

NOISE ASSESSMENT

on behalf of

CAMPBELL DRIVER PARTNERSHIP LTD

for the site at

**GENESIS BUSINESS PARK, COWM TOP
LANE, ROCHDALE**

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Summary

A Noise Assessment was undertaken with respect to the impact of noise from 3No. proposed industrial units to let, onto the closest noise-sensitive receptors (NSRs).

Attended noise monitoring was carried out on Saturday 12th November 2022 between 08:00 and 09:10 hours to determine existing background sound levels.

CadnaA noise modelling was utilised to predict the impact of HGV movements from the site at the closest NSRs. The noise impact was assessed using the method in BS 4142:2014+A1:2019.

The BS 4142:2014+A1:2019 assessment concluded that, considering the context of the site and the measurement location, the impact of associated noise from the proposed development would result in a low impact. The site is considered suitable for development on noise grounds and the impact will be at the No Observed Adverse Effect Level (NOAEL) or less.

Record of changes

Prepared By	Will Wright MIOA	Reviewed By	Michael Rickard MIOA
Signed		Signed	
Date	13 January 2023	Date	13 January 2023

Version	Date	Change	Initials
1	13 January 2023	Initial Issue	WW

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1 Introduction

- 1.1 Miller Goodall Ltd has, on behalf of Campbell Driver Partnership Ltd, undertaken a noise assessment in respect of the impact from expected deliveries at 3No. proposed industrial units to let at Genesis Business Park, Cowm Top Lane, Rochdale.

2 Site Description

- 2.1 The site is located at Genesis Business Park, Cowm Top Lane, Rochdale, approximately 2 km southwest of the centre of Rochdale.
- 2.2 Land immediately to the north is a business park with warehouse buildings. To the east is Cowm Top Lane, beyond which are commercial and industrial units. To the south is an area of woodland. To the west are residential properties on Kirklee Road. A site location plan is provided in Appendix 1
- 2.3 The closest, most sensitive receptors are properties on Kirklee Road, approximately 35 m from the western boundary of the site.

3 Proposed Development

- 3.1 The proposal is to develop the site for commercial/industrial use involving the erection of 3No. new industrial/commercial units to be let.
- 3.2 Road access to the development site is located off Cowm Top Lane. The units will sit along the west side of the site, with car parking and HGV delivery routes on the eastern section.
- 3.3 Proposed delivery bays and HGV paths are shielded from view of the residential properties by the structure of the proposed units. A site plan is provided in Appendix 2.
- 3.4 Intended operational hours for the units are 08:00 – 17:00 hours Monday - Saturday.

4 Policy Context

4.1 Noise Policy Statement for England

- 4.1.1 The Noise Policy Statement for England (NPSE¹), published in March 2010, sets out the long-term vision of Government noise policy. The Noise Policy aims, as presented in this document, are:

“Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- avoid significant adverse effects on health and quality of life;
- mitigate and minimise adverse effects on health and quality of life; and

¹Noise Policy Statement for England, Defra, March 2010

- where possible, contribute to the improvement of health and quality of life.”

4.1.2 The NPSE makes reference to the concepts of NOEL (No Observed Effect Level) and LOAEL (Lowest Observed Adverse Effect Level) as used in toxicology but applied to noise impacts. It also introduces the concept of SOAEL (Significant Observed Adverse Effect Level) which is described as the level above which significant adverse effects on health and the quality of life occur.

4.1.3 The first aim of the NPSE is to avoid significant adverse effects, taking into account the guiding principles of sustainable development (as referenced in Section 1.8 of the Statement). The second aim seeks to provide guidance on the situation that exists when the potential noise impact falls between the LOAEL and the SOAEL, in which case:

“...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”.

4.1.4 Importantly, the NPSE goes on to state:

“This does not mean that such adverse effects cannot occur”.

4.1.5 The Statement does not provide a noise-based measure to define SOAEL, acknowledging that the SOAEL is likely to vary depending on the noise source, the receptor and the time in question. NPSE advises that:

“Not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available”

4.1.6 It is therefore likely that other guidance will need to be referenced when applying objective standards for the assessment of noise, particularly in reference to the SOAEL, whilst also taking into account the specific circumstances of a proposed development.

4.2 National Planning Policy Framework

4.2.1 The National Planning Policy Framework (NPPF²) initially published in March 2012, was updated in July 2021. One of the documents that the NPPF replaces is Planning Policy Guidance Note 24 (PPG 24) “Planning and Noise”³.

4.2.2 The revised NPPF advises that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives). One of these is an environmental objective which is described in par. 8 (c):

“to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.”

² National Planning Policy Framework, Ministry of Housing, Communities and Local Government, July 2021

³ Planning Policy Guidance 24: Planning and Noise, DCLG, September 1994

4.2.3 At par. 174 we are advised that:

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

e) 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. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.

4.2.4 Par. 185 goes on to state:

“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:

a) 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;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

4.2.5 Par. 187 seeks to ensure that any development does not prejudice the legally permitted operations and activities of other, existing non-residential uses, stating:

“Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.”

5 Acoustic Standards and Guidance

5.1 BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’

- 5.1.1 BS 4142:2014+A1:2019⁴ provides guidance on the assessment of the likelihood of complaints relating to noise from industrial sources. It replaced the 1997 edition of the Standard in October 2014 and was amended in June 2019. The amended version corrected a number of printing errors and further clarified that the standard is used to assess external noise levels, and not internal noise levels (although this can form part of the discussion regarding context). The key aspects of the Standard are summarised below.

⁴ BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound

- 5.1.2 The standard presents a method of assessing potential noise impact by comparing the noise level due to industrial sources (the Rating Level) with that of the existing background noise level at the nearest noise sensitive receiver in the absence of the source (the Background Sound Level).
- 5.1.3 The Specific Noise Level - the noise level produced by the source in question at the assessment location - is determined and a correction applied for certain undesirable acoustic features such as tonality, impulsivity or intermittency. The corrected Specific Noise Level is referred to as the Rating Level.
- 5.1.4 In order to assess the noise impact, the Background Sound Level is arithmetically subtracted from the Rating Level. The standard states the following:
- *Typically, the greater this difference, the greater the magnitude of the impact,*
 - *A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context,*
 - *A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context,*
 - *The lower the Rating Level is relative to the measured Background Sound Level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the Rating Level does not exceed the Background Sound Level, this is an indication of the specific sound source having a low impact, depending on the context.*
- 5.1.5 In addition to the margin by which the Rating Level of the specific sound source exceeds the Background Sound Level, the 2014+A1:2019 edition places emphasis upon an appreciation of the context, as follows:
- An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.*
- 5.1.6 The 2014 edition of BS 4142 also introduced a requirement to consider and report the uncertainty in the data and associated calculations and to take reasonably practicable steps to reduce the level of uncertainty.

6 Local Authority Consultation

- 1.1 Paul Fletcher, EHO at Rochdale Borough Council, was consulted in respect of the methodology used in this assessment⁵. Mr Fletcher is in agreement that the most sensitive period in which background sound levels will be lowest during the proposed operational hours would be 08:00 – 09:00 hours on the Saturday, and an assessment of HGV delivery noise impact against measured background levels during this period will be suitable.

⁵ Email to Paul Fletcher on 1st November 2022

7 Noise Survey

7.1 Measurements of Existing Noise Sources

- 7.2 Noise measurements were undertaken at a location consistent with the closest residential properties in accordance with BS 7445-1:2003 by Steve Maslivec of Miller Goodall Ltd. The monitoring location is shown in the site location plan provided in Appendix 1. The calibration of the sound level meter was checked before and after measurements with negligible deviation (<0.1 dB). Details of the equipment used are shown in Table 1 below.

Table 1: Noise monitoring equipment

Purpose	Equipment Description	Type Number	Manufacturer	Serial No.	Date Calibrated	Calibration Certification Number
Noise Monitoring	Class 1 ^{6,7} Integrating Real Time 1/3 Octave Sound Analyser	NOR 140	Norsonic	1407510	15/12/2021	05552/1
	Microphone	NOR 1225	Norsonic	384687	15/12/2021	05552/1
	Outdoor microphone housing	NOR 1217	Norsonic	12175738	N/A	N/A
Field-calibration of noise monitoring equipment	Class 1 Calibrator ⁸	NOR 1251	Norsonic	34123	13/10/2022	05972/1

- 7.3 Background noise monitoring was undertaken between 08:00 and 09:20 hours on 12th November 2022. Weather conditions are recorded in Appendix 3 and were determined both at the start and on completion of the survey. It is considered that meteorological conditions were appropriate for environmental noise measurements.
- 7.4 The measurements were taken at times considered to be representative of some of the quietest periods of the proposed operational hours. The receptors would be subject to the lower levels of road traffic noise and generally lower background sound levels during these periods. Measurements were made under free-field conditions at a height of 1.5 m above the ground.
- 7.5 The noise sources within the vicinity of the measurement location were noted to be mainly road traffic noise predominantly from Cowm Top Lane.

⁶ IEC 61672-1 (2002) Electroacoustics – Sound level meters Part 1: Specifications

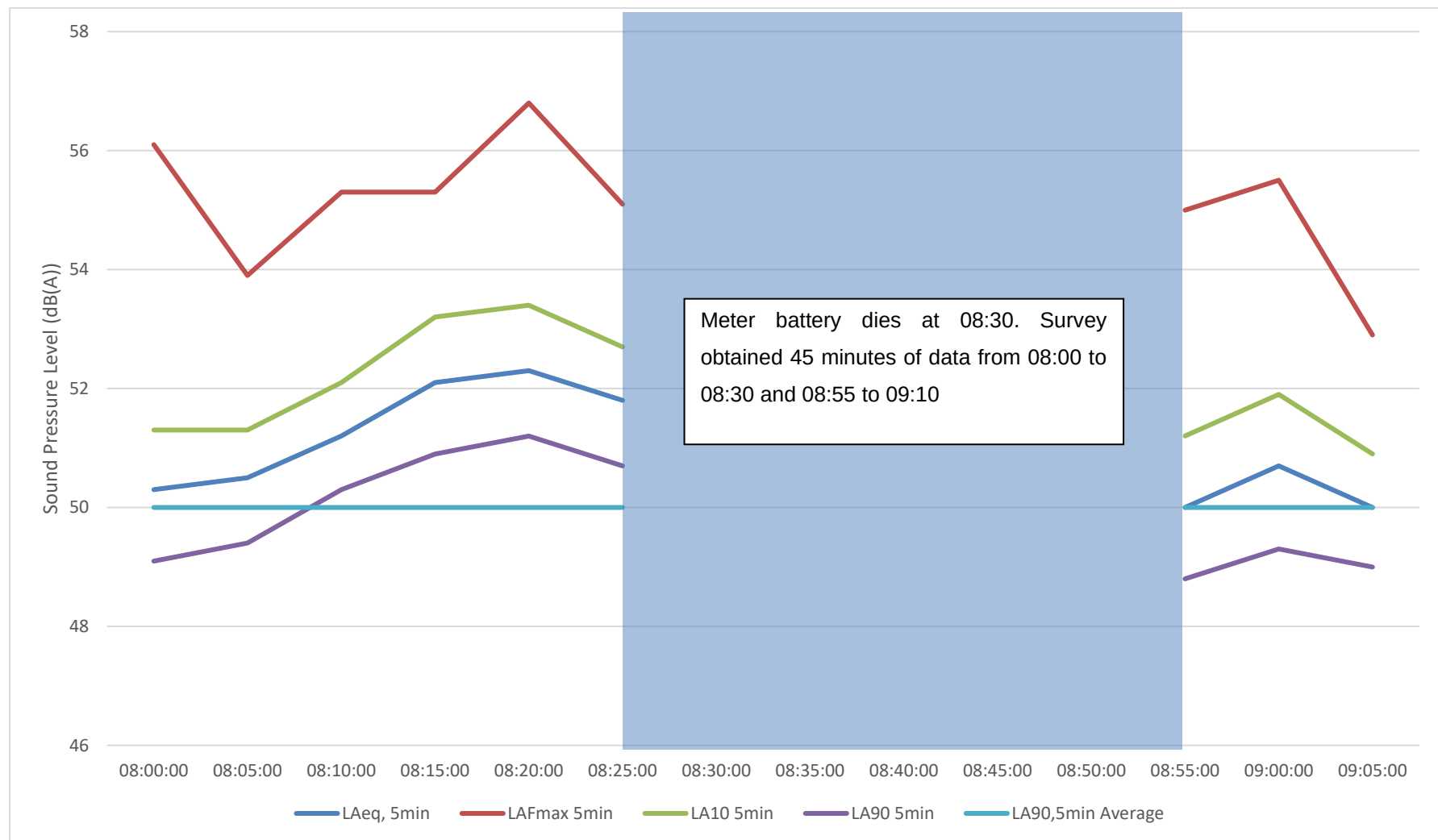
⁷ IEC 61260 (1995) Electroacoustics – Octave-band and fractional-octave-band filters

⁸ IEC 60942 (2003) Electroacoustics – Sound calibrators

7.6 Monitoring Results

- 7.7 The results of the noise assessment are provided in Chart 1 below. The sound level meter battery died at 08:30 and the survey resumed at 08:55. It is the consultant's view that we have obtained a representative period of background sound levels despite this.

Chart 1: Summary of noise monitoring at MP1



7.8 Determination of representative background sound levels

- 7.9 As can be seen from the surveyed levels, the mean average $L_{A90,5min}$ background sound level was 50 dB L_{A90} . The BS 4142 assessment therefore assumes this background sound level in order to assess HGV deliveries.

8 Impact of Proposed Noise Sources on the Development

8.1 Computer Modelling

- 8.2 Predictions of noise levels from the proposed site at nearby receptors have been undertaken using the CadnaA noise modelling package.
- 8.3 The general horizontal plan information of the area surrounding and including the proposed development site was imported from Google Maps. This was used to determine road positions, building footprint areas and relative locations. Building height information was based on site observations and Digital Surface Model (DSM) survey data obtained through Google Earth. Topography for the area surrounding the site was modelled with Lidar Digital Terrain Model (DTM) survey data. Topography within the development site was based on the proposals for the site.
- 8.4 The following parameters were applied to this model:
- Propagation model: ISO 9613
 - Default ground absorption: 0.8 (mainly soft ground)
 - Two orders of reflection
 - Buildings are set to reflecting (smooth non-structured facade)

8.5 Modelling of HGV Delivery Noise

- 8.6 Data obtained during measurements of articulated HGV noise by Miller Goodall Ltd at an operating retail store were used to assess the impact of HGV delivery noise at the proposed site.
- 8.7 The measurements were undertaken during delivery operations at 15m from an articulated HGV lorry. The unloading noise sources including opening/closing the trailer shutter, tail lift operation, the loading of crates inside the trailer, the crates being wheeled into the store and then being returned to the trailer and secured. The entire process took approximately 40 mins.
- 8.8 Octave band data for a typical delivery is shown below in Table 3.
- 8.9 The delivery movements from the site entrance to the loading bay have been mapped by following the HGV tracking on the proposed site plan.
- 8.10 It is our understanding that there will be up to 14No. deliveries per day at the proposed store. A worst case of 3No. simultaneous deliveries within a one hour period has therefore been assessed.
- 8.11 Delivery noise within the model was calibrated using the data presented in Table 2.

Table 2: Sound power levels for HGV sources in the model

Noise Source	Sound Power Level, dB, at Octave Band Centre Frequency (Hz)								dB(A)
	63 Hz	125 Hz	250 Hz	500 Hz	1.0 kHz	2.0 kHz	4.0 kHz	8.0 kHz	
HGV unloading ¹	97	91	85	84	87	85	81	74	91
Moving HGV ²	96	94	92	96	98	96	91	91	102

¹ 15 m line source at 2 m above ground

² moving point source, 15 kmph (9.3 mph) 1 m above ground. 1no/hr for daytime assessment.

8.12 BS 4142:2014+A1:2019 Assessment

8.13 A BS 4142 noise impact assessment has been undertaken in order to assess the potential noise impact at the closest, most sensitive residential receptors to the proposed development site and is detailed in this section of the report.

8.13.1 HGV Delivery Assessment

8.14 This assessment considers the impact of the deliveries during the likely lowest representative period of background sound levels. It assesses the impact of the HGV delivery events in the daytime. A character correction of +6 dB has been applied at the closest NSRs to this assessment due to the impulsive nature of an HGV delivery event (assumed 'perceptible' at the receptors).

8.15 Based on the above assumptions, the BS 4142 assessment of cumulative noise impact at the most affected locations of the proposed development site is shown in Table 3 below.

Table 3: BS 4142:2014 Cumulative noise impact assessment

Assessment Period	Background Sound Level L_{A90} , dB	Receptor Location	Specific Sound Level $L_{Aeq,T}$	Corrections dB	Rating Level (including corrections dB)	Difference between Rating Level and Background Sound Level	Initial Estimate of Impact
Daytime	50	Kirklee Road	42	+ 6 (impulsivity)	48	-2	Low

8.16 It can be seen from Table 3 above that the assessment of noise impact of the HGV delivery events based on the BS 4142 methodology, indicates the likelihood of a low impact at the worst affected receptor in the daytime. The worst affected receptors have been identified as the nearest gardens to the west of the site.

8.17 Discussion on Noise Impact

8.18 Articulated HGV delivery sound levels were used to represent potential delivery noise. The site layout plan indicates that HGVs are likely to be rigid flatbeds and so the sound level data used in the model is a conservative estimation.

8.19 It should be noted that the existing gardens have 1.8m high timber fences which are likely to provide some attenuation to sound levels received in the gardens. As the condition of these fences is not known they have not been modelled and so the model assumes a worst case without this screening.

8.20 3No. simultaneous deliveries (1No. delivery at each bay simultaneously) is a worst-case scenario, and in reality it is likely that this scenario will not occur frequently.

8.21 Mechanical Fixed Plant

8.22 The plant details and activities of individual operators are not currently known and therefore noise from these potential sources are recommended for control via a suitably worded planning condition.

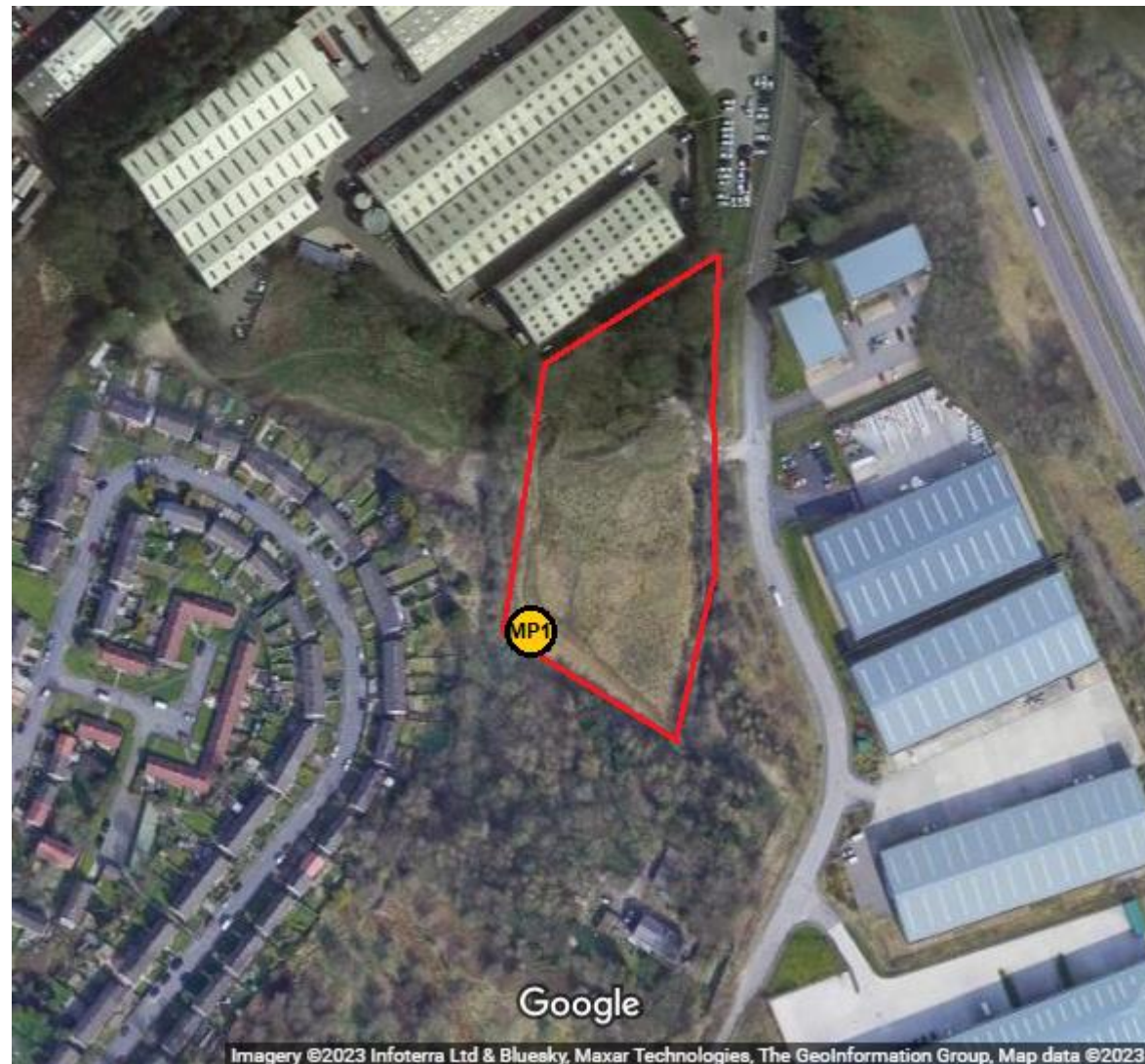
9 Conclusions

- 9.1 A noise assessment has been undertaken to predict the potential impact of HGV deliveries at the site of a proposed development at Genesis Business Park, Cowm Top Lane, Rochdale to accompany a planning application for the erection of 3No. industrial/commercial units.
- 9.2 Measurements were undertaken to determine the background sound level at the nearest most sensitive receptors for an hour during the proposed operating hours. The potential impact of activities on site likely to create noise was assessed against BS 4142:2014+A1:2019.
- 9.3 HGV delivery noise from the proposed industrial/commercial units is predicted to have a low impact on the nearest noise sensitive receptors. It is therefore considered that a suitable and commensurate level of protection against noise will be provided to the occupants of nearby residences.

APPENDICES

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Appendix 1: Site Location



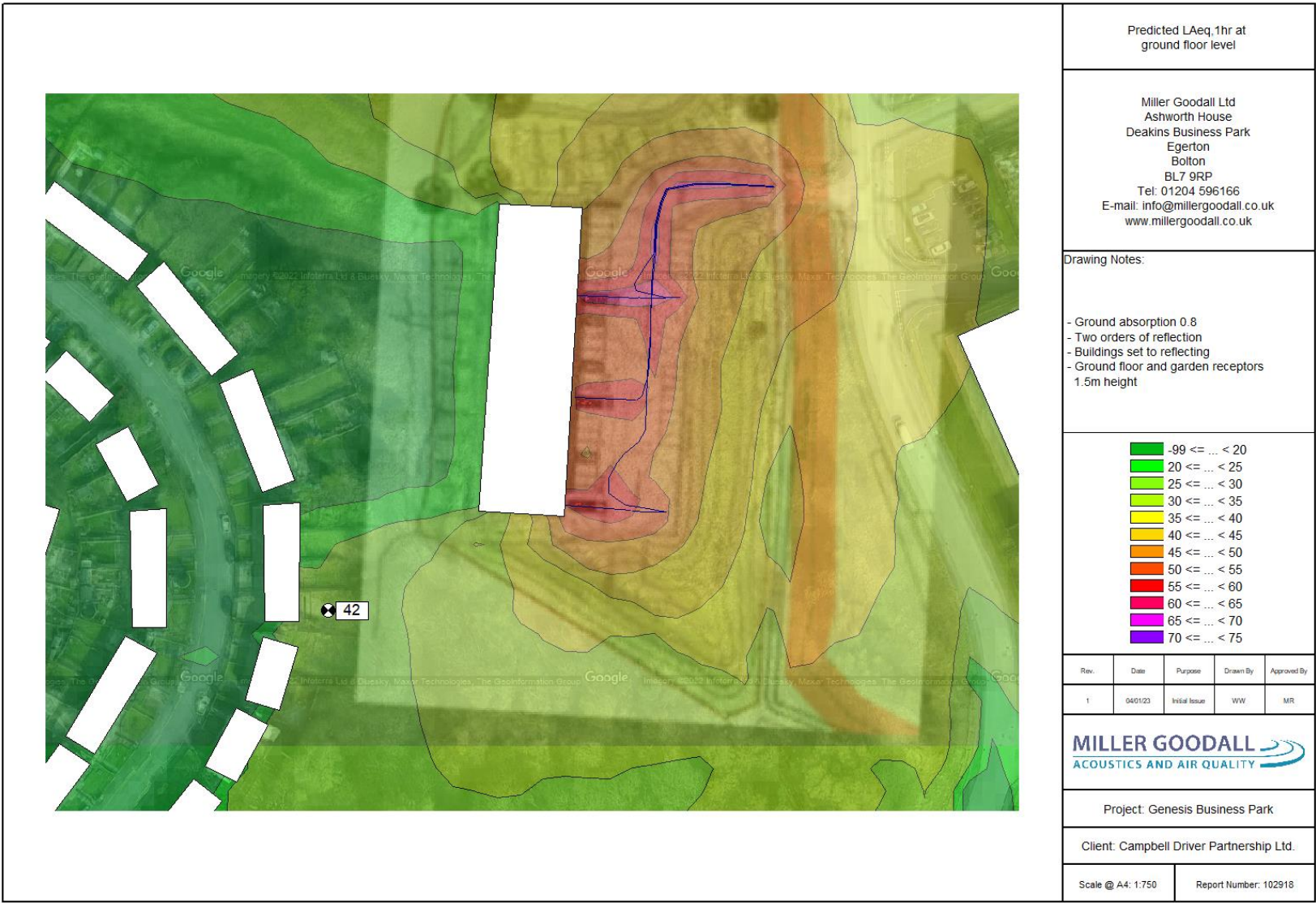
Appendix 2: Proposed Development Plan



Appendix 3: Meteorological Conditions

Measurement Locations	Date/Time	Weather conditions		
		Description	At Start of Survey	On Completion
P1	12/11/2022, 08:00 to 12/11/2022, 09:10	Temperature:	11°C	11°C
Cloud Cover Symbol Scale in oktas (eighths) 0 Sky completely clear 1 2 3 4 Sky half cloudy 5 6 7 8 Sky completely cloudy (9) Sky obstructed from view		Precipitation:	Dry	Dry
		Cloud cover (oktas – see opposite):	6	6
		Any fog/snow/ice?	No	No
		Any damp roads/wet ground?	No	No
		Wind speed:	2 m/s	2 m/s
		Wind direction:	NNW	NNW
		Any conditions that may cause temp. inversion (e.g. calm nights with no cloud):	No	No

Appendix 4: Daytime L_{Aeq} Noise Levels



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Glossary of Terms

Decibel (dB) The unit used to quantify sound pressure levels; it is 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 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 usually only perceptible under controlled conditions.

dB L_A 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 L_A broadly agree with an individual's assessment of loudness. A change of 3 dB L_A is the minimum perceptible under normal conditions, and a change of 10 dB L_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 L_A ; normal conversation about 60 dB L_A at 1 meter; heavy road traffic about 80 dB L_A at 10 meters; the level near a pneumatic drill about 100 dB L_A .

$L_{A90,T}$ The A weighted noise level exceeded for 90% of the specified measurement period (T). In BS 4142: 2014+A1:2019 it is used to define background noise level.

$L_{Aeq,T}$ 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). $L_{Aeq,T}$ is used to describe many types of noise and can be measured directly with an integrating sound level meter.

L_{Amax} The highest A weighted noise level recorded during the time period. It is usually used to describe the highest noise level that occurred during the event.

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