteria of BS8233:2014 and WHO Guidelines can be achieved within the dwellings. Therefore, in-line with the National Planning Policy Framework on the grounds of noise we would deem this site suitable for residential development.

APPENDIX A – DEFINITION OF ACOUSTIC TERMS

The decibel

This is the basic unit of noise, denoted dB.

A Weighting

This is a weighting process which simulates the human ear's different sensitivity at different frequencies. A weighting can be shown two typical ways, 50 dB(A) L_{eq} or 50 dB L_{Aeq} . Both mean the same thing. (See below for a definition of L_{eq}). The dB(A) level can be regarded as the overall level perceived by human beings.

L_{eq} and $L_{eq(s)}$

This is the equivalent continuous noise level which contains the same acoustic energy as the actual time-varying sound. In other words it is a kind of average noise level. It is denoted dB L_{eq} or, for A-weighted figures dB(A) L_{eq} or dB L_{Aeq} . It can also be expressed in terms of frequency analysis (see later). $L_{eq(s)}$ is the sample L_{eq} level.

L_n

This is the level exceeded for n% of the time. It is denoted dB L_n or, for A-weighted figures dB(A) L_n or dB L_{An} . It can be expressed in terms of frequency analysis (see later). L_{90} is the level exceeded for 90% of the time and is a measure of the lowest level typically reached. L_{10} is the level exceeded for 10% of the time and is the highest level typically reached. L_{50} is the level exceeded for 50% of the time and, mathematically, it is the median.

L_{max}

This is the maximum level reached during a measurement period. The "time constant", or the ability of the equipment to respond to impulses is usually expressed along with it, e.g. "Fast", "Slow", etc. It is denoted dB L_{max} or, for A-weighted figures dB(A) L_{max} , dB L_{Amax} , etc. It can also be expressed in terms of frequency analysis.

Frequency Analysis

Whereas dB(A) gives a very useful overall figure, it has its limitations in that it cannot be used to model or predict the effect of noise control and mitigation as this nearly always has radically different performance at different frequencies.

Frequency analysis expresses an overall noise level at each frequency or band of frequencies in the audible range. Octave band analysis divides the audible range into 10 bands from 31.5 Hz to 16 kHz and the noise level in each band can be expressed in any form e.g. L_{eq} , L_{90} , L_{max} etc. One third octave band analysis uses 30 bands.

Narrow band analysis takes the process to resolutions of less than 1 Hz. This is useful for identifying the existence of tones (whines, hums, etc.) and in pin-pointing the sources.



APPENDIX B – MEASURED NOISE LEVELS

Our Ref: J03442
Client: Zerum Consult Ltd
Project: 17 & 23 St John Street
Results: Ambient Noise Measurements

		Octave Band Centre Frequencies (Hz), dB L _{eq}										
Date	Time	dB, L _{Aeq}	dB, L _{Amax}	dB, L _{A90}	63	125	250	500	1k	2k	4k	8k
14/07/2021	16:15:00	54	68	48	63	57	54	50	51	45	37	35
14/07/2021	16:30:00	54	70	47	62	56	54	50	51	44	37	32
14/07/2021	16:45:00	56	75	49	65	61	55	51	53	46	41	31
14/07/2021	17:00:00	57	75	48	64	61	57	53	53	49	42	34
14/07/2021	17:15:00	54	71	48	65	60	55	50	51	43	35	27
14/07/2021	17:30:00	56	71	51	66	60	57	53	53	46	37	28
14/07/2021	17:45:00	55	76	51	65	56	55	51	51	46	39	27
14/07/2021	18:00:00	56	72	51	68	60	58	53	52	47	39	33
14/07/2021	18:15:00	55	73	48	65	57	55	51	51	45	39	28
14/07/2021	18:30:00	55	72	49	62	58	55	51	53	45	36	28
14/07/2021	18:45:00	53	68	47	63	57	53	49	50	44	36	27
14/07/2021	19:00:00	54	68	48	63	57	54	50	51	44	36	27
14/07/2021	19:15:00	54	68	48	62	55	53	50	51	44	35	26
14/07/2021	19:30:00	54	71	47	61	57	54	50	51	44	36	28
14/07/2021	19:45:00	55	74	47	64	61	56	52	51	45	37	28
14/07/2021	20:00:00	54	71	47	65	56	54	50	51	45	37	29
14/07/2021	20:15:00	53	67	47	61	56	53	50	50	43	36	25
14/07/2021	20:30:00	52	67	45	60	54	52	48	49	43	37	28
14/07/2021	20:45:00	58	86	47	63	63	61	54	55	47	37	31
14/07/2021	21:00:00	52	65	45	61	56	52	48	48	41	33	24
14/07/2021	21:15:00	51	69	45	58	55	52	48	48	41	32	23
14/07/2021	21:30:00	53	69	45	62	55	53	49	50	43	35	27
14/07/2021	21:45:00	51	66	44	59	53	52	47	49	41	31	20
14/07/2021	22:00:00	52	70	44	62	57	52	47	49	41	32	22
14/07/2021	22:15:00	59	76	45	62	60	55	49	50	56	49	25
14/07/2021	22:30:00	51	65	45	63	56	52	47	48	40	32	30
14/07/2021	22:45:00	51	69	44	58	53	51	46	48	40	31	19
14/07/2021	23:00:00	51	66	44	60	54	51	46	48	40	32	23
14/07/2021	23:15:00	59	78	43	63	60	61	57	54	48	47	45
14/07/2021	23:30:00	49	61	43	59	51	49	44	47	39	30	20
14/07/2021	23:45:00	52	72	42	61	55	54	48	48	41	33	23
15/07/2021	00:00:00	51	71	42	59	53	51	47	48	40	31	19
15/07/2021	00:15:00	49	62	42	57	50	48	44	46	39	33	24
15/07/2021	00:30:00	51	76	41	57	52	52	46	48	40	32	22
15/07/2021	00:45:00	48	63	41	55	50	48	43	45	37	28	15
15/07/2021	01:00:00	46	59	40	54	49	47	41	44	35	28	15
15/07/2021	01:15:00	48	63	41	55	50	48	43	45	37	28	15
15/07/2021	01:30:00	48	63	40	54	50	47	42	45	37	29	19
15/07/2021	01:45:00	46	62	39	53	49	46	41	43	34	27	15
15/07/2021	02:00:00	44	58	39	52	48	45	39	41	34	28	15
15/07/2021	02:15:00	49	66	39	60	52	50	45	46	40	34	25
15/07/2021	02:30:00	50	68	39	56	52	52	46	45	40	34	29
15/07/2021	02:45:00	50	76	38	54	49	57	43	44	36	28	19
15/07/2021	03:00:00	46	67	39	54	49	46	42	43	35	29	19
15/07/2021	03:15:00	46	65	39	55	51	47	43	43	36	28	17
15/07/2021	03:30:00	42	59	38	50	47	43	38	39	32	27	17
15/07/2021	03:45:00	44	62	38	54	48	45	39	40	37	31	24
15/07/2021	04:00:00	49	66	39	55	47	44	39	42	45	37	30
15/07/2021	04:15:00	49	68	39	59	54	51	44	45	42	33	26
15/07/2021	04:30:00	45	60	39	52	49	44	40	40	39	34	24
15/07/2021	04:45:00	46	60	41	51	47	44	39	41	35	39	33
15/07/2021	05:00:00	46	61	41	54	49	46	43	43	36	35	28
15/07/2021	05:15:00	45	58	41	53	49	46	41	42	35	32	25
15/07/2021	05:30:00	49	64	42	56	51	49	44	46	38	33	23
15/07/2021	05:45:00	53	72	42	60	55	54	50	51	43	34	23
15/07/2021	06:00:00	53	69	43	58	54	51	48	50	43	34	24
15/07/2021	06:15:00	51	67	43	58	54	51	46	48	40	33	23
15/07/2021	06:30:00	54	76	45	61	59	54	49	51	43	36	27
15/07/2021	06:45:00	54	70	46	64	56	53	49	51	46	39	31
15/07/2021	07:00:00	54	76	45	61	55	53	49	51	44	40	32
15/07/2021	07:15:00	55	71	46	63	63	56	50	52	45	37	27
15/07/2021	07:30:00	55	72	47	63	60	57	50	52	47	36	27
15/07/2021	07:45:00	55	70	47	64	57	55	52	52	46	38	29
15/07/2021	08:00:00	56	74	48	64	60	57	53	52	47	43	37
15/07/2021	08:15:00	57	80	47	62	60	59	54	53	47	38	31
15/07/2021	08:30:00	56	73	49	64	62	58	52	53	45	37	28
15/07/2021	08:45:00	74	97	51	76	72	73	70	71	63	57	49
15/07/2021	09:00:00	69	81	51	72	69	69	66	66	58	52	43
15/07/2021	09:15:00	58	88	51	68	63	56	53	52	47	52	33
15/07/2021	09:30:00	55	72	50	63	58	55	52	52	46	38	40
15/07/2021	09:45:00	59	91	49	64	58	55	53	56	53	46	39
15/07/2021	10:00:00	56	75	47	65	57	55	51	51	48	42	38
15/07/2021	10:15:00	55	72	48	62	56	55	51	51	46	41	30

Our Ref: J03442
Client: Zerum Consult Ltd
Project: 17 & 23 St John Street
Results: Ambient Noise Measurements

		Octave Band Centre Frequencies (Hz), dB L _{eq}										
Date	Time	dB, L _{Aeq}	dB, L _{Amax}	dB, L _{A90}	63	125	250	500	1k	2k	4k	8k
15/07/2021	10:30:00	57	70	54	63	58	56	53	53	50	45	32
15/07/2021	10:45:00	58	71	55	68	60	58	54	54	51	45	35
15/07/2021	11:00:00	58	73	56	66	62	58	54	54	51	45	34
15/07/2021	11:15:00	63	78	59	67	63	60	58	59	56	50	41
15/07/2021	11:30:00	64	87	61	68	63	62	60	59	56	51	47
15/07/2021	11:45:00	66	80	62	70	66	66	64	61	57	50	42
15/07/2021	12:00:00	64	90	53	73	65	62	60	60	56	51	47
15/07/2021	12:15:00	55	66	51	62	57	55	51	51	46	40	29
15/07/2021	12:30:00	55	72	50	65	58	55	52	51	46	39	30
15/07/2021	12:45:00	60	90	49	64	58	56	52	54	56	48	37
15/07/2021	13:00:00	56	71	50	65	59	56	51	52	48	40	31
15/07/2021	13:15:00	56	75	50	66	61	56	52	52	47	41	33
15/07/2021	13:30:00	56	71	48	64	58	55	51	52	48	42	36
15/07/2021	13:45:00	55	72	48	67	57	55	52	51	45	37	28
15/07/2021	14:00:00	54	70	47	62	56	54	49	51	46	37	25
15/07/2021	14:15:00	56	78	48	69	63	55	51	51	47	40	32
15/07/2021	14:30:00	55	69	50	63	59	55	51	51	46	39	32
15/07/2021	14:45:00	55	77	48	64	59	55	51	51	46	39	31
15/07/2021	15:00:00	56	78	49	65	59	56	53	52	47	40	33
15/07/2021	15:15:00	54	71	49	63	58	54	51	51	45	37	28
15/07/2021	15:30:00	54	68	48	64	58	55	51	51	45	39	33
15/07/2021	15:45:00	54	70	48	63	58	54	50	50	45	37	27
15/07/2021	16:00:00	55	78	49	64	59	55	51	52	46	38	29
15/07/2021	16:15:00	55	71	49	64	58	55	51	51	46	38	39
15/07/2021	16:30:00	55	69	49	63	58	55	51	51	45	36	29
15/07/2021	16:45:00	55	71	49	67	60	56	52	52	46	38	36
15/07/2021	17:00:00	58	80	50	67	62	59	55	54	50	42	34
15/07/2021	17:15:00	56	72	49	68	61	57	52	52	46	37	29
15/07/2021	17:30:00	54	72	48	63	58	55	51	51	44	36	27
15/07/2021	17:45:00	56	72	48	65	59	56	52	53	46	37	28
15/07/2021	18:00:00	55	71	48	63	59	56	51	51	44	36	27
15/07/2021	18:15:00	58	77	47	61	56	53	49	52	55	47	25
15/07/2021	18:30:00	55	82	47	61	57	54	50	51	46	45	33
15/07/2021	18:45:00	55	75	48	66	59	55	51	51	47	40	28
15/07/2021	19:00:00	54	71	48	63	56	53	50	50	44	36	27
15/07/2021	19:15:00	55	74	48	68	58	55	51	51	46	39	31
15/07/2021	19:30:00	57	75	47	68	60	56	53	53	49	43	35
15/07/2021	19:45:00	55	79	48	66	63	56	51	51	45	37	28
15/07/2021	20:00:00	53	70	46	63	57	53	49	50	43	35	26
15/07/2021	20:15:00	55	76	48	65	61	56	52	51	45	37	28
15/07/2021	20:30:00	53	66	47	63	57	53	49	49	43	36	28
15/07/2021	20:45:00	54	70	47	66	58	55	51	51	45	39	30
15/07/2021	21:00:00	59	83	47	67	65	60	57	54	49	41	33
15/07/2021	21:15:00	53	75	47	62	57	53	50	50	44	37	28
15/07/2021	21:30:00	54	69	47	63	57	54	50	50	44	37	30
15/07/2021	21:45:00	53	67	46	64	56	52	49	49	43	36	25
15/07/2021	22:00:00	55	74	46	63	57	58	51	50	45	37	27
15/07/2021	22:15:00	54	69	45	65	56	53	50	51	46	39	32
15/07/2021	22:30:00	53	70	45	62	56	53	49	49	43	34	24
15/07/2021	22:45:00	50	60	45	59	53	50	46	48	40	31	23
15/07/2021	23:00:00	53	71	45	62	55	52	48	50	43	38	30
15/07/2021	23:15:00	52	65	45	60	54	51	47	49	42	34	24
15/07/2021	23:30:00	50	64	44	58	52	50	45	47	39	30	20
15/07/2021	23:45:00	56	79	44	59	53	51	50	54	49	36	27
16/07/2021	00:00:00	50	65	42	60	55	50	45	47	39	33	21
16/07/2021	00:15:00	50	71	42	60	52	49	46	47	39	30	20
16/07/2021	00:30:00	52	76	42	59	55	55	48	49	41	32	21
16/07/2021	00:45:00	50	64	41	58	53	51	46	47	39	30	19
16/07/2021	01:00:00	51	70	40	57	52	50	47	48	40	31	21
16/07/2021	01:15:00	49	70	42	58	52	49	45	46	39	30	19
16/07/2021	01:30:00	47	66	42	56	52	47	43	45	37	29	16
16/07/2021	01:45:00	50	68	41	57	55	51	47	46	39	32	23
16/07/2021	02:00:00	47	64	39	57	52	48	43	43	37	31	18
16/07/2021	02:15:00	48	66	39	56	52	50	43	44	39	34	27
16/07/2021	02:30:00	48	61	40	55	51	51	44	44	37	30	20
16/07/2021	02:45:00	48	74	39	55	54	49	44	43	38	28	15
16/07/2021	03:00:00	44	60	39	54	49	45	40	42	33	27	14
16/07/2021	03:15:00	46	62	39	52	49	46	42	43	35	28	16
16/07/2021	03:30:00	49	63	39	58	53	50	44	45	42	33	22
16/07/2021	03:45:00	48	74	39	58	51	50	46	44	37	30	18
16/07/2021	04:00:00	47	64	40	59	51	48	42	43	40	32	20
16/07/2021	04:15:00	44	59	41	56	50	46	39	41	33	31	23
16/07/2021	04:30:00	45	60	39	56	51	47	40	42	34	31	22

Our Ref: J03442
Client: Zerum Consult Ltd
Project: 17 & 23 St John Street
Results: Ambient Noise Measurements

		Octave Band Centre Frequencies (Hz), dB L _{eq}										
Date	Time	dB, L _{Aeq}	dB, L _{Amax}	dB, L _{A90}	63	125	250	500	1k	2k	4k	8k
16/07/2021	04:45:00	54	80	39	58	56	53	52	49	44	41	36
16/07/2021	05:00:00	48	68	39	55	50	47	44	45	38	36	29
16/07/2021	05:15:00	50	74	40	56	51	49	44	47	38	40	33
16/07/2021	05:30:00	48	67	41	60	52	49	44	46	38	30	19
16/07/2021	05:45:00	52	69	41	62	53	51	47	49	43	36	26
16/07/2021	06:00:00	52	70	43	61	56	53	49	49	43	35	27
16/07/2021	06:15:00	52	67	43	60	56	53	49	48	42	36	28
16/07/2021	06:30:00	55	76	44	63	57	54	51	52	44	35	26
16/07/2021	06:45:00	54	70	45	63	56	54	49	51	45	39	29
16/07/2021	07:00:00	53	72	44	62	57	53	49	50	43	35	27
16/07/2021	07:15:00	57	79	46	65	60	57	53	54	48	42	34
16/07/2021	07:30:00	55	70	46	63	61	56	50	52	46	36	28
16/07/2021	07:45:00	55	73	47	65	60	56	51	52	46	37	28
16/07/2021	08:00:00	54	71	46	63	56	54	50	51	44	35	25
16/07/2021	08:15:00	58	82	48	66	60	56	53	53	51	48	44
16/07/2021	08:30:00	56	73	48	65	58	56	51	52	45	37	43
16/07/2021	08:45:00	56	70	49	64	58	56	52	52	47	38	29
16/07/2021	09:00:00	55	70	49	63	57	55	52	51	46	40	36
16/07/2021	09:15:00	54	71	47	65	57	54	50	51	45	37	30
16/07/2021	09:30:00	53	75	46	62	56	55	50	50	43	35	26
16/07/2021	09:45:00	56	74	47	66	60	56	52	52	49	42	33
16/07/2021	10:00:00	54	73	47	63	56	55	51	51	44	37	34
16/07/2021	10:15:00	53	65	48	63	57	54	49	50	44	38	30
16/07/2021	10:30:00	54	73	47	62	56	53	50	51	44	39	31
16/07/2021	10:45:00	55	69	47	62	56	56	50	51	45	38	30
16/07/2021	11:00:00	55	72	47	64	56	55	51	51	47	41	34
16/07/2021	11:15:00	53	72	47	62	56	54	50	50	44	36	29
16/07/2021	11:30:00	55	75	48	65	60	56	51	51	45	37	27
16/07/2021	11:45:00	59	81	49	67	62	60	54	55	53	44	35
16/07/2021	12:00:00	59	80	48	65	61	60	54	54	51	43	35
16/07/2021	12:15:00	56	70	49	67	60	57	52	52	47	40	31
16/07/2021	12:30:00	56	76	51	65	59	55	52	52	48	41	32
16/07/2021	12:45:00	70	81	48	64	58	56	51	51	68	61	35
16/07/2021	13:00:00	78	82	51	62	57	54	51	55	76	69	35
16/07/2021	13:15:00	55	72	48	64	58	54	50	51	46	40	30
16/07/2021	13:30:00	55	69	49	67	59	55	51	51	45	38	29
16/07/2021	13:45:00	55	69	50	68	59	56	51	52	47	42	35
16/07/2021	14:00:00	55	70	49	64	58	55	51	51	46	39	30
16/07/2021	14:15:00	57	76	49	66	61	57	53	53	50	43	33
16/07/2021	14:30:00	55	71	49	63	59	56	51	51	45	37	29
16/07/2021	14:45:00	54	71	49	64	59	55	51	51	44	36	29
16/07/2021	15:00:00	66	88	48	67	68	72	61	60	57	47	37
16/07/2021	15:15:00	55	74	48	65	59	56	51	52	46	39	30
16/07/2021	15:30:00	55	73	48	65	60	55	50	51	45	36	26
16/07/2021	15:45:00	53	73	47	61	57	55	48	49	42	34	25
16/07/2021	16:00:00	54	72	48	64	58	55	50	51	44	35	25
16/07/2021	16:15:00	55	71	48	64	62	57	51	51	44	37	29
16/07/2021	16:30:00	55	73	48	66	59	56	51	51	44	37	30
16/07/2021	16:45:00	57	74	48	65	61	58	53	53	48	41	32
16/07/2021	17:00:00	58	74	49	67	61	58	54	54	48	41	31
16/07/2021	17:15:00	58	74	49	68	62	58	54	54	48	42	33
16/07/2021	17:30:00	59	84	49	66	62	60	57	55	51	40	31
16/07/2021	17:45:00	60	86	50	67	67	65	54	54	48	39	30
16/07/2021	18:00:00	56	75	50	65	61	58	52	52	45	40	35
16/07/2021	18:15:00	56	73	48	65	60	59	52	52	46	37	29
16/07/2021	18:30:00	57	72	50	67	60	57	53	53	48	40	31
16/07/2021	18:45:00	55	71	49	66	61	56	51	51	45	37	28
16/07/2021	19:00:00	57	79	50	66	62	58	53	53	46	39	34
16/07/2021	19:15:00	56	74	49	66	64	57	51	52	47	47	31
16/07/2021	19:30:00	64	92	49	68	67	68	61	56	57	51	45
16/07/2021	19:45:00	56	76	50	66	61	57	54	52	47	40	30
16/07/2021	20:00:00	55	75	50	68	61	56	52	51	47	39	39
16/07/2021	20:15:00	54	73	48	64	57	55	50	50	44	36	26
16/07/2021	20:30:00	53	68	47	62	55	53	49	49	43	35	24
16/07/2021	20:45:00	53	71	47	63	57	55	50	50	43	36	27
16/07/2021	21:00:00	59	82	49	64	59	55	52	56	53	40	29
16/07/2021	21:15:00	55	76	49	66	61	55	51	51	45	41	41
16/07/2021	21:30:00	55	73	49	66	61	59	51	50	45	40	36
16/07/2021	21:45:00	55	71	49	65	58	55	51	52	46	39	30
16/07/2021	22:00:00	56	73	48	65	59	56	54	52	46	39	35
16/07/2021	22:15:00	56	71	49	68	60	56	53	51	46	39	33
16/07/2021	22:30:00	53	68	47	63	56	53	49	49	42	34	26
16/07/2021	22:45:00	53	69	47	64	58	53	49	49	44	37	28

Our Ref: J03442
Client: Zerum Consult Ltd
Project: 17 & 23 St John Street
Results: Ambient Noise Measurements

		Octave Band Centre Frequencies (Hz), dB L _{eq}										
Date	Time	dB, L _{Aeq}	dB, L _{Amax}	dB, L _{A90}	63	125	250	500	1k	2k	4k	8k
16/07/2021	23:00:00	53	75	47	63	58	54	50	49	44	36	26
16/07/2021	23:15:00	52	69	47	62	56	52	48	49	43	36	24
16/07/2021	23:30:00	55	71	47	66	57	54	51	51	45	37	28
16/07/2021	23:45:00	56	77	48	67	65	58	52	51	44	35	26
17/07/2021	00:00:00	54	76	48	65	58	54	50	51	45	40	30
17/07/2021	00:15:00	56	75	48	66	58	54	52	53	48	38	30
17/07/2021	00:30:00	57	76	48	67	60	55	53	54	49	41	29
17/07/2021	00:45:00	56	79	48	63	57	55	52	53	49	37	28
17/07/2021	01:00:00	54	68	48	65	58	54	51	51	45	37	28
17/07/2021	01:15:00	51	63	45	62	54	51	47	48	41	32	21
17/07/2021	01:30:00	52	69	46	64	58	54	47	48	41	32	21
17/07/2021	01:45:00	55	77	46	65	62	57	51	51	43	35	25
17/07/2021	02:00:00	53	67	47	65	56	52	50	50	43	35	24
17/07/2021	02:15:00	53	69	45	64	58	54	50	50	43	34	33
17/07/2021	02:30:00	51	65	44	60	53	51	47	48	41	32	21
17/07/2021	02:45:00	52	67	45	60	54	51	47	49	42	34	25
17/07/2021	03:00:00	51	69	43	60	54	51	47	48	41	34	26
17/07/2021	03:15:00	65	80	45	71	64	66	61	57	57	56	55
17/07/2021	03:30:00	51	67	43	60	54	52	45	46	43	37	27
17/07/2021	03:45:00	53	71	45	58	57	53	47	46	48	42	29
17/07/2021	04:00:00	51	65	44	57	54	52	46	46	44	37	24
17/07/2021	04:15:00	50	67	43	58	53	50	46	46	40	37	32
17/07/2021	04:30:00	49	66	42	59	53	50	45	46	39	31	19
17/07/2021	04:45:00	45	64	42	55	51	47	40	41	34	33	23
17/07/2021	05:00:00	51	65	43	59	55	52	46	47	43	35	24
17/07/2021	05:15:00	55	78	42	63	60	56	52	51	47	43	34
17/07/2021	05:30:00	49	70	42	59	53	49	45	46	38	33	23
17/07/2021	05:45:00	48	68	41	58	52	48	44	45	37	31	22
17/07/2021	06:00:00	50	65	43	60	55	51	46	46	41	36	28
17/07/2021	06:15:00	49	64	43	59	54	50	45	46	40	33	25
17/07/2021	06:30:00	54	77	44	60	56	53	49	51	43	35	25
17/07/2021	06:45:00	50	66	45	60	56	52	46	46	39	35	26
17/07/2021	07:00:00	51	66	45	67	58	54	47	46	40	33	22
17/07/2021	07:15:00	52	72	42	65	57	53	47	48	41	34	27
17/07/2021	07:30:00	50	68	43	58	53	51	45	48	39	31	20
17/07/2021	07:45:00	55	73	45	61	56	54	51	52	45	39	28
17/07/2021	08:00:00	59	72	47	60	58	55	60	55	45	39	29
17/07/2021	08:15:00	61	75	46	61	58	56	62	55	46	38	30
17/07/2021	08:30:00	57	78	47	64	60	57	55	54	47	41	32
17/07/2021	08:45:00	54	75	45	62	58	54	51	51	44	37	31
17/07/2021	09:00:00	53	63	46	61	57	53	49	49	44	38	28
17/07/2021	09:15:00	54	70	46	61	57	52	50	50	45	40	30
17/07/2021	09:30:00	58	75	46	61	58	57	56	53	48	42	32
17/07/2021	09:45:00	53	69	45	61	55	54	49	50	41	33	30
17/07/2021	10:00:00	55	76	45	62	58	54	50	51	47	39	26
17/07/2021	10:15:00	51	72	44	59	55	53	47	48	41	34	25
17/07/2021	10:30:00	52	71	45	61	55	52	48	49	41	34	23
17/07/2021	10:45:00	54	69	46	62	56	54	49	51	45	40	34
17/07/2021	11:00:00	52	68	45	61	55	53	48	49	43	35	26
17/07/2021	11:15:00	52	67	46	61	54	52	48	49	41	34	25
17/07/2021	11:30:00	53	77	48	62	58	57	50	49	43	36	29
17/07/2021	11:45:00	55	71	47	61	57	57	51	51	45	37	28
17/07/2021	12:00:00	52	67	47	62	57	53	48	49	43	36	27
17/07/2021	12:15:00	53	67	47	62	57	54	49	49	43	35	27
17/07/2021	12:30:00	53	71	48	63	58	55	50	50	43	35	26
17/07/2021	12:45:00	55	70	48	66	62	55	51	51	46	40	32
17/07/2021	13:00:00	54	71	48	63	58	54	49	50	45	38	31
17/07/2021	13:15:00	54	75	48	62	58	55	50	51	44	36	26
17/07/2021	13:30:00	53	68	46	61	57	54	49	49	42	35	27
17/07/2021	13:45:00	53	73	47	61	56	54	50	50	42	36	29
17/07/2021	14:00:00	54	72	48	64	60	57	51	50	44	36	27
17/07/2021	14:15:00	56	73	48	66	59	56	52	52	48	41	39
17/07/2021	14:30:00	54	76	46	61	58	55	50	51	43	35	25
17/07/2021	14:45:00	55	80	47	62	57	55	52	52	45	36	27
17/07/2021	15:00:00	57	75	48	66	67	59	53	51	45	38	29
17/07/2021	15:15:00	54	73	48	64	59	56	51	51	43	35	26
17/07/2021	15:30:00	56	81	48	63	58	56	53	52	48	39	30
17/07/2021	15:45:00	54	73	48	64	59	55	50	50	44	36	27
17/07/2021	16:00:00	55	73	48	66	60	56	52	52	46	39	31
17/07/2021	16:15:00	57	77	48	64	65	60	53	52	44	37	27
17/07/2021	16:30:00	57	82	49	64	65	61	53	52	45	36	26
17/07/2021	16:45:00	56	82	49	64	62	59	51	51	46	38	26
17/07/2021	17:00:00	54	69	51	66	59	56	50	50	46	40	31

Our Ref: J03442
Client: Zerum Consult Ltd
Project: 17 & 23 St John Street
Results: Ambient Noise Measurements

Date	Time	Octave Band Centre Frequencies (Hz), dB L _{eq}										
		dB, L _{Aeq}	dB, L _{Amax}	dB, L _{A90}	63	125	250	500	1k	2k	4k	8k
17/07/2021	17:15:00	57	73	48	66	59	56	53	53	50	40	32
17/07/2021	17:30:00	55	72	48	65	60	56	52	52	45	38	29
17/07/2021	17:45:00	57	85	48	66	63	57	54	53	46	39	31
17/07/2021	18:00:00	58	80	50	65	62	60	55	54	47	40	32
17/07/2021	18:15:00	55	75	48	64	64	56	52	50	45	36	25
17/07/2021	18:30:00	54	69	48	63	59	55	50	50	43	35	25
17/07/2021	18:45:00	57	83	48	64	61	64	53	52	44	35	24
17/07/2021	19:00:00	53	69	47	63	59	55	50	49	43	34	24
17/07/2021	19:15:00	56	75	48	66	60	58	53	52	45	36	32
17/07/2021	19:30:00	54	72	48	63	57	54	50	50	43	34	25
17/07/2021	19:45:00	58	82	49	64	60	64	53	52	46	39	32
17/07/2021	20:00:00	52	66	47	62	58	54	49	49	42	34	25
17/07/2021	20:15:00	55	74	49	66	62	56	51	51	45	37	28
17/07/2021	20:30:00	59	81	48	65	58	55	51	55	54	38	32
17/07/2021	20:45:00	55	79	48	65	58	55	53	50	45	37	28
17/07/2021	21:00:00	56	74	49	68	62	57	52	51	46	41	31
17/07/2021	21:15:00	55	71	49	65	61	56	51	51	45	38	30
17/07/2021	21:30:00	56	74	49	66	58	56	53	52	46	38	30
17/07/2021	21:45:00	54	70	47	64	57	54	50	50	44	36	25
17/07/2021	22:00:00	54	68	49	65	58	54	51	50	44	37	27
17/07/2021	22:15:00	55	71	49	65	57	54	52	51	46	39	31
17/07/2021	22:30:00	55	72	49	65	59	55	51	51	45	39	40
17/07/2021	22:45:00	56	72	50	67	60	56	52	52	46	39	31
17/07/2021	23:00:00	55	73	50	65	58	56	52	52	46	38	31
17/07/2021	23:15:00	55	70	49	64	58	54	51	51	46	38	27
17/07/2021	23:30:00	56	85	48	65	58	54	52	53	47	40	31
17/07/2021	23:45:00	56	79	49	70	62	58	53	52	46	40	30
18/07/2021	00:00:00	53	68	47	65	57	53	49	50	43	35	25
18/07/2021	00:15:00	53	72	48	63	56	53	49	50	44	36	27
18/07/2021	00:30:00	66	95	49	69	71	67	60	62	57	51	38
18/07/2021	00:45:00	57	82	48	67	61	59	55	54	46	39	29
18/07/2021	01:00:00	56	77	47	66	65	58	51	52	46	39	34