

NOISE IMPACT ASSESSMENT

Site:	Land off Greenfield Lane, Rochdale
References:	51-985-R1
Date:	10 June 2026
Client:	MCI Developments Ltd





Taylor Road | Trafford Park | Urmston | Manchester | M41 7JQ
Registered in England | CRN: 08725262

+ 44 (0) 161 707 9612 | e3p.co.uk

QUALITY ASSURANCE

Report references

51-985-R1

REV REF	DESCRIPTION	DATE
01	First issue	28 th April 2026
02	Second issue	10 th June 2026

WRITTEN BY	QUALIFICATION	POSITION
Melissa Bailey	BEng (Hons) MIOA	Senior Consultant

REVIEWED BY	QUALIFICATION	POSITION
Lee Faulkner	BSc (Hons) MEnvSc CEnv MIOA	Associate Director

AUTHORISED BY	QUALIFICATION	POSITION
Lee Faulkner	BSc (Hons) MEnvSc CEnv MIOA	Associate Director



EXECUTIVE SUMMARY

Site Address	Dicken Green Mill, Greenfield Lane, Rochdale, OL11 1BL
Grid Reference	E 390067, N 411907
Proposed Development	Proposed residential development consisting of 44 no. of dwellings along with landscaping and access.
Surveys Completed	E3P has undertaken an attended road traffic sound measurement for the Rochdale Bypass during a typical weekday period in accordance with Calculation of Road Traffic Noise.
Assessments Completed	A 3D noise model has been constructed to assess road traffic sound across the site and incident upon facades. Road traffic is assessed in accordance with the criterion, for day and night, given in BS 8233:2014+A1:2019.
Mitigation Recommended	The assessment has found that standard specification glazing will be sufficient to control road noise internally. Openable windows will be sufficient to mitigate overheating.
Conclusions and Discussions	This assessment has shown that no adverse impact is predicted day or night at the receptors due to road traffic sound.



CONTENTS

1. INTRODUCTION	4
1.1. Background	4
1.2. Report Objectives	4
1.3. Proposed Development	4
2. ASSESSMENT METHODOLOGY	6
2.1. National Planning Policy Framework (2024)	6
2.2. National Planning Practice Guidance	6
2.3. Building Regulation: Approved Document F – Volume 1: Dwellings (June 2022)	8
2.4. Building Regulations: Approved Document O – Overheating (June 2022)	9
2.5. Approved document o noise guide (2024)	9
2.6. British Standard BS 8233:2014+A1:2019 – Guidance of sound insulation and noise reduction for buildings	10
3. SURVEY RESULTS	11
3.1. Road Traffic Sound Measurement – Rochdale Bypass	11
4. ROAD TRAFFIC NOISE IMPACT ASSESSMENT	13
4.1. External Amenity Area Noise Level Assessment	13
4.2. Internal Noise Level Assessment	13
4.2.1. Ventilation Condition	14
4.2.2. Overheating Condition	14
5. CONCLUSIONS AND DISCUSSION	15
APPENDIX I: LIMITATIONS	0
APPENDIX II: GLOSSARY	2
SOUND PRESSURE LEVELS	3
APPENDIX III: FIGURES	4



1. INTRODUCTION

1.1. BACKGROUND

E3P were commissioned by MCI Developments Ltd to undertake a Noise Impact Assessment for a proposed residential development at a site at Land off Greenfield Lane, Rochdale, O11 1TJ to be referred to hereafter as 'the Site'.

This assessment looks to determine the key noise sources in the immediate vicinity of the Site and to assess their impact, if any, upon proposed residential receptors and to specify mitigation measures, where required.

1.2. REPORT OBJECTIVES

The objectives of this report are as follows:

- ✦ Establish and measure the existing sound levels across the site, day and night.
- ✦ Consider the potential sources of sound impacting the site and to measure source sound levels of all applicable sources.
- ✦ Assess internal and external noise levels associated with road traffic in accordance with criteria given in BS 8233.
- ✦ Provide advice on mitigation measures, where required.

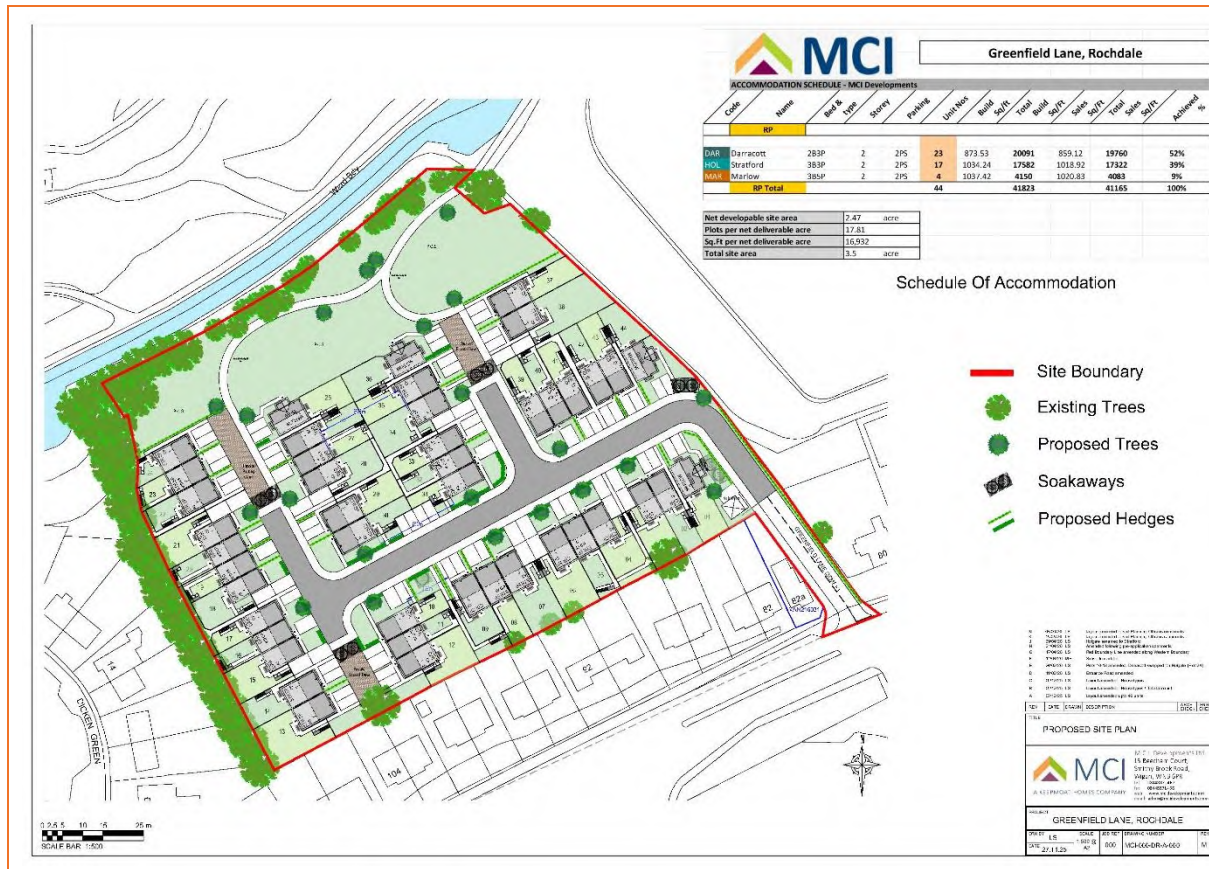
1.3. PROPOSED DEVELOPMENT

The client intends to construct 44 no. of 2 and 3 bedroom residential dwellings with associated access, parking, landscaping and adopted drainage infrastructure.

A snapshot of the proposed development layout is indicated in Figure 1.



Figure 1 Snapshot of the Proposed Development





2. ASSESSMENT METHODOLOGY

2.1. NATIONAL PLANNING POLICY FRAMEWORK (2024)

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 impact 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.

2.2. NATIONAL PLANNING PRACTICE GUIDANCE

Noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment. When preparing local or neighbourhood plans, or taking decisions about new development, there may also be opportunities to consider improvements to the acoustic environment.

Local planning authorities' plan-making and decision-making should take account of the acoustic environment and in doing so consider:

- ✦ Whether or not a significant adverse effect is occurring or is likely to occur.
- ✦ Whether or not an adverse effect is occurring or is likely to occur.
- ✦ Whether or not a good standard of amenity can be achieved.

In line with the explanatory note of the NPSE, this would include identifying whether the overall effect of the noise exposure (including the impact during the construction phase, where applicable) is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.

The “observed effect levels” are as follows:

- ✦ Significant observed adverse effect level: This is the level of noise exposure above which significant adverse effects on health and quality of life occur.
- ✦ Lowest observed adverse effect level: This is the level of noise exposure above which adverse effects on health and quality of life can be detected.
- ✦ No observed effect level: This is the level of noise exposure below which no effect at all on health or quality of life can be detected.

Table 2.1 summarises the noise exposure hierarchy, based on the likely average response.



Table 2.1 Noise Exposure Hierarchy

PERCEPTION	EXAMPLES OF OUTCOMES	INCREASING EFFECT LEVEL	ACTION
Not Applicable	No effect	No observed effect	No specific measures required.
Noticeable 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			
Noticeable 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, or having to close windows for some of the time because of the noise where there is no alternative ventilation. 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			
Noticeable and Disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion, having to keep windows closed most of the time because of the noise where there is no alternative ventilation. 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 effect	Avoid
Noticeable 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 (auditory and non-auditory).	Unacceptable adverse effect	Prevent

The subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any situation. These factors include the following:



- ✳ The source and absolute level of the noise together with the time of day it occurs. Some types and level of noise will cause a greater adverse effect at night than if they occurred during the day. The adverse effect can also be greater simply because there is less background noise at night.
- ✳ For non-continuous sources of noise, the number of noise events, and the frequency and pattern of occurrence of the noise can be important.
- ✳ The spectral content of the noise and the general character of the noise. The local topology and topography should also be considered along with the existing and, where appropriate, the planned character of the area.

More specific factors to consider when relevant:

- ✳ Where applicable, the cumulative impacts of more than one source should be considered along with the extent to which the source of noise is intermittent and of limited duration.
- ✳ Consideration should also be given to whether adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time. In both cases, a suitable alternative means of ventilation is likely to be necessary.
- ✳ If external amenity spaces are an intrinsic part of the overall design, then the acoustic environment of those spaces should be considered so that they can be enjoyed as intended.

2.3. BUILDING REGULATION: APPROVED DOCUMENT F – VOLUME 1: DWELLINGS (JUNE 2022)

Approved document F Volume 1: Dwellings (ADF) provides guidance set by the Department for Levelling Up, Housing and Communities, that relates to means of ventilation within dwellings. The ventilation strategy specified within the ADF are as follows.

1.9 The ventilation strategy in this approved document relies on a combination of all of the following.

a. Extract ventilation from rooms where water vapour or pollutants are likely to be released (e.g. bathrooms and kitchens), to minimise their spread to the rest of the building. Ventilation fans may be either intermittent operation or continuous operation.

b. Whole dwelling ventilation to provide fresh air to the building and to dilute, disperse and remove water vapour and pollutants not removed by extract ventilation.

c. Purge ventilation to remove high concentrations of pollutants and water vapour. Purge ventilation is used intermittently and required only for pollutants produced by occasional activities (e.g. fumes from painting).

1.10 Ventilation may be delivered through natural ventilation, mechanical ventilation or a combination of both.

1.11 The ventilation systems in this approved document are examples of systems that comply with Part F of the Building Regulations. Other ventilation systems may be acceptable if they can be shown to meet an equal level of performance.

Within the ADF there are three system specific ventilation systems that can be utilised to provide sufficient ventilation. These methods are as follow.



1. *Natural ventilation with background ventilators and intermittent extract fans (guidance suitable only for less airtight dwellings) - Ventilation provided by thermal, wind or diffusion effects through doors, windows or other intentional openings without the use of mechanically driven equipment. For the purposes of this approved document, natural ventilation refers to a ventilation strategy using background ventilators and intermittent extract ventilation.*

2. *Continuous mechanical extract ventilation - Mechanically driven ventilation that continuously extracts indoor air and discharges it to the outside.*

3. *Mechanical ventilation with heat recovery - A mechanically driven ventilation system that both continuously supplies outdoor air to the inside of the dwelling and continuously extracts indoor air and discharges it to the outside. For the purposes of this approved document, the guidance for mechanical ventilation with heat recovery applies to centralised or decentralised supply and extract systems, with or without heat recovery.*

2.4. BUILDING REGULATIONS: APPROVED DOCUMENT O – OVERHEATING (JUNE 2022)

Approved document O - Overheating (ADO) provides guidance set by the Department for Levelling Up, Housing and Communities, that relates to the mitigation of overheating. In relation to noise the ADO provides the following guidance.

3.2 *In locations where external noise may be an issue (for example, where the local planning authority considered external noise to be an issue at the planning stage), the overheating mitigation strategy should take account of the likelihood that windows will be closed during sleeping hours (11pm to 7am).*

3.3 *Windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following limits.*

a. *40dB LAeq,T, averaged over 8 hours (between 11pm and 7am).*

b. *55dB LAFmax, more than 10 times a night (between 11pm and 7am).*

3.4 *Where in-situ noise measurements are used as evidence that these limits are not exceeded, measurements should be taken in accordance with the Association of Noise Consultants'*

Measurement of Sound Levels in Buildings with the overheating mitigation strategy in use.

NOTE: Guidance on reducing the passage of external noise into buildings can be found in the National Model Design Code: Part 2 – Guidance Notes (MHCLG, 2021) and the Association of Noise Consultants' Acoustics, Ventilation and Overheating: Residential Design Guide (2020)

2.5. APPROVED DOCUMENT O NOISE GUIDE (2024)

This guide sets out a method to demonstrate compliance to the Building Control Body of the noise constraints in AD-O. This guide aims to provide clarity for practitioners and regulators so that assessments can be carried out consistently, and the outcome is repeatable and reliable.

Any assessment of overheating, in relation to noise, follows this guidance. Importantly, the guide, based on research and typical assumptions, provides the resulting outside-to-inside level difference for window openings necessary to satisfy the simplified method of AD-O which are expected to be:

- ✳ 5 dB for 'high risk' locations; and
- ✳ 10 dB for 'medium risk' locations.



With reference to paragraph 3.3 of AD-O, this implies the following limiting external free-field levels above which external noise precludes the use of the simplified method, and dynamic thermal modelling should be used to demonstrate compliance.

The guide also recommends that $L_{Amax,fast}$ measurement and assessment should be based on a sampling period of 2 minutes.

2.6. BRITISH STANDARD BS 8233:2014+A1:2019 – GUIDANCE OF SOUND INSULATION AND NOISE REDUCTION FOR BUILDINGS

The scope of this standard is the provision of recommendations for the control of noise in and around buildings including residential dwellings. It suggests appropriate criteria and limits for different situations, which are primarily intended to guide the design of new buildings or refurbished buildings undergoing a change of use, rather than to assess the effect of changes in the external noise climate.

The standard suggests suitable internal noise levels within different types of buildings, including residential dwellings, as shown in Table 2.2.

Table 2.2 BS 8233:2014 Recommended Internal Noise Level

CRITERION	TYPICAL SITUATION	DESIGN CRITERION $L_{Aeq,T}$ (dB)
Suitable resting and sleeping conditions	Living Room	35
	Bedroom	30

BS 8233 goes on to recommend noise levels for gardens:

It is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognised 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 might be warranted.

BS 8233 goes on to say:

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. SURVEY RESULTS

E3P has undertaken an attended road noise measurement to ascertain the impact of road noise from surrounding traffic routes upon the site. Figure 2 details the location.

Figure 2 Noise Measurement Positions



3.1. ROAD TRAFFIC SOUND MEASUREMENT – ROCHDALE BYPASS

Upon arrival at site, E3Ps surveyor was informed that the site is not currently secure and was advised against leaving any equipment unattended. As such, E3P has conducted an attended Road Traffic Noise Survey to measure the level of noise generated along Rochdale Bypass. The survey was carried out over the following time periods in accordance with Calculation of Road Traffic Noise (CRTN):

🕒 10:00 to 13:00 Tuesday 14th April 2026.

The following noise measurement position was chosen for the Road Traffic Noise Survey:

📍 Noise Measurement Position 1 (NMP1): Positioned approximately 4.5 m from the nearside kerbstone of Rochdale Bypass, on publicly accessible lane opposite the site. The microphone was



located at a height of 1.5 m above ground level and in free-field conditions. The sound climate was dominated by road traffic sound along Rochdale Bypass.

A summary of the measured sound pressure levels from the Road Traffic Noise Survey are presented in Table 3.1.

Table 3.1 Road Traffic Noise Levels – Rochdale Bypass

MEASUREMENT START TIME	MEASURED SOUND PRESSURE LEVEL (dB)			
	$L_{Aeq,T}$	10 TH HIGHEST $L_{Amax, fast}$	$L_{A90, T}$	$L_{A10, T}$
14/04/2026 10:00	71.5	80.9	64.0	74.4
14/04/2026 11:00	71.4		64.3	74.2
14/04/2026 12:00	73.4		65.0	73.9

The derived daytime and night-time noise levels are 71.2 dB and 62.1 dB respectively.

Weather conditions were conducive to the measurement of environmental noise throughout.

The equipment outlined in Table 3.2 was used for the noise surveys.

Table 3.2 Noise Measurement Equipment and Calibration Dates

MEASUREMENT POSITION	EQUIPMENT DESCRIPTION	MANUFACTURER AND TYPE NUMBER	SERIAL NUMBER	CALIBRATION DUE DATE AT TIME OF SURVEY
NMP1	Sound Level Meter	01dB Fusion	14616	10/07/2026
	Pre Amp	01dB Pre22	20951	
	Microphone	GRAS 40CD	494264	
	Calibrator	Cirrus CR515	99206	05/08/2026



4. ROAD TRAFFIC NOISE IMPACT ASSESSMENT

For the purposes of this assessment, E3P has used noise modelling software, CadnaA 2026 MR1, to determine the impact of noise from road traffic sound.

The following inputs have been included in the model:

- ✦ Site Layout.
- ✦ Rochdale Bypass is calibrated using NMP1.
- ✦ Site elevations have been taken as existing by way of a 2 m grid Digital Terrain Model (DTM) which contains public sector information licensed under the Open Government License v3.0.
- ✦ Existing buildings are included.
- ✦ A reflection order of 2 has been used in all calculations.
- ✦ Noise levels generated using ISO 9613-2:2024 "Acoustics – Attenuation of sound during propagation outdoors" and CRTN as incorporated into CadnaA software.

Figures 3 and 4 determine the noise levels across the Site during the daytime and night-time periods, respectively, due to road traffic sound.

4.1. EXTERNAL AMENITY AREA NOISE LEVEL ASSESSMENT

The noise model has been used to predict noise levels in rear garden areas to be used for relaxation. The predicted levels range between 46 dB and up to 53 dB. Therefore, rear garden areas fall below the 55 dB criterion and do not require mitigation.

4.2. INTERNAL NOISE LEVEL ASSESSMENT

With regards internal noise levels, E3P has assumed a standard glazing specification of 4 mm glass/20 mm air space/4 mm glass affords sound insulation performance in the order of 32 dB however this is for a pink noise spectrum. The same unit, weighted for road traffic noise, has a sound insulation performance value of approximately 28 dB and so this value has been used to calculate internal noise levels for noise break in.

The model has been used to predict façade noise levels at ground, first and second floors. In order to determine any requirements for mitigation, E3P has added the reduction provided by the glazing, to the relevant criterion for day (35 dB) and for night (30 dB). As such, any facades subject to noise levels higher than 63 dB during the day and/or 58 dB during the night will require higher specification glazing.

As can be seen from the figures, no facades have levels that exceed this criterion and therefore standard specification glazing will be sufficient to mitigate road noise internally.

Consideration must also be given to maximum noise levels generated by road traffic. The 10th highest maximum noise level has been used and distance corrected to the closest plot. Internal maximum noise levels of 45 dB L_{Amax} should also not be exceeded. The sound insulation performance achieved by standard glazing (29 dB) has been added to the 45 dB maximum internal noise level limit. As, such facades subject to maximum noise levels above 77 dB will require higher specification glazing.

The maximum noise level at the worst affected facades is calculated to be 63 dB. Therefore, standard specification glazing is sufficient to mitigate against maximum noise levels generated by road traffic from Rochdale Bypass.



4.2.1. VENTILATION CONDITION

When considering a partially open window for ventilation purposes, E3P has assumed that a Building Regulations ADF compliant system would be installed as part of the development, in all plots, as it is unlikely the plots are suitable for natural ventilation.

Therefore, the only consideration in relation to noise will be the performance of any window mounted or through walls vents in relation to the passage of external to internal noise.

This is discussed in the mitigation section.

4.2.2. OVERHEATING CONDITION

E3P has considered the requirements of ADO in relation to opening windows at night to mitigate the potential for overheating, which at this stage is assumed to be required. Therefore, external noise levels at affected facades apply. Any plots that experience noise levels below these limits will be able to have openable windows to mitigate any overheating. Those that exceed these limits will be subject to an Overheating Assessment by a suitably qualified professional.

It is noted that the site is within a medium risk area and, as such, an outside-to-inside level difference for window openings for the simplified method is noted to be 10 dB.

As such, the allowable façade noise levels are 50 dB averaged over the 8 hour night time period and 65 dB $L_{Amax,fast,2min}$ during the night.

As can be seen from Figures 5 and 6, no plots exceed either the average noise level assessment or the maximum noise level assessment. As such, openable windows will be sufficient to mitigate against overheating during night-time periods.



5. CONCLUSIONS AND DISCUSSION

E3P was commissioned to undertake a Noise Impact Assessment for the proposed residential development at Land off Greenfield Lane, Rochdale, O11 1TJ.

E3P has undertaken two attended road traffic sound measurements for the Rochdale Bypass during a typical weekday period.

A 3D noise model has been constructed to assess road traffic sound across the site and incident upon facades.

Road traffic is assessed in accordance with the criterion, for day and night, given in BS 8233:2014+A1:2019.

The assessment has found that standard specification glazing is sufficient and that openable windows will be sufficient to mitigate against overheating.

With mitigation measures in place, this assessment has shown that no adverse impact is predicted day or night at the receptors due to road traffic sound.

END OF REPORT

Appendix I: Limitations





GENERAL

1. This report and any associated works (together comprising the "Services") were compiled and carried out by E3P for the client (as present in Section 1) under the E3P "Terms of Business" or with those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.
2. Unless explicitly agreed otherwise, in writing, this report has been prepared under E3P Standard Terms and Business as included within our proposal to the Client.
3. Project-specific appointment documents may be agreed upon at our discretion and a charge may be levied for both the time to review and finalise appointment documents and also for associated changes to the appointment terms. E3P reserves the right to amend the fee should any changes to the appointment terms create an increased risk to E3P.
4. The report needs to be considered in light of the proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

NOISE AND VIBRATION IMPACT ASSESSMENTS

5. Where a noise or vibration survey is required to inform an assessment, E3P will endeavour to ensure that all noise and vibration measurements taken are robust, representative and reliable in order to inform an accurate assessment.
6. Where mitigation measures are specified in this report, it should be noted that these measures are relative to a specific sound or vibration source, both in terms of the measured sound pressure and vibration level and the character of the sound source. Where either the sound pressure level or the character of the sound varies following completion of the sound survey, E3P cannot be held responsible for any subsequent variations in the proposed mitigation performance.
7. The works undertaken to prepare this report comprised a study of available and easily documented information from a variety of sources (including the Client), together with (where appropriate) a brief walkover inspection of the Site and correspondence with relevant authorities and other interested parties. Due to the short timescales associated with these projects responses may not have been received from all parties. E3P cannot be held responsible for any disclosures that are provided post-production of our report and will not automatically update our report.
8. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, E3P reserves the right to review such information and, if warranted, to modify the opinions accordingly.
9. E3P does not warrant work/data undertaken/provided by others.

Appendix II: Glossary





NOISE

Noise is defined as unwanted sound. Human ears are able to respond to sound in the frequency range 20 Hz (deep bass) to 20,000 Hz (high treble) and over the audible range of 0 dB (the threshold of perception) to 140 dB (the threshold of pain). The ear does not respond equally to different frequencies of the same magnitude but is more responsive to mid-frequencies than to lower or higher frequencies. To quantify noise in a manner that approximates the response of the human ear, a weighting mechanism is used. This reduces the importance of lower and higher frequencies, in a similar manner to the human ear.

Furthermore, the perception of noise may be determined by a number of other factors, which may not necessarily be acoustic. In general, the impact of noise depends upon its level, the margin by which it exceeds the background level, its character and its variation over a given period of time. In some cases, the time of day and other acoustic features such as tonality or impulsiveness may be important, as may the disposition of the affected individual. Any assessment of noise should give due consideration to all of these factors when assessing the significance of a noise source. The most widely used weighting mechanism that best corresponds to the response of the human ear is the "A"-weighting scale. This is widely used for environmental noise measurement, and the levels are denoted as dB(A) or LAeq, LA90 etc., according to the parameter being measured.

The decibel scale is logarithmic rather than linear, and hence a 3 dB increase in sound level represents a doubling of the sound energy present. Judgement of sound is subjective but, as a general guide, a 10 dB(A) increase can be taken to represent a doubling of loudness, whilst an increase in the order of 3 dB(A) is generally regarded as the minimum difference needed to perceive a change under normal listening conditions. An indication of the range of sound levels commonly found in the environment is given in the following table.

Table A Typical Sound Pressure Levels

SOUND PRESSURE LEVEL	LOCATIONS/EXAMPLE
0	Threshold of hearing
20-30	Quiet bedroom at night
30-40	Living room during the day
40-50	Typical office
50-60	Inside a car
60-70	Typical high street
70-90	Inside a factory
100-110	Burglar alarm at 1 m away
110-130	Jet aircraft on take off
140	Threshold of pain

Appendix III: Figures



Figure 3 - Daytime Grid Noise Map - Calculation at 1.5 m above ground level

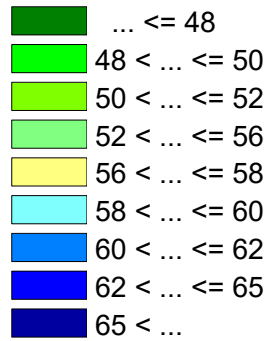


Project:
Land off Greenfield Lane,
Rochdale

Project-No:
51-985

Client:
MCI Developments Ltd

**Daytime Noise Level,
LAeq,16hr (dB)**



Noise Map Objects

- Line Source
- Road
- Parking Lot
- Building
- Barrier
- Foliage
- Height Point
- Receiver
- Building Evaluation
- Calculation Area



Project Engineer: Melissa Bailey
Date: 10/06/2026

Figure 4 - Night-time Grid Noise Map - Calculation at 4 m above ground level

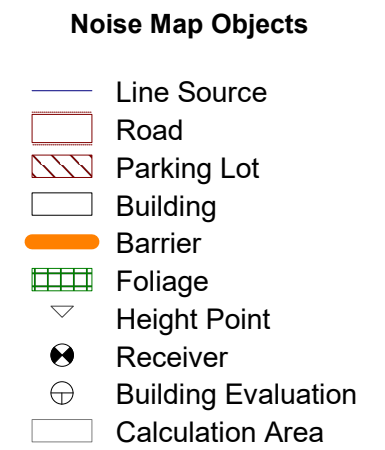
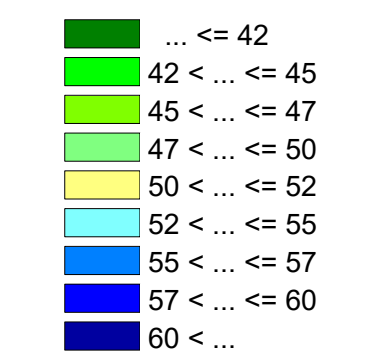


Project:
Land off Greenfield Lane,
Rochdale

Project-No:
51-985

Client:
MCI Developments Ltd

**Night-time Noise Level,
LAeq,8hr (dB)**



Project Engineer: Melissa Bailey
Date: 10/06/2026

Figure 5 - Part O Requirements - 50 dB Criterion



Project:
Land off Greenfield Lane,
Rochdale

Project-No:
51-985

Client:
MCI Developments Ltd

Night-time Noise Level,
LAeq,8hr (dB)

... ≤ 50
50 < ...

Noise Map Objects

- Line Source
- Road
- Parking Lot
- Building
- Barrier
- Foliage
- Height Point
- Receiver
- Building Evaluation
- Calculation Area



Project Engineer: Melissa Bailey
Date: 10/06/2026

Figure 6 - Part O Requirements - Maximum Criterion



ACCOMMODATION SCHEDULE - MCI DEVELOPMENTS					
Code	Name	Bed & type	Storey	Parking	
AP					
DAR	Darracott	2B3P	2	2PS	23
HOL	Stratford	3B3P	2	2PS	17
MAR	Marlow	3B5P	2	2PS	4
AP Total					44
Net developable site area:		2.47	acre		
Plots per net deliverable acre:		17.81			
Sq. Ft. per net deliverable acre:		16,932			
Total site area:		3.5	acre		

Project:
Land off Greenfield Lane,
Rochdale

Project-No:
51-985

Client:
MCI Developments Ltd

**Maximum Noise Level,
LAFMax,2min (dB)**

... <= 65

65 < ...

Noise Map Objects

- Line Source
- Road
- Parking Lot
- Building
- Barrier
- Foliage
- Height Point
- Receiver
- Building Evaluation
- Calculation Area



Project Engineer: Melissa Bailey
Date: 10/06/2026