



**Land at
60-62 Clarence Road,
Longsight,
M13 0FY**

Noise Assessment

July 2021

**EnviroSolution Limited
Suite 5 The Quay
No 12 Princes Dock
Liverpool Waters
L3 1DL
0151 291 6451
www.envirosolution.co.uk**

Company Reg 6943362

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The authors of this paper are William Chambers and Neil Martin.

William Chambers is a Director of EnviroSolution and has over 15 years of experience in the environmental protection and acoustic aspects of environmental health. As an environmental health professional and member of the Chartered Institute of Environmental Health (CIEH), he has worked both in the public and private sector, and held positions including Chair of the Manchester Area Pollution Advisory Council, (Land and Water Sub Group) and Chair of the CIEH North Western Centre. He has been involved, in both sectors, in the assessment of acoustic and noise nuisance issues.

Neil Martin provides environmental and occupational noise and vibration advice to EnviroSolution and its clients. Neil Martin is a full Corporate Member of the Institute of Acoustics (MIOA) and Chartered Member of the Chartered Institute of Environmental Health with over 20 years of experience in both a regulatory role as well as considerable private industry experience.

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Action:	Signatory:	Date:
Report prepared by: Signature:	N Martin 	July 2021
Report reviewed by: Signature:	W Chambers 	July 2021
Report authorised by: Signature:	W Chambers 	July 2021

EXECUTIVE SUMMARY

The results of a noise measurement survey and desk-based assessment are presented, with respect to the proposed residential development at 60-62 Clarence Road, Longsight, M13 0FY.

The assessment finds that the proposed development site is affected principally by steady road traffic noise from the surrounding road network, with additional contributions from the local school.

None of the sources of noise are predicted to be particularly intrusive and no specific noise mitigation measures will be necessary to protect the residential amenity of future residents of the development.

The assessment concludes that the development proposal complies with the requirements of the Noise Policy Statement for England and the National Planning Policy Framework and will not result in any adverse impact on the future occupants of the development. Noise need not be reason for refusal of planning permission.

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1. Introduction

- 1.1. EnviroSolution Limited has been commissioned to undertake an acoustic assessment to support the discharge of a planning condition attached to planning permission 129121/FO/2021 granted by Manchester City Council for a residential development on land adjacent to 60-62 Clarence Road, Manchester, M13 0YF.

Site Location and Context

- 1.2. The development site is situated to the west of Clarence Road. Immediate behind the site to the west, adjacent to the north and opposite to the east area residential properties. An MOT garage is also located to the immediate north and northeast of the site and a church is located to the south.
- 1.3. An aerial Photograph is enclosed in Figure 1.
- 1.4. The condition attached to the planning permission reads

“10) a) Before the development commences a scheme for acoustically insulating the proposed residential accommodation against noise from surrounding roads shall be submitted to and approved in writing by the City Council as local planning authority.

There may be other actual or potential sources of noise which require consideration on or near the site, including any local commercial/industrial premises or plant associated with commercial premises. The approved noise insulation scheme shall be completed before any of the dwelling units are occupied.

Noise survey data must include measurements taken during a rush-hour period and night-time period to determine the appropriate sound insulation measures necessary.”

2. Policy and Guidance

- 2.1. The impact of noise can be a material consideration in the determination of planning applications. The planning system has the task of guiding development to the most appropriate locations. It is recognised that on occasions it will be difficult to reconcile some land uses, such as housing, hospitals, or schools, with other activities that generate high levels of noise. However, the planning system is tasked to ensure that, wherever practicable, noise-sensitive developments are separated from major sources of noise (such as road, rail and air transport and certain types of industrial development).
- 2.2. The Government's publication of the National Planning Policy Framework (NPPF), updated in February 2019, states that planning policies and decisions should prevent new and existing development from contributing to or being put at unacceptable risk from, of being adversely affected by unacceptable levels of noise pollution.
- 2.3. The Government have also issued the Noise Policy Statement for England (NPSE). The NPSE clarifies the Government's underlying principles and aims in relation to noise and sets a vision to promote good health and a good quality of life through the effective management of noise while having regard to the Government's sustainable development strategy. The NPSE aims to mitigate and minimise adverse impacts on health and quality of life through the effective management and control of noise.
- 2.4. The NPSE introduces the following terms, although no sound levels are given to represent these, many authorities have identified the sound level criteria in line with the World Health Organisation, BS8233:2014 and BS4142: 2014 levels. The terms introduced by the NPSE are:

NOEL – No Observed Effect Level (<30dB(A) inside <50dB(A) outside, 10dB below background)

LOAEL – Lowest Observed Adverse Effect Level (30-35dB(A) inside 50-55dB(A) outside, background to +5dB)

SOAEL – Significant Observed Adverse Effect Level (>35dB(A) inside, >55dB(A) outside, >+10dB above background)

- 2.5. The sound levels within the brackets of the previous paragraph are those determined as appropriate levels to indicate the relevant effect levels represented by the NPSE.
- 2.6. Other commonly used examples of standards utilised by Local Planning authorities for the consideration of noise impacts include comparison of the likely noise levels to be experienced at a development, with levels that have been recommended by the World Health Organisation (WHO) as Guidelines for the prevention of Community Noise Annoyance and within BS8233: 2014.
- 2.7. The WHO recommended noise levels for outdoor amenity areas (gardens) that should not be exceeded are 55dB(A) $L_{Aeq,16hr}$ in order to avoid 'Serious Community Annoyance or 50dB(A) $L_{Aeq,16hr}$ to avoid 'Moderate Community Annoyance' during the day. For indoor levels WHO set 35dB(A) $L_{Aeq,16hr}$ during the day to prevent Moderate Annoyance and 30 dB(A) $L_{Aeq,8hr}$ at night to prevent sleep disturbance.
- 2.8. The WHO guidance also recommends that maximum sound levels at night should not regularly exceed 45dB(A) within bedrooms to prevent sleep disturbance. Regularly is considered to be more than 10 times during any 8-hour night-time period.
- 2.9. BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' also specifies desirable noise levels to be achieved inside dwellings.
- 2.10. BS 8233:2014 'Sound insulation and noise reduction for buildings – Code of Practice' also specifies desirable noise levels to be achieved inside dwellings. BS 8233 presents two levels, the first between the hours of 07:00 – 23:00 and the second between 23:00 -07:00.

- 2.11. The daytime period suggests internal noise levels of 35dB $L_{Aeq,16hr}$, for resting in living rooms and bedrooms while for night-time a level of 30dB $L_{Aeq,8hr}$ is recommended. Criteria for external areas mirrors that within the WHO guidance.
- 2.12. Another commonly used standard is British Standard 4142:2014 'Method for rating industrial and commercial sound' compares the sound predicted by the source in question against the background, L_{A90} sound levels.
- 2.13. The "residual" L_{Aeq} measurement is then subtracted from the "ambient" L_{Aeq} measurement (with the sound source) to calculate the sound level created by the "problem" sound alone -termed the "specific" sound level.
- 2.14. If the "problem" sound is tonal, such as whine or hum, or if it is impulsive such as bangs or clatters or if it is irregular enough to attract attention a correction is added to the "specific level" to produce the "rating level". The "background" L_{A90} measurement is then compared against the "rating level".
- 2.15. If the "rating level" exceeds the "background" by around 10dB(A) or more this "indicates a significant adverse impact". A difference of around 5dB(A) 'indicates an adverse impact. The lower the commercial noise level is, the lower the likely impact. In addition, the published 'ProPG Planning & Noise, Professional Practice Guidance on Planning & Noise, New Residential Development' provides a 4-staged approach to undertaking a risk assessment in relation to anticipated sound levels at new residential development and the provision of mitigation measures. The guidance is principally aimed at sites exposed predominantly to noise from transportation sources.
- 2.16. In addition, the 'ProPG Planning & Noise, Professional Practice Guidance on Planning & Noise, New Residential Development' provides a 4-staged approach to un-

undertaking a risk assessment in relation to anticipated sound levels at new residential development and the provision of mitigation measures. The guidance is principally aimed at sites exposed predominantly to noise from transportation sources.

- 2.17. The first stage consists of an initial noise risk assessment, based on indicative day and night-time *noise* levels. Simply put, the higher the ambient noise in an area the greater the impact. The levels given are shown below although it should be noted that these are in excess of both the WHO and BS 8233: 2014 guidance.

Noise Risk Category*	Potential Effect if Unmitigated	Pre-Planning Application Guidance
0 – Negligible $L_{Aeq,16hr} < 50dB$ $L_{Aeq,8hr} < 40dB$	May be noticeable but no adverse effect on health and quality of life	In this category the development is likely to be acceptable from a noise perspective, nevertheless a good acoustic design process is encouraged to improve the existing environment and/or safeguard against possible future deterioration and to protect any designated tranquil areas. A noise assessment may be requested to demonstrate no adverse impact from noise. Application need not normally be delayed on noise grounds.
1 – Low $L_{Aeq,16hr} 50-63dB$ $L_{Aeq,8hr} 40-55dB$	Adverse effect on health and quality of life	In this category the development may be refused unless a good acoustic design process is followed and is demonstrated via a Level 1 Acoustic Design Statement which confirms how the adverse impacts of noise on the new development will be mitigated and minimised and that a significant adverse impact will not arise in the finished development. Planning conditions and other measures to control noise may be required.
2 – Medium $L_{Aeq,16hr} 63-69dB$ $L_{Aeq,8hr} 55-60dB$ $L_{AFmax} > 80dB^{**}$	Significant adverse effect on health and quality of life	In this category the development is likely to be refused unless good acoustic design process is followed and is demonstrated via a Level 2 Acoustic Design Statement which confirms how the adverse impacts of noise on the new development will be mitigated and minimised, and clearly demonstrates that a significant adverse noise impact will not arise in the finished development. Planning conditions and other measures to control noise will normally be required.
3 – High $L_{Aeq,16hr} > 69dB$ $L_{Aeq,8hr} > 60dB$ $L_{AFmax} > 80dB^{**}$	Unacceptable adverse effect of health and quality of life	In this category the development is very likely to be refused on noise grounds, even if a good acoustic design process is followed and is demonstrated via a Level 2 Acoustic Design Statement. Applicants are advised to seek expert advice on possible mitigation measures. Advice on the circumstances when the refusal of a new housing on noise grounds should normally be anticipated is included in the ProPG.

- 2.18. Stage 2, consists of a full assessment of the prevailing ambient noise and requires 4 elements to be considered:

- I. Element 1 – Good Acoustic Design
- II. Element 2 – Internal Noise Level Guidelines
- III. Element 3 – External Amenity Area Noise Assessment
- IV. Element 4 – Assessment of Other Relevant Issues

2.19. A good acoustic design is implicit in meeting the requirements of the NPPF and can help to resolve many potential acoustic issues.

2.20. Details of the criteria considered suitable are provided above for both internal and external sound levels. Element 4 includes such issues as local and national policy, likely occupants, wider planning objectives.

3. The Assessment

- 3.1 On-site sound monitoring was undertaken over the period 22nd-23rd June 2021 to obtain representative sound levels for the area.
- 3.2 The meter a Cirrus Optimus Green CR:171C sound level meter was set up at a height of approx. 1.3m and located a little over halfway across the site in the centre. The meter was field calibrated before and after the monitoring period with no significant variation, details are provided within Appendix B.
- 3.3 The weather during the monitoring period was warm, and dry with no wind.
- 3.4 The full results are presented within Appendix A, with a summary in the table below.

Start Time	End Time	Duration	L _{Aeq}	L _{A90}	L _{AMax}
22/06/2021 19:00	22/06/2021 23:00	03:59:59	44.6	38.5	76.2
22/06/2021 23:00	23/06/2021 07:00	08:00:00	41.7	31.1	70.9
23/06/2021 07:00	23/06/2021 19:00	12:00:01	45.1	37.6	77.3

- 3.5 The maximum night-time regularly exceeded sound level identified from the monitoring results, excluding an intense 5-minute of bird song at 03:20 was 59.1dB(A). In accordance with the planning condition measurements over the rush hour periods did not identify any significantly increase sound levels, as can be seen in Appendix A.
- 3.6 The background sound level was dominated by bird song and passing cars along Clarence Road throughout the day. Some activity at the nearby school was heard on the recordings during the lunch period, but sound levels were still in line with the rest of the day's measurements.
- 3.7 A review of the audio recordings take during the monitoring period did not identify any commercial noise from the nearby MOT stations, although these were operating at the time.

- 3.8 Given a 15dB attenuation¹ for an open window the sound levels to be experienced by the future occupants are below those identified within the guidance documents detailed in section 2 of the report. They are also below those identified for external amenity areas.
- 3.9 Therefore, no further mitigation measures are required to the properties.

¹ BS8233: 2014; Guidance on sound insulation and noise reduction for buildings

4 Conclusion

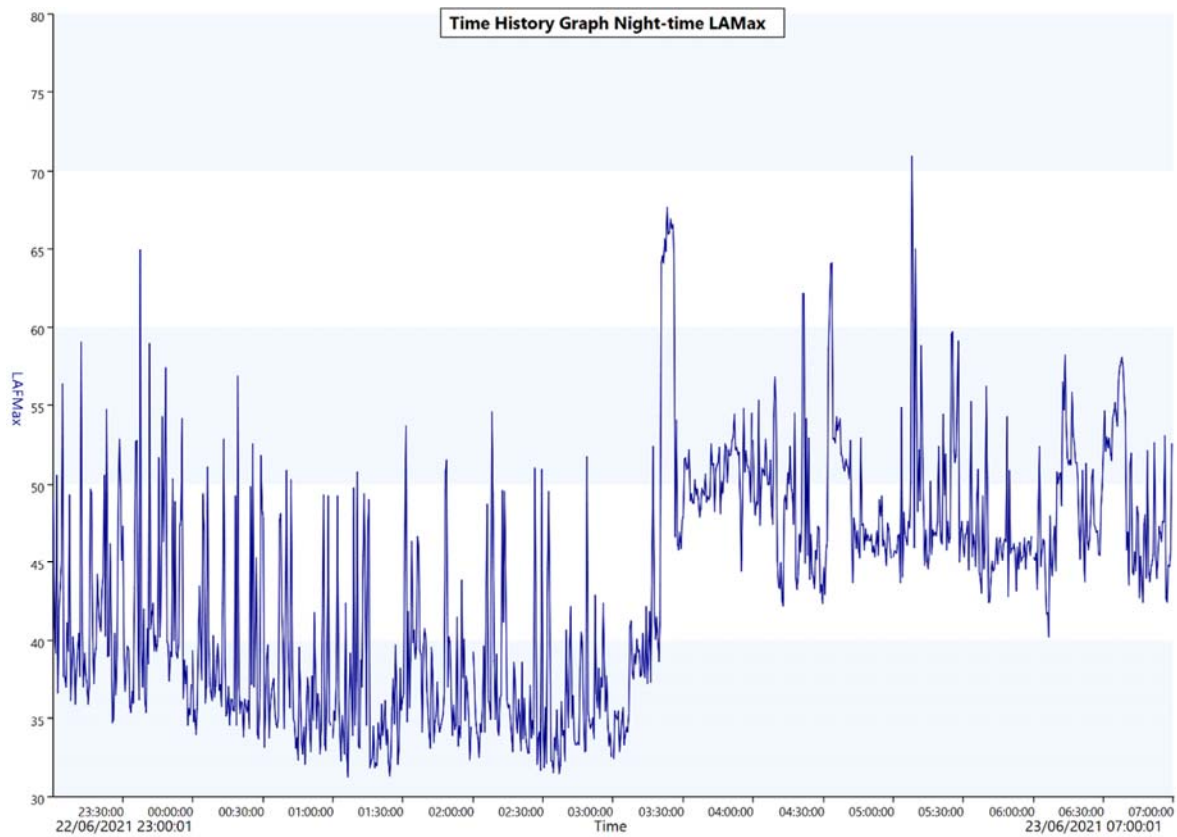
- 4.1 On-site monitoring has identified existing background sound levels in the area are below those recommended within the relevant guidance documents. This includes the sound levels identified during the morning and evening rush hour periods.
- 4.2 A review of the monitoring records did not identify any noise from the adjacent and operating MOT stations.
- 4.3 As a result, the internal and external sound levels to be experienced by the future residents are acceptable and will result in a No Observe Effect on them in line with the Noise Policy Statement for England.
- 4.4 As such the development will meet the objectives of the National Planning Policy Framework in ensuring that no significant adverse impact is experienced by the future residents. The development is therefore considered to be acceptable in terms of noise and no further mitigation measures are required.

Figure 1 – Aerial Photograph



Appendix A – Full Monitoring Results

Time	L _{Aeq} (dB)	L _{AMax} (dB)	L _{A90} (dB)
22/06/2021 19:00	47.1	76.2	40.9
22/06/2021 20:00	44.7	64.8	39.4
22/06/2021 21:00	43.6	59.4	39.0
22/06/2021 22:00	40.9	55.2	36.2
22/06/2021 23:00	39.7	65.0	33.4
23/06/2021 00:00	36.0	56.9	31.0
23/06/2021 01:00	34.0	53.7	29.6
23/06/2021 02:00	34.0	54.6	30.3
23/06/2021 03:00	46.1	67.7	31.4
23/06/2021 04:00	43.1	64.1	35.4
23/06/2021 05:00	42.4	70.9	36.0
23/06/2021 06:00	43.0	58.2	35.7
23/06/2021 07:00	42.4	60.9	35.0
23/06/2021 08:00	44.6	72.5	35.8
23/06/2021 09:00	43.5	68.6	35.6
23/06/2021 10:00	44.3	66.1	37.1
23/06/2021 11:00	45.4	66.1	37.2
23/06/2021 12:00	46.4	65.1	40.3
23/06/2021 13:00	45.1	65.0	39.3
23/06/2021 14:00	46.0	72.2	40.9
23/06/2021 15:00	45.5	64.8	39.4
23/06/2021 16:00	45.7	68.9	38.4
23/06/2021 17:00	44.2	62.9	36.7
23/06/2021 18:00	46.0	77.3	37.4



Appendix B – Sound Level Meter and Calibration Details

Type	Value
Instrument	G080402, CR:171C
Time History Rate	1 second
Last Factory Calibration	12/04/2021
Time	22/06/2021 18:18
Level	93.7 dB
Offset	-0.36 dB
Time	23/06/2021 19:19
Level	93.7 dB
Offset	-0.50 dB

Appendix C: Glossary of acoustic terms

Ambient noise: the noise from all sources, both near and far, at any given time. Conventionally defined using the A-weighted equivalent continuous noise level (L_{Aeq}) [see below].

Background noise level (dB L_{A90}): In the UK, the 90th percentile noise level (L_{A90}) is generally used to define 'background' noise. This is a statistical parameter describing the noise level that is exceeded for 90% of the measurement or assessment time. Its value lies in the fact that it is a statistical value, towards the lower end of a measured range of data, and which is relatively 'stable' i.e. not adversely affected by occasional high-energy noise events.

Decibel (dB): a unit of level derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is 20 micro-Pascals (μPa), the threshold of normal hearing is in the region of 0 dB, and 140 dB is the threshold of pain. A change of 1 dB is only perceptible under controlled conditions.

dB(A) / A-weighting: decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness. A change (in steady noise) of 3 dB(A) is the minimum perceptible under normal conditions and a change of 10 dB(A) corresponds roughly to halving or doubling the *loudness* of a sound. The background noise level in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A).

$L_{Aeq,T}$: the equivalent continuous sound level - the sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period (T). L_{Aeq} is used to describe many types of noise and can be measured directly with an integrating sound level meter.

L_{Amax} : the maximum single-event noise level attained during a measurement period.

Noise: any audible sound. Often defined as unwanted sound. Can be damaging to hearing if it is too loud or can be just annoying if it interferes with the normal enjoyment of others.

Sound / sound pressure: a fluctuation in air pressure over the static ambient pressure.

Sound pressure level: the sound pressure relative to a standard reference pressure of 20 μPa (20×10^{-6}) on the decibel scale.