MILLER GOODALL
ACOUSTICS - AIR QUALITY - LIGHTING

Noise Assessment

on behalf of

MORGAN SINDALL CONSTRUCTION LTD

for the site at

LECONFIELD INDUSTRIAL ESTATE, CLEATOR MOOR, COPELAND, CA25 5QB

REPORT DATE: 27 OCTOBER 2025

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Miller Goodall Ltd
Ground Floor
Ashworth House
Deakins Business Park
Blackburn Road
Egerton
Bolton
Lancashire
BL7 9RP

Tel: 01204 596166

www.millergoodall.co.uk

Cover Note: October 2025

This updated version (V5) of the noise assessment for Plots 9 and 12 of Leconfield Industrial Estate has been issued to accompany the October 2025 planning submission.

The update reflects:

- Minor amendments to the red-line boundary and site layout.
- Updated traffic data issued by Curtins Ltd. in October 2025
- Administrative updates only – no remodelling or new survey work

The latest traffic flows are slightly lower than those previously assessed in February 2025. Accordingly, the previous noise assessment represents a worst-case scenario, and all conclusions remain valid. No change is required to the mitigation or noise limits previously reported.

Summary

Miller Goodall Ltd has on behalf of Morgan Sindall Construction Ltd, undertaken a noise assessment in connection with a planning application for the erection of commercial units at plots 9 and 12 plus the partial demolition of the Brannans Building at Leconfield Industrial Estate, Cleator Moor, Copeland, CA25 5QB.

The site falls within the administrative boundary of Cumberland Council (CC) who have requested a noise assessment be submitted in connection with the application to demonstrate that a reasonable degree of amenity is capable of being secured for noise-sensitive receptors from proposed noise-generating areas of the site.

Noise surveys were previously undertaken at locations representative of existing dwellings that would be closest and most exposed to any noise associated with the proposals. Potential road traffic noise emissions from a new access road have been predicted using computer noise modelling, the results of which have then been assessed against a range of policies, guidance, and standards. Occupants of the proposed new units, the location and layout of which are subject to change during the detailed design stage, have not yet been established. Consequently, further outline noise level limits and other noise management measures have been provided to help safeguard existing residential amenity.

Provided any noise control measures are incorporated in the design and use of the site, an acceptable degree of residential amenity should be secured at the nearest noise-sensitive receptors, and it can be concluded that the proposed development would be acceptable in noise terms.

Record of changes

Prepared By: William Wright MIOA **Reviewed By:** Lesley Goodall MIOA

Signed:	[redacted]	**Signed:**	[redacted]
Date:	27 October 2025	**Date:**	27 October 2025

Version	Date	Change	Initials
1	29 September 2023	First issue	WW
2	2 October 2023	HGV flow description amended	WW
3	14 February 2025	Updated traffic flow data and background sound level survey	WW
4	17 February 2025	CBC updated to CC, Client Name Amendment	WW
5	27 October 2025	Updated red line boundary, changes to plot 12 internal layout which effects the overall predicted traffic flow.	WW

Contents

1 Introduction

1.1 Miller Goodall Ltd has on behalf of Morgan Sindall Construction Ltd, undertaken a noise assessment in connection with a planning application for the erection of commercial units at plots 9 and 12 of Leconfield Industrial Estate, Cleator Moor, Copeland, CA25 5QB (the site).

1.2 The site falls within the administrative boundary of Cumberland Council (CC) which has requested a noise assessment be submitted in connection with the application to demonstrate that a reasonable degree of amenity is capable of being secured for both existing and future noise-sensitive areas of the development from existing and proposed noise-generating areas of the site and wider area.

1.3 The current application is for the erection of Plots 9 and 12 only. Updated traffic flow data has been provided by the traffic consultant, Curtins Ltd and it indicates that predicted traffic flows have reduced since Version 4 of this report was issued. The February 2025 noise assessment, therefore, remains valid as it represents a conservative worst-case scenario.

1.4 This updated report addresses the revised red line boundary for the project and considers the assessment of traffic noise impact resulting from the proposed development based on the updated traffic flow data provided by Curtins.

2 Site Description

2.1 The site is located in Cleator Moor, a small town in the western part of the Lake District. The site is located approximately 5 km to the southeast of Whitehaven.

2.2 The site is located within the wider commercial area known as Leconfield Industrial Estate. An outline planning application (Reference 4/22/2308/001) was prepared by Miller Goodall Ltd in 2022, for *"the redevelopment of an existing industrial estate, a new industrial extension on land to the north, an additional extension for hotel (c1) & student accommodation (siu generis) to the east comprising up to 44,350 square metres of new floorspace, proposed uses also include research & development, light industrial, general industrial, storage & distribution (class e(g), b2, b8 uses) with ancillary food/drink (class e(b)), education & new community facilities (class f1(a & e)) along with car parking, other infrastructure & full details of the accesses".* The noise impact assessment indicated that there would be a low noise impact provided recommended mitigation measures are implemented.

2.3 This application is specifically for Plots 9 and 12, which are located in 'Area 1' of the outline Masterplan for the redevelopment of the industrial estate. Area 1 is located in the centre of the Masterplan. Plots 9 and 12 are located approximately 200 m north of B5295 (Leconfield Street) and located off the main existing access route through the industrial estate.

2.4 The land surrounding Plots 9 and 12 is part of the Masterplan, extending approximately 200 m in all directions. The nearest residential dwellings to Plots 9 and 12 are located approximately 200 m to the northeast (Sanderson Park) and 200 m south (Leconfield Street). Vehicles using the development will use the existing access, which travels south and exits onto Leconfield Street. Leconfield Street is bordered by residential dwellings in both directions, east and west, away from Leconfield. **Appendix 1** presents the site location.

2.5 The nearest existing noise-generating land uses around the site include;

- Cleator Moor Celtic Football Club (CMCFC), which typically has one football match each week of the football season; and;
- Local roads

3 Proposed Development

3.1 The proposed development is for several commercial units at Plots 9 and 12 of the Leconfield Industrial Estate Masterplan. The units are intended to be occupied by 'start-up' businesses as workshop space; however, as rentable light industrial units, the exact nature of the use of each unit cannot be known in advance.

4 Policy, Guidance and Assessment Methodology

4.1 National planning policy and acoustic standards and guidance referred to in this assessment are outlined in **Appendix 3**.

5 Local Authority Consultation

5.1 Kevan Buck, Environmental Health Officer at the former CBC (now CC) was previously consulted in respect of the assessment methodology used in the noise assessment for the previous proposals at this site, via email, and finally, a meeting at the site[2]. Matters of concern regarding noise at that time, that would still apply to the intended use of the proposed development at plots 9 and 12, included the consideration of development traffic and HGV movements and the setting of cumulative operational sound level limits. It is assumed that the concerns of CC are still relevant and applicable.

6 Methodology

6.1 Existing sound levels around the site at locations representative of nearby noise sensitive receptors have been established.

6.2 Future noise from the site needs to be predicted as far as reasonably practicable. However, the operator of any new industrial buildings cannot be established at this early stage. Consequently, as agreed with CC, the prediction of noise from the proposed development has been limited to the prediction of road traffic noise levels which has been undertaken using the CadnaA noise prediction software.

6.3 The predicted noise levels associated with road traffic noise associated with the site have been assessed using;

- DMRB - Design Manual for Roads and Bridges, Volume 11 Section 3 Environmental assessment techniques, Part 7 HD 213/11 Revision 1, Noise and vibration, 2011
- BS4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound

6.4 In order to protect the amenity of nearby NSRs, recommended daytime cumulative noise rating level limits for new plant, equipment and operational activities have been provided as well as general noise mitigation techniques to be employed across the development.

[2] Site visit and meeting on 23/11/2021

7 Noise Survey

7.1 Measurements of Existing Noise Sources

7.1.1 Noise measurements were undertaken at locations consistent with the identified noise sensitive receptors in accordance with BS 7445-1: 2003[1] by Miller Goodall Ltd in November 2021. Further details of the noise survey were presented in our report *102682-2_Noise Assessment_Leconfield_01032022*.

7.1.2 These measurement results are over 3 years old, and so additional monitoring was undertaken in September 2024 at representative locations of the worst affected receptors as set out in the first issue of this report *ref 102682-3 Noise Assessment Report - Leconfield Industrial Estate, Copeland Version 2* dated September 2023. The results from the 2024 survey have been used to verify the previous survey results and the consequent assessment.

7.1.3 The 2021 measurement locations are shown in **Appendix 1**. 2024 survey locations are shown in **Appendix 2**.

7.1.4 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 below

[1] BS 7445-1: 2003 Description and measurement of environmental noise - Part 1: Guide to quantities and procedures

Table 1: Noise monitoring equipment

Equipment Description	Type Number	Manufacturer	Serial No.	Date Calibrated	Calibration Certification Number
Class 1[2,3] Integrating Real Time 1/3 Octave Sound Analyser	NTi XL2-TA	NTi Audio	A2A-11111-E0	16/10/2023	05451/1
Pre-amplifier	Nti MA220	NTi Audio	6908	16/10/2023	05451/1
Microphone	NTi MC230A	NTi Audio	A14423	16/10/2023	05451/1
Class 1 Calibrator[4]	CAL 200	Larson Davies	14154	22/08/2024	06881/2
Outdoor microphone housing	NTi WP30	NTi Audio	N/A	N/A	N/A
Class 1[5,6] Integrating Real Time 1/3 Octave Sound Analyser	NTi XL2-TA	NTi Audio	A2A-15860-E0	27/02/2023	06143/1
Pre-amplifier	NTi MA220	NTi Audio	8102	27/02/2023	06143/1
Microphone	NTi MC230A	NTi Audio	A16445	27/02/2023	06143/1
Class 1 Calibrator[7]	NOR 1251	Norsonic	32798	29/05/2024	U47928
Outdoor microphone housing	NTi WP30	NTi Audio	NA	NA	NA
Class 1[8,9] Integrating Real Time 1/3 Octave Sound Analyser	NTi XL2-TA	NTi Audio	A2A-11111-E0	16/10/2023	05451/1
Pre-amplifier	Nti MA220	NTi Audio	6908	16/10/2023	05451/1

[2] IEC 61672-1 (2002) Electroacoustics – Sound level meters Part 1: Specifications

[3] IEC 61260 (1995) Electroacoustics – Octave-band and fractional-octave-band filters

[4] IEC 60942 (2003) Electroacoustics – Sound calibrators

[5] IEC 61672-1 (2002) Electroacoustics – Sound level meters Part 1: Specifications

[6] IEC 61260 (1995) Electroacoustics – Octave-band and fractional-octave-band filters

[7] IEC 60942 (2003) Electroacoustics – Sound calibrators

[8] IEC 61672-1 (2002) Electroacoustics – Sound level meters Part 1: Specifications

[9] IEC 61260 (1995) Electroacoustics – Octave-band and fractional-octave-band filters

7.1.5 Details of the measurement locations, their purpose, and the existing prevailing noise sources at each location are summarised in Table 2.

Table 2: Description and purpose of noise measurement locations and noise sources

Measurement Location (Appendix 1)	Location Description	Purpose	Main Noise Source(s)
NML1	2m above ground and 1m from boundary with rear garden of dwellings on Heather Bank	To establish existing daytime and night-time noise levels outside existing dwellings on Heather Bank, James Street and Heathcote Park, and noise-sensitive development in Area 2.*	Distant road traffic
MP1	1.5m above ground on footpath behind gardens at rear of dwellings on Heather Bank	To verify the 2021 NML1 survey results for their use in the assessment of updated traffic data.	Distant Road Traffic
NML2A	1.5m above local ground, adjacent to rear garden of dwelling on Sanderson Park	To establish existing daytime and peak hour noise levels outside existing dwellings on Sanderson Park.	Distant road traffic
NML2B	1.5m above local ground, on access road to dwellings on Threaplands facing Bowthorn Road	To establish existing peak hour noise levels outside existing dwellings on Bowthorn Road and Threaplands.	Road traffic.
MP2	1.5m above local ground, on footpath to the east of dwellings on Sanderson Park	To verify the 2021 NML2 survey results for their use in the assessment of updated traffic data.	Road traffic and overhead aircraft
NML3	1.5m above local ground, towards northern site boundary	To establish existing noise levels outside rear of existing dwellings on Bowthorn Road.	Road traffic and some steady and very faint noise from industrial uses within Area 1

Measurement Location (Appendix 1)	Location Description	Purpose	Main Noise Source(s)
NML4A	1.5m above local ground, on southern site boundary	To establish existing noise levels outside rear of existing dwellings on Leconfield Street.	Steady fixed plant at rear of Capital Aluminium Extrusions.
NML4B		To establish existing noise levels outside rear of existing dwellings on Furnace Court	
MP4	1.5m above local ground, to the rear of 34 Leconfield Road	To verify the 2021 NML4 survey results for their use in the assessment of updated traffic data.	Leconfield Road traffic as well as radio and power tool usage from existing industrial estate use.

*Area 2 was part of the prior proposed development for which this survey was initially undertaken and is not related to this application for plots 9 and 12.

7.2 2021 Monitoring Results

7.2.1 Survey results and observations at each measurement location are summarised as follows.

NML1

7.2.2 Existing environmental noise levels were logged at NML1 from 13:00hrs on Tuesday 23rd November 2021 until 07:00hrs on Wednesday 24th November 2021. The results of these measurements are considered to be representative of existing noise levels outside dwellings on Heather Bank, James Street and dwellings on Heathcote Park that area set well back from Birks Road.

7.2.3 A summary of the broadband noise levels measured at NML1 is provided in Table 3. Due to the volume of data obtained, the results are shown graphically (time-level history) in **Appendix 4**. Raw data are held on file and can be provided on request.

Table 3: Range of measured broadband noise levels, NML1

Date	Period	Elapsed Time, T (hh:mm)	Range of Measured Noise Levels, dB			
			$L_{AFmax,15min}$	$L_{Aeq,15min}$	$L_{A10,15min}$	$L_{A90,15min}$
Thu 23/11/2021	Day	10:00	47 – 73	36 – 47	39 - 47	31 - 44
	Night	08:00	38 – 62	28 - 44	29 - 47	26 - 41

Fri 24/11/2021

7.2.4 Noise levels at this location exhibit the diurnal characteristics expected of semi-urban locations exposed to road traffic. Statistical analysis of the measured background sound levels ($L_{A90,15min}$) data has also been undertaken and a histogram of the measured data is provided in **Appendix 5**. The mode of the measured day and night-time L_{A90} data has been taken as being representative of the prevailing background sound level at NML1.

7.2.5 In summary, at NML1;

- The dominant source of noise was road traffic throughout the survey.
- The measured daytime noise exposure level ($L_{Aeq,10hr}$) and the daytime road traffic noise exposure level were calculated in accordance with the shortened method of CRTN (using the measured L_{A10} noise levels between 13:00-16:00hrs) are both 43 dB L_{Aeq}.
- The measured noise level during the PM Peak hour (17:00-18:00hrs) was 44dB $L_{Aeq,1hr}$.
- The measured night-time noise exposure level was 38dB $L_{Aeq,8hr}$
- The typical free-field night-time L_{AFmax} sound levels were typically below 60dB L_{AFmax}.
- The typical free-field background sound level (**Appendix 5**) is taken as being;
  - 42 dB $L_{A90,1hr}$ in the daytime (07:00-23:0hrs); and,
  - 28 dB $L_{A90,15min}$ at night (07:00-23:00hrs) which is low in absolute terms.

NML2A/2B, NML3, NML4A/4B

7.2.6 The results of the noise survey at these locations are summarised in the following table. Full results are provided in **Appendix 6**.

Table 4: Range of measured daytime broadband noise levels, NML2A-NML4B

Measurement Location	Period	Range of Measured Noise Levels, dB			
		$L_{AFmax,15min}$	$L_{Aeq,15min}$	$L_{A10,15min}$	$L_{A90,15min}$
NML2A	Daytime	62-67	45-47	47	40-43
	PM Peak hr	57-59	43	46	39
NML2B	PM Peak hr	73	59-60	65	42
NML3	Daytime	54-57	46	47-48	43-44
NML4A	Daytime	60	52	53	51
NML4B	Daytime	68	56	58	55

7.2.7 The survey results are summarised as follows:

7.2.8 At NML2A;

- The main source of noise was road traffic throughout the survey.
- The daytime road traffic noise exposure level calculated in accordance with the shortened method of CRTN (using the measured L_{A10} noise levels between 13:30-15:58hrs) was 44 dB $L_{Aeq,16hr}$.
- Road traffic noise levels decreased slightly during PM Peak hour to 43dB $L_{Aeq,1hr}$.
- The typical daytime free-field background sound level is taken as being 40 dB $L_{A90,1hr}$ in the daytime.

7.2.9 At NML2B;

- The main source of noise was road traffic throughout the survey.
- The PM Peak hour road traffic noise levels were 59-60 dB $L_{Aeq,15min}$, and has been taken as being 60 dB $L_{Aeq,1hr.}$ and daytime road traffic noise levels are likely to exceed 50dB $L_{Aeq,16hr}$ at this location.
- Regular peaks in noise were attributable to passing traffic and were up to 73 dB L_{AFmax}.
- The typical daytime free-field background sound level is taken as being 42 dB $L_{A90,1hr}$.

7.2.10 At NML3;

- The main source of noise was road traffic throughout the survey, although some very faint and steady fixed plant was audible from one existing premises in Area 1 of the Site.

- The daytime road traffic noise exposure level calculated in accordance with the shortened method of CRTN (using the measured L_{A10} noise levels between 13:55-16:16hrs) was 45 dB L_{Aeq}.
- The typical daytime free-field background sound level is taken as being 43 dB $L_{A90,1hr}$.

7.2.11 At NML4A;

- The main source of noise was steady fixed plant at the rear of Capital Aluminium Extrusions.
- The measured ambient noise level was 52 dB $L_{Aeq,T}$.
- The typical daytime free-field background sound level is taken as being 51 dB $L_{A90,1hr}$.

7.2.12 At NML4B;

- The main source of noise was steady fixed plant at the rear of Capital Aluminium Extrusions.
- The measured ambient noise level was 56 dB $L_{Aeq,T}$, 4 dB louder than at NML4A, a short distance away.
- The typical daytime free-field background sound level is taken as being 55 dB $L_{A90,1hr}$

7.3 2024 Verification Monitoring Results

7.3.1 The results of the noise survey at MP1, MP2 and MP4 are summarised in the following table.

Table 5: Measured daytime broadband noise levels, MP1, MP2 & MP4 on 19/09/2024

Measurement Location	Period (T)	Range of Measured Noise Levels, dB			
		$L_{AFmax,T}$	$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$
MP1	12:07 – 13:08	79	40	40	31
MP2	11:52 – 13:10	71	44	39	32
MP4	10:09 – 11:08	66	47	50	41

7.3.2 When compared against the 2021 survey results, ambient sound levels agree with the previously measured ranges. It is considered that the sound levels from the 2021 survey are suitable to inform the assessment of updated traffic flow data.

8 Prediction of Noise from the Proposed Development

8.1 Modelling Parameters

8.1.1 The general horizontal plan information of the area surrounding and including the proposed development site was imported from Google Maps and OpenStreetMap. This was used to determine building footprint areas and relative locations and is considered accurate to within 5%. Building height information was based on a combination of assumptions, on-site observations or plans provided by the client architects. Existing site topography has been obtained from the National LIDAR Programme DEFRA Data Services Portal.

8.1.2 Specific model parameters were applied as follows;

- Propagation model: ISO 9613-2:1996[10].
- Default ground absorption: 0.8.
- Two orders of reflection.
- No adverse weather.
- Buildings are reflecting (smooth, non-structured facade).

8.2 Road Traffic Input Data

8.2.1 The assessment in this report remains unchanged, utilising the traffic flows provided by Curtins Ltd. in February 2025. The updated traffic data shows fewer trips generated from the updated proposed development than were predicted in February 2025. The assessment in this report, therefore, provides a conservative case.

8.2.2 Traffic flow data has been provided in the form of 18-hour AAWT flows for the access road into the proposed development for the baseline year (2019) and 2026 with the proposed development. The AAWT traffic flow data and posted road speeds used in the noise assessment are provided in **Appendix 7**. The traffic data shows that;

- There is an expected increase in overall traffic including HGV traffic on the access road to plots 9 and 12.
- Expected long term (2026) development specific traffic causes a 50.2% increase over the 2026 'Do minimum' scenario.

[10] ISO 9613-2: 1996 Acoustics - Attenuation of sound during propagation outdoors – Part 2: General method of calculation

- The same comparison with HGV traffic flows shows an expected 188.9% increase.

8.2.3 The traffic data has been used to calculate the highest free-field noise levels at the façade of existing noise-sensitive receptors (NSRs) closest to the proposed site and access road utilising the building evaluation function of CadnaA. The dwellings fronting onto Leconfield Street to the south of the site and adjacent to the east of the access road have been identified as the nearest and worst affected NSRs in the vicinity of the proposed development site.

8.2.4 Noise levels have been calculated for two scenarios, in the absence of any additional noise mitigation measures, which are as follows;

1. DMRB assessment of the daytime road traffic noise level ($L_{Aeq,16hr}$) from the access road into the site using the methodology set out in CRTN. This is based on the total vehicle AAWT for 2026 with the development of 1680 vehicles and 5% HGV ; and

2. BS 4142 assessment of the Daytime Conservative Hourly HGV movements of 5 HGVs per hour, determined from total '2026 with development scenario' HGV movements rounded up. As this includes the HGV traffic associated with existing and committed uses that use the access road as well as the proposed development, this value is considered to be a suitable conservative value by the consultant.

8.2.5 For scenario 2 above, the conservative hourly HGV movements have been modelled as a moving point source (at 30mp/h or 48km/h), 0.5m above local ground. Source noise data adopted for HGVs is shown in Table 6 and is derived from L_{AFmax} pass-by noise levels contained in BS 5882 (Table C.6 Ref. 21).

Table 6: HGV source noise used within CadnaA

Source Description	Location	Sound Power Level, L_W dB at Octave Band Centre Frequency, Hz								L_{WA} dB(A)
		63	125	250	500	1k	2k	4k	8k	
HGV	On access road	124	110	102	101	105	100	99	92	109

8.2.6 The February 2025 assessment utilised 2026 'Do Minimum' and 'With Development' flows provided by Curtins. Updated traffic data supplied in October 2025 indicates marginally lower Annual Average Daily Traffic (AADT) flows. The reduction applies to both light- and heavy-duty vehicles and would therefore result in slightly lower predicted road-traffic noise levels than those presented

in this report. As such, the results herein represent a worst-case scenario, and no further modelling is necessary.

9 Impact of Noise from the Proposed Development

9.1 DMRB Assessment of Daytime Road Traffic Noise

9.1.1 The calculated daytime road traffic sound level at the worst affected NSR based on the 2026 AAWT traffic flows including development traffic is 58 dB(A). The 2026 do minimum scenario results in a daytime road traffic sound level of 56 dB(A). Being a change of 2 dB this constitutes a **minor impact** in the short term.

9.1.2 Based on the layout and traffic data provided, an increase in daytime road traffic noise as a result of the operation of the proposed development should not give rise to unacceptable noise impact at the nearest dwellings.

9.2 BS 4142 Assessment of Conservative Hourly HGV movements

9.2.1 The sound level of 5 No. HGV movements within an hour at the NSR is summarised in Table 7.

BS 4142:2014

9.2.2 A BS 4142 noise impact assessment of HGV movements has been undertaken in order to assist in assessing the potential noise impact at the identified NSR closest to the proposed development site during an hour period. Predicted noise contours for this scenario are provided in **Appendix 8**.

The following BS 4142 assessment has only considered the daytime impact (between 07:00-23:00hrs) as the proposals only include daytime operations. Noise from HGVs will be comparable in character to that of the existing noise climate at the NSRs that is attributable to existing road traffic and should not contain tonal components or impact noise that could be perceptible at the NSRs. As the identified worst-case NSR is located where the HGVs will simply be driving past, no acoustic feature correction has been applied.

9.2.3 Table 7 details the results of the initial assessment of noise associated with HGV movements over an hour in the absence of any additional noise mitigation measures incorporated into the layout of the site considered in this assessment and identifies a **low impact**. The results show that the rated sound level exceeds the background sound level by no more than 2 dB which, in the context of the site, is an indication of a low impact. Whilst CC's standard BS 4142 noise criterion is for noise

rating levels to not exceed background, BS 4142:2014+A1:2019 recommends that a difference of 1 -4 dB over background may be considered a low impact within the context of the site.

9.2.4 The worst affected façade of the NSR on Leconfield Street is the northwest façade overlooking the access road. It is noted that the one window on this elevation appears to be unopenable, as well as being at mid-height up the building, indicative of a stairwell window. The windows on the southwest and northeast elevations of the NSR which are likely to be habitable room windows receive HGV sound levels 3 dB lower than the northwest stairwell window.

Table 7: BS 4142:2014 assessment of hourly HGV movements

NSR Reference	Background Sound Level $L_{A90,15min}$	Specific Sound Level dB $L_{Aeq,1hr}$	Acoustic Feature Corrections dB	Rating Level (including corrections dB)	Difference between Rating Level and Background Sound Level	Initial Estimate of Impact
NSR	51 (NML4A)	53	+0	53	+2	Low impact

10 Outline Recommended Mitigation Measures

Noise Level Limits

10.1 The final use of any proposed noise generating areas of any new development associated with the project is not known at this stage and consequently, the associated potential noise impact cannot be readily and reliably established, predicted and assessed. Therefore, in line with CC's standard noise criteria, we recommend that the following outline cumulative noise rating level limits should not be exceeded in the daytime.

10.2 Table 8 outlines the cumulative noise rating level limits based on not exceeding background sound levels measured at the measurement positions in Table 2 which are representative of the background sound levels at the NSRs presented below.

Table 8: Outline recommended daytime cumulative noise rating level limits for new plant, equipment and operational activities

NSR	Outline Recommended Noise Rating Level Limit, dB $L_{Ar,1hr}$
Dwellings on Threaplands	42 (NML2B)
Dwellings on Sanderson Park	40 (NML2A)

NSR	Outline Recommended Noise Rating Level Limit, dB $L_{Ar,1hr}$
Dwellings on Heather Bank	42 (NML1)
Dwellings on Heatcote Park	
Rear of Dwellings on Bowthorn Road	43 (NML3)
Rear of Dwellings on Leconfield Street and Furnace Court	50 (NML4A)

10.3 It must be noted that the daytime limits above are;

- cumulative and apply to operational noise (excluding traffic) from the development as a whole, and some apportionment of the noise limits ought to be applied to each unit where necessary.
- are absolute 'rating' levels, and must therefore include any necessary corrections for characteristics such as tonality, impulsivity, intermittency in accordance with BS4142.

10.4 Any deviation from the outline recommended daytime noise level limits ought to be justified in full, within the context of the wider development and surrounding area and its existing noise climate, and account for cumulative noise impact from new development and any existing significant sources of noise.

10.5 For the night, existing background sound levels are low, and therefore, any noise from fixed plant, equipment and machinery that may be required to operate at night in any area of the site must also be low to ensure that it does not result in an adverse and unacceptable noise impact on the amenity of existing and proposed noise sensitive receptors within the site.

Reduction and Management of Noise

10.6 In order to further minimise noise emission from the site the following outline measures should be considered to secure the viability of the development;

- There should be no external tannoys in any new premises/uses except in emergencies.
- Use of electrically powered external mobile plant and equipment.
- Broadband (white noise) reverse warning alarms (i.e. not tonal bleepers that are most common);
- un/loading activities are carried out internally, or via docking bays;
- the movement of materials externally is carried out carefully, and diligently, and are not dropped or banged to avoid generating significant levels of impact type noise.

- all plant and equipment should be appropriately maintained and be located away from existing dwellings are far as reasonably practicable.

11 Conclusions

11.1 Miller Goodall Ltd has on behalf of Morgan Sindall Construction Ltd, undertaken a noise assessment in connection with the planning application for the proposed development at Plots 1, 9 and 12 at Leconfield Industrial Estate, Cleator Moor, Copeland, CA25 5QB.

11.2 The site falls within the administrative boundary of Cumberland Council (CC) who have requested a noise assessment be submitted in connection with the application to ensure that a reasonable degree of amenity is capable of being secured for both existing nearby, and proposed noise-sensitive areas of the development from both existing and proposed noise-generating areas of the site and wider area.

11.3 Noise surveys have been undertaken at locations representative of existing dwellings nearest to the proposed development that would be most exposed to any noise associated with the proposals. Following updated traffic flow data and the inclusion of the Brannans Plot 1 building within this application, background sound levels where surveyed again in 2024 to verify the 2021 background sound level data.

11.4 Potential road traffic noise emissions from the access road off of Leconfield Street have been predicted based on updated traffic data and using computer noise modelling which has then been assessed against a range of guidance, standards and policies.

11.5 The assessment found that the predicted increase in noise levels attributable to proposed new access roads should not result in an adverse or unacceptable noise impact on the amenity of existing or proposed noise-sensitive receptors.

11.6 As the end users and therefore exact details of the potential uses for the units are unknown, full details of the location, number, type and operating hours of any fixed plant, equipment, machinery or operational activities cannot be readily established and assessed.

11.7 Therefore, to safeguard the amenity of existing noise-sensitive receptors and ensure the viability of the development, a collection of outline control measures have been provided that aim to minimise potential noise emission from the site. These measures include noise management recommendations and noise level limits.

11.8 Provided appropriate noise control measures are incorporated in the use of the site, an acceptable degree of residential amenity should be secured at the noise-sensitive receptors.

11.9 Following the issue of updated traffic data and minor layout amendments in October 2025, it is confirmed that the predicted traffic flows are lower than those modelled in the February 2025 assessment. The results, therefore, represent a conservative worst-case position, and all findings, mitigation recommendations, and noise level limits remain valid. The proposed development continues to be acceptable in noise terms.

APPENDICES

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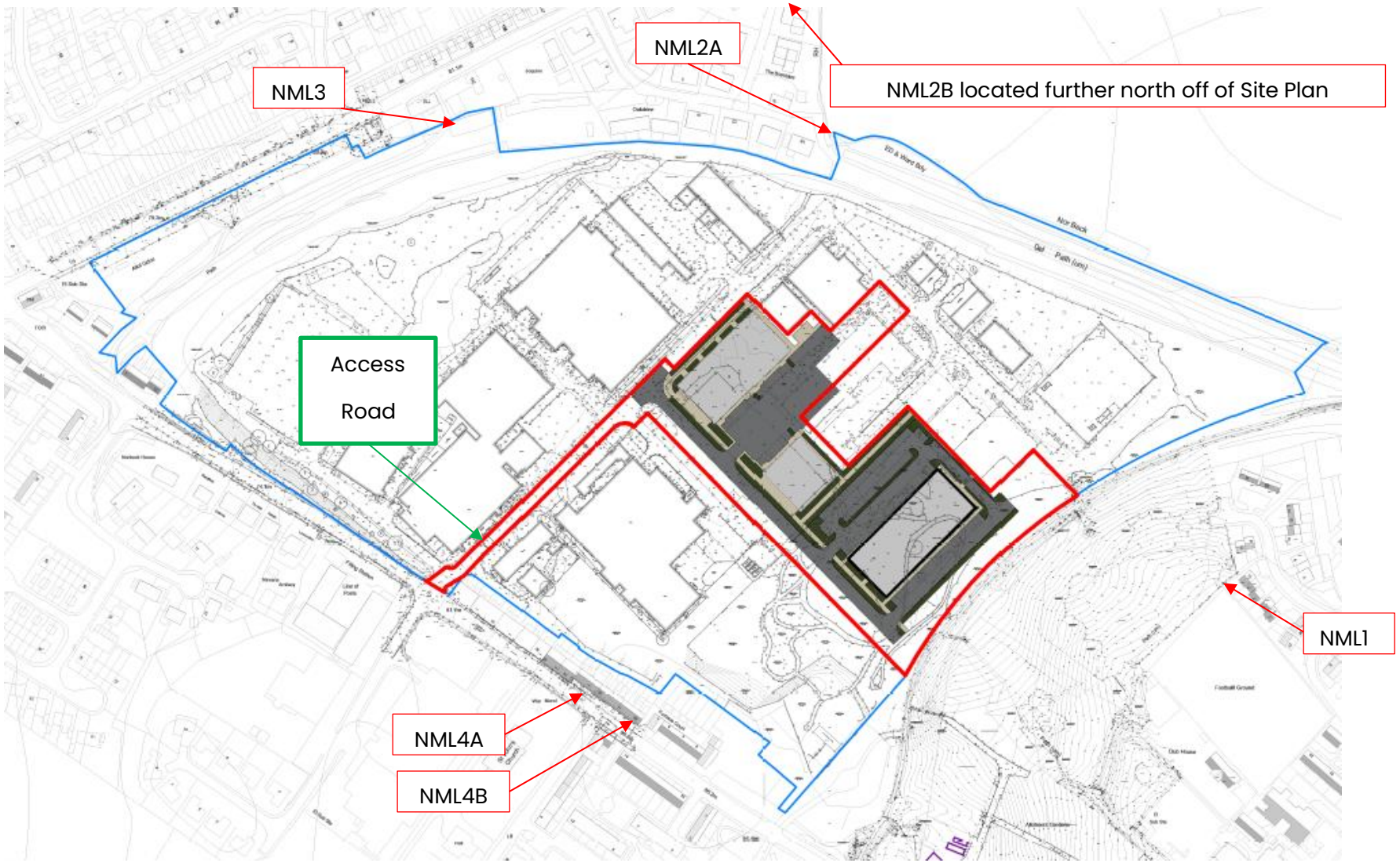
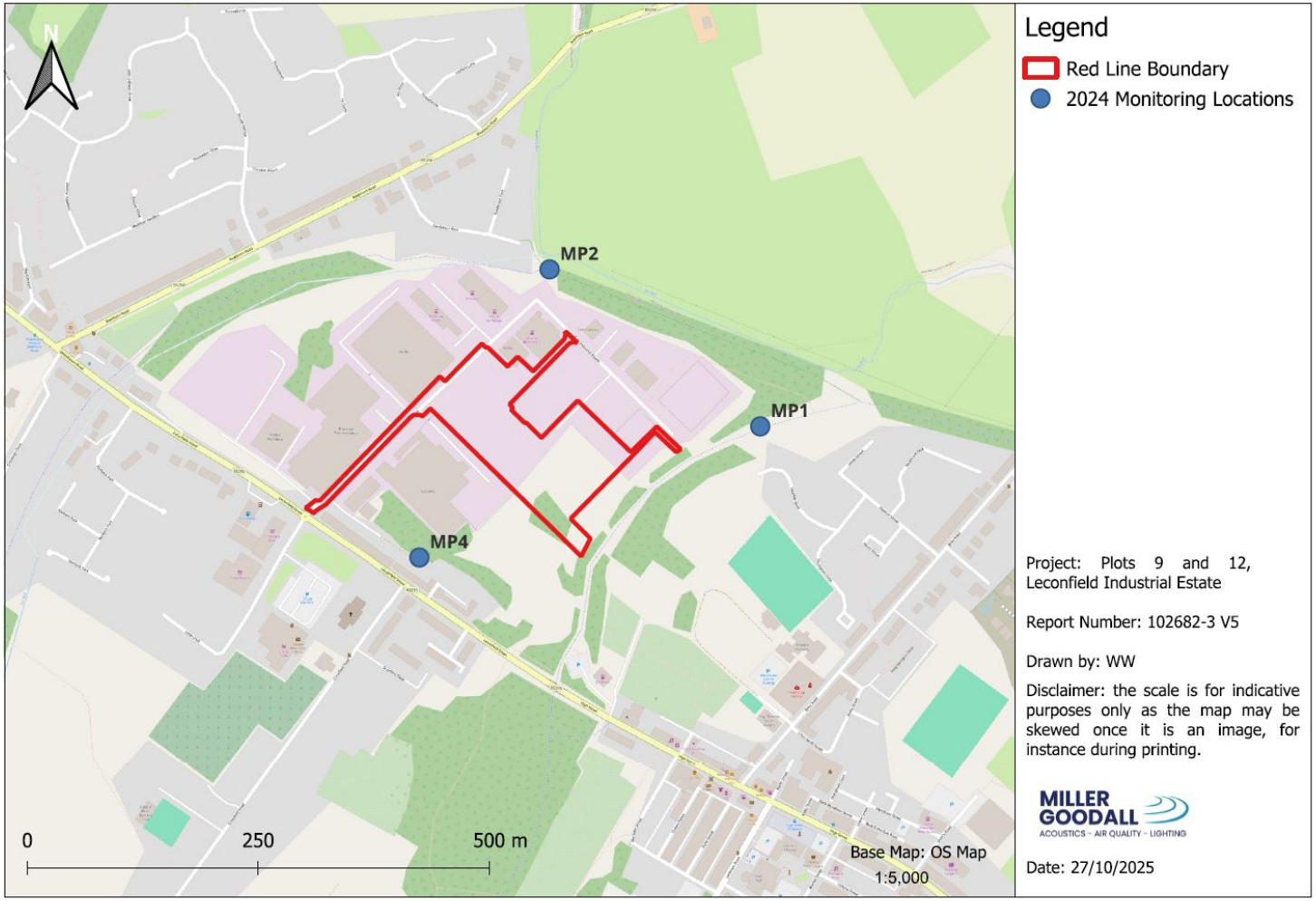
Appendix 1: Site Location and 2021 Monitoring Positions based on Previous Redline Boundary



Appendix 2: Updated Redline Boundary and 2024 Monitoring Locations



Appendix 3: Planning Policy, Acoustic Standards and Guidance

Noise Policy Statement for England

The Noise Policy Statement for England (NPSE[11]), 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*
> - *where possible, contribute to the improvement of health and quality of life*."

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.

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*".

Importantly, the NPSE goes on to state:

> "*This does not mean that such adverse effects cannot occur*".

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:

[11] Noise Policy Statement for England, Defra, March 2010

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

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.

National Planning Policy Framework

The National Planning Policy Framework (NPPF[12]) initially published in March 2012, was updated most recently in December 2024. One of the documents that the NPPF replaces is Planning Policy Guidance Note 24 (PPG 24) "Planning and Noise"[13].

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 protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."*

At par. 187 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…"*

[12] National Planning Policy Framework, Ministry of Housing, Communities and Local Government, December 2024

[13] Planning Policy Guidance 24: Planning and Noise, DCLG, September 1994

Par. 198 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; …"*

Par. 200 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."*

World Health Organisation (WHO) Guidelines for Community Noise 1999

The WHO Guidelines 1999 recommends that to avoid sleep disturbance, indoor night-time guideline noise values of 30 dB L_{Aeq} for continuous noise and 45 dB $L_{AF,max}$ for individual noise events should be applicable. It is to be noted that the WHO Night Noise Guidelines for Europe 2009[14] makes reference to research that indicates sleep disturbance from noise events at indoor levels as low as 42 dB $L_{AF,max}$. The number of individual noise events should also be taken into account and the WHO guidelines suggest that indoor

[14] WHO Night Noise Guidelines for Europe 2009

noise levels from such events should not exceed approximately 45 dB $L_{AF,max}$ more than 10 – 15 times per night.

The WHO document recommends that steady, continuous noise levels should not exceed 55 dB L_{Aeq} on balconies, terraces and outdoor living areas. It goes on to state that to protect the majority of individuals from moderate annoyance, external noise levels should not exceed 50 dB L_{Aeq}.

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

BS 4142:2014+A1:2019[15] 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.

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).

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.

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,*

[15] BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound

- *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.*

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.*

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.

Possible LOAEL and SOAEL Noise Standards

It is acknowledged that the NPSE and the Planning Practice Guidance both advise caution when attempting to set objective standards in relation to LOAEL and SOAEL that may be applicable to a new development.

That said, the guideline values for internal noise within the WHO documents are set at the level of the lowest adverse health effect (the critical health effect) and as such, the values could form the basis of the LOAEL as referenced in the NPSE and PPG. Targeting the WHO guideline levels as the LOAEL should, therefore, provide a robust basis for assessment. No levels are provided within the WHO guidance that may be directly applicable to the SOAEL and any such threshold levels will, as indicated in the above guidance, vary depending on the specific circumstances of the development and the noise climate in which it is located.

With reference to external noise levels in gardens, the WHO lower guideline value of 50 dB L_{Aeq} during the day is intended to protect the majority of people from moderate annoyance and could, therefore, equate to the LOAEL. The upper guideline value of 55 dB L_{Aeq} is intended to protect the majority of people from serious annoyance and whilst this does not necessarily imply that this guideline value would equate to the SOAEL, it would be reasonable to suggest that the SOAEL might occur at a level at or above the guideline value of 55 dB $L_{Aeq.}$

Where an assessment of noise impact to BS 4142:2014+A1:2019 is undertaken, a Rating Level that is 10 dB or more above the prevailing Background Sound Level (BSL) could be indicative of the SOAEL, depending on the context. BS 4142:2014+A1:2019 does not provide guidance on what may constitute the LOAEL but suggests that a Rating Level that is 5 dB or more above the BSL could result in an adverse impact with a Rating Level at or below the BSL indicative of a low likelihood of adverse impact, again depending on the context. The LOAEL could, therefore, fall somewhere between 0 and + 5 dB above the BSL.

Calculation of Road Traffic Noise and Design Manual for Roads and Bridges

With respect to changes in road traffic noise levels, the documents 'Calculation of Road Traffic Noise' (CRTN)[16] and the 'Design Manual for Roads and Bridges (DMRB)[17] which was updated in November 2011 are both relevant. Both of these documents contain guidance on predicting and assessing changes in road traffic noise due to factors such as increased traffic volumes, changes to the local road network, etc.

Guidance and a methodology for calculating changes in road traffic noise are detailed in CRTN. This methodology combines data on road traffic flows, mean traffic speeds and traffic composition in terms of percentage of Heavy Goods Vehicles (HGV), road and site layouts in order to calculate and predict road traffic noise at a selected location. A methodology for the calculation of hourly road traffic noise is also presented. The $L_{A10(18\ hour)}$ parameter has historically shown a good correlation with community response to road traffic noise and is often referred to as the 'UK traffic noise index'.

DMRB Vol 11 Section 3 Part 7 is accepted as the standard methodology within the United Kingdom for evaluating the noise impacts of road traffic resulting from road projects. DMRB allocates an assessment method according to risk, the process of which utilises 3 levels of assessment:

i. Scoping;

ii. Simple;

iii. Detailed.

[16] Calculation of Road Traffic Noise, DoT, 1988

[17] Design Manual for Roads and Bridges, Volume 11 Section 3 Environmental assessment techniques, Part 7 HD 213/11 Revision 1, Noise and vibration, 2011

The assessment approach is designed to be proportionate to minimise unnecessary work, the level of assessment required dependant on the potential for impacts to occur. For example, a detailed assessment may be appropriate if the daytime noise level exhibits a permanent change in magnitude as a result of the new road scheme of 1 dB $L_{A10(18\ hour)}$ in the short term (i.e. the opening year) or a 3 dB $L_{A10(18\ hour)}$ change in the long term (typically 15 years after opening). A change in road traffic noise of 1 dB $L_{A10(18\ hour)}$ in the short term is the smallest that is considered perceptible; a change of 3 dB $L_{A10(18\ hour)}$ change in the long term is considered perceptible.

This guidance provides a classification of magnitude, in terms of changes in road traffic noise, as presented in Tables 3.1 and 3.2 of the document, reproduced below as Table 9 and Table 10.

Table 9: DMRB classification of magnitude of noise impacts in the short term

Change in Noise Level dB $L_{A10(18\ hour)}$	Magnitude of Noise Impact
0	**No change**
0.1 – 0.9	**Negligible**
1.0 – 2.9	**Minor**
3.0 – 4.9	**Moderate**
5+	**Major**

Table 10: DMRB classification of magnitude of noise impacts in the long term

Change in Noise Level dB $L_{A10(18\ hour)}$	Magnitude of Noise Impact
0	No change
0.1 – 2.9	Negligible
3.0 – 4.9	Minor
5.0 – 9.9	Moderate
10+	Major

According to the guidance, a change in noise level of 1 dB $L_{A10(18\ hour)}$ is equivalent to a 25% increase or 20% decrease in traffic flow (assuming other factors remain unchanged). A change of 3 dB $L_{A10(18\ hour)}$ is equivalent to a 100% increase or 50% decrease in traffic flow.

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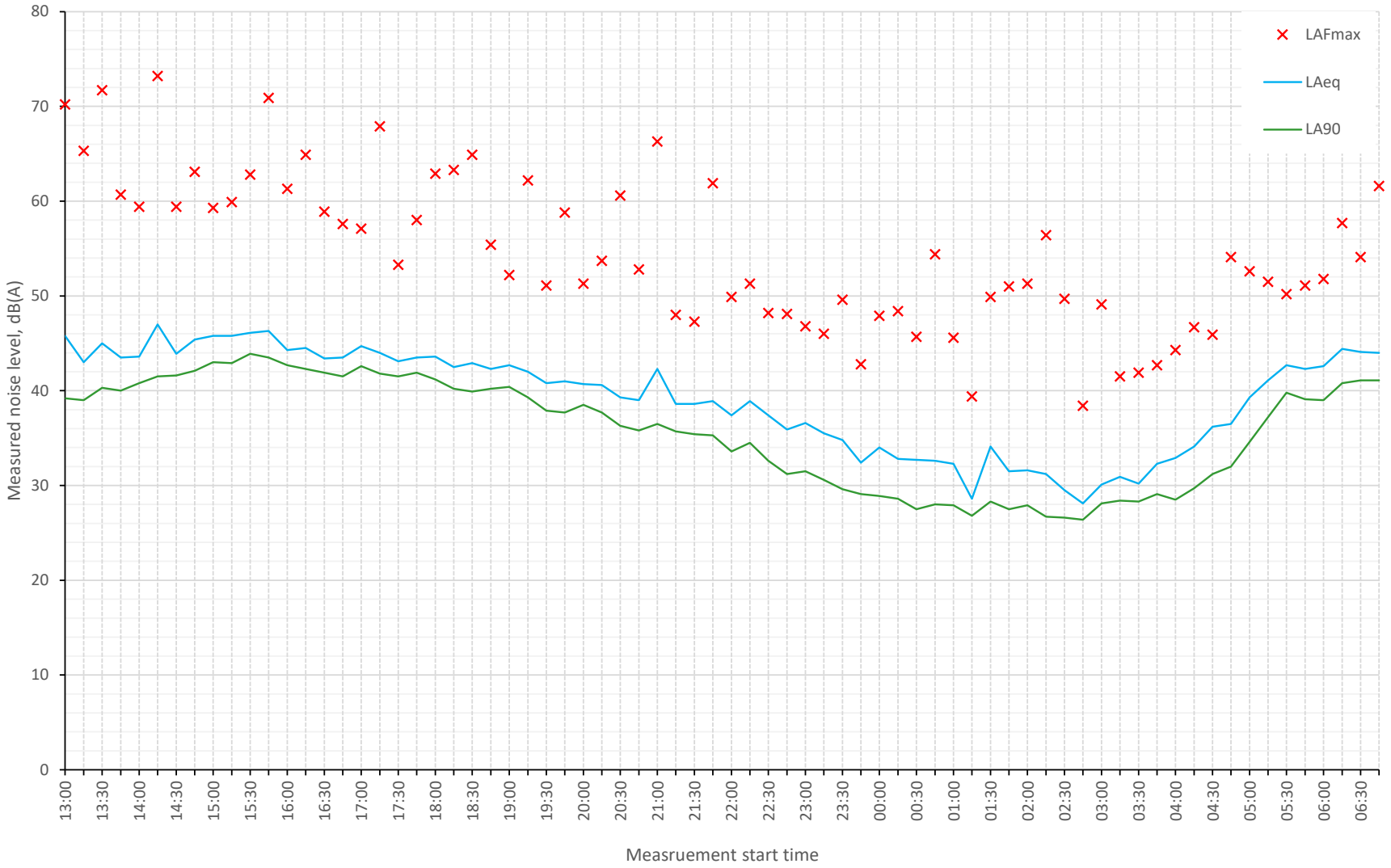
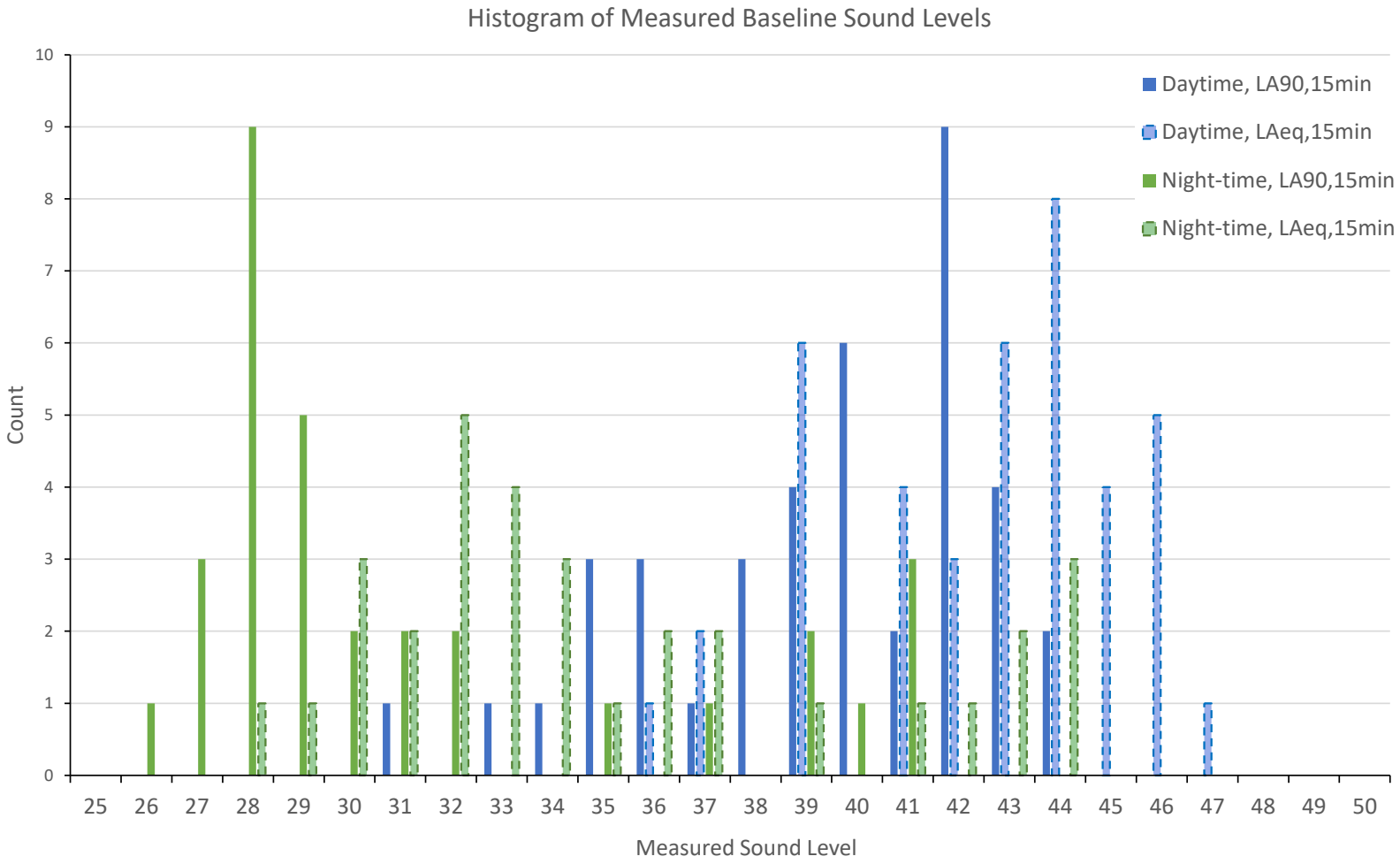
Appendix 4: Time-level history, NML1



Appendix 5: Statistical Analysis of Measured Sound Levels, NML1



Appendix 6: Noise Survey Measurement Data, NMl2A-NML4B

Description	Start Time	Elapsed Time (min:sec)	L_{AFmax} (dB)	L_{Aeq} (dB)	L_{AF10} (dB)	L_{AF90} (dB)	Comments
NML2A	13:35	15:00	68.6	47.3	47.3	40.4	Road traffic. Occasional vehicle on Area 1 access Road
	14:42	15:00	62.3	45.7	47.2	40.1	
	15:43	15:00	67.4	45.4	47.0	42.9	
	17:09	14:04	57.2	43.3	46.0	39.0	
	17:46	14:24	58.6	43.2			
NML2B	16:50	14:35	73.4	59.3	64.8	42.1	Road traffic
	17:26	14:52	73.4	59.8			
NML3	13:55	15:00	53.8	45.5	47.5	42.8	Road traffic. Faint steady plant at nearby unit.
	15:10	15:00	56.8	46.2	48.0	43.8	
	16:01	14:56	56.6	45.6	47.2	43.6	Road traffic
NML4A	14:16	15:00	59.6	52	52.9	51.1	Steady fixed plant at rear of Capital Aluminium Extrusions Ltd. Distant Road traffic.
	15:29	10:00	59.7	52.2			
NML4B	14:32	04:20	68.2	56.6	58.1	55.2	

Appendix 7: Traffic data

Traffic Data for Existing and Proposed Access Road

Posted Speed Limit	Link Name	2019 Base Year			2026 Site Generated Traffic		
		AAWT	HGV	HGV %	AAWT	HGV	HGV %
30 mph	R13 - Site A Site Access	1058	26	2.6	562	55	9.8

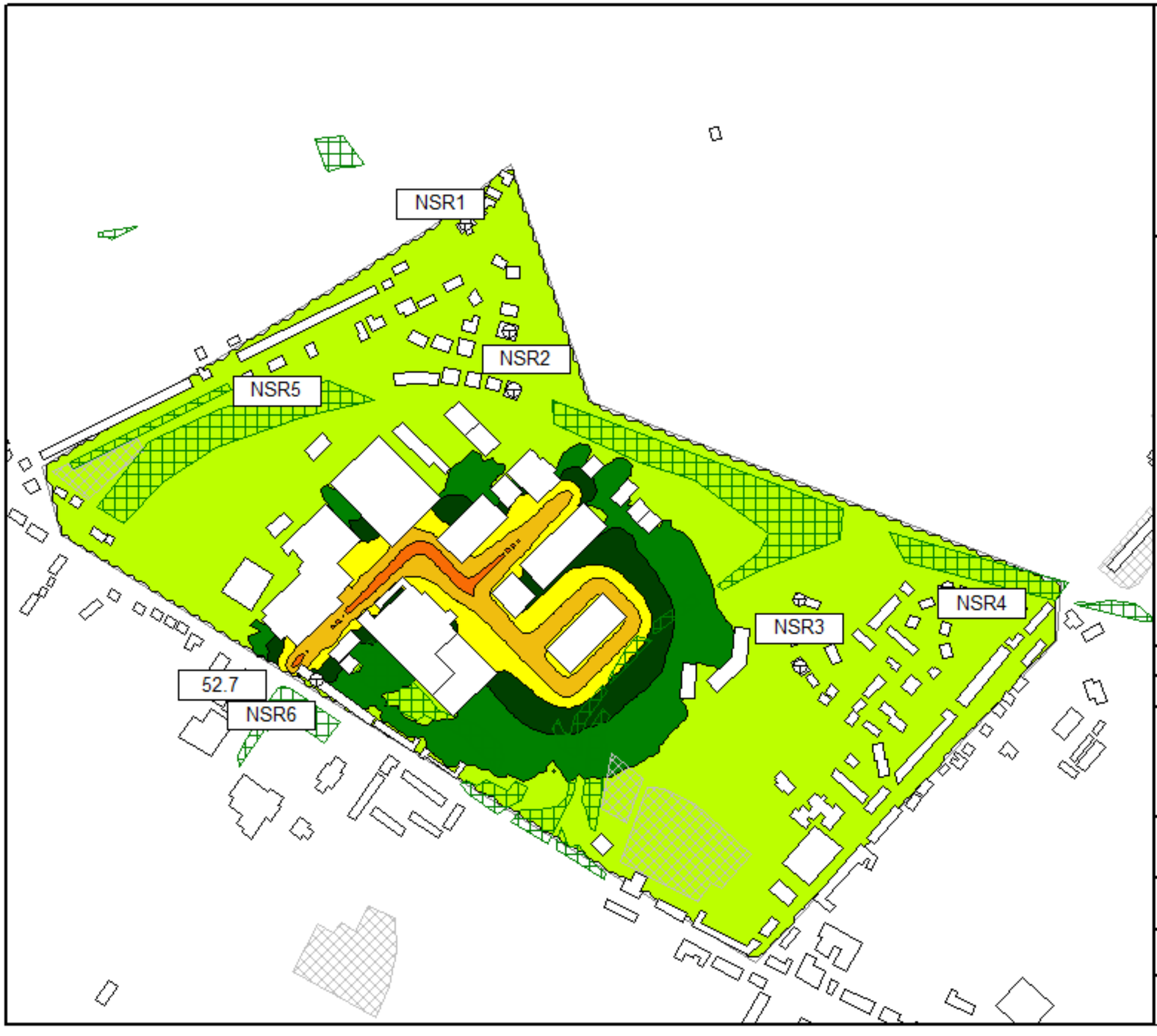
Access Road- AAWT Traffic Flows Baseline 2019

Highway Link			AAWT (06:00-24:00 Hours)										
ID	Name	Posted Speed Limit	2019 Base				Proposed Development				Percentage Increase as a result of the Proposed Development		
			Total Vehicles	Light Vehicles	Heavy Vehicles	% Heavy Vehicles	Total Vehicles	Light Vehicles	Heavy Vehicles	% Heavy Vehicles	Total Vehicles	Light Vehicles	Heavy Vehicles
R13	Site A site access	30mph	1,058	972	26	2.6%	562	507	55	9.8%	53.1%	52.1%	211.0%

Access Road- AAWT Traffic Flows 2026

Highway Link			AAWT (06:00-24:00 Hours)										
ID	Name	Posted Speed Limit	2026 Do Minimum				2026 With Development				Percentage Increase as a result of the Proposed Development		
			Total Vehicles	Light Vehicles	Heavy Vehicles	% Heavy Vehicles	Total Vehicles	Light Vehicles	Heavy Vehicles	% Heavy Vehicles	Total Vehicles	Light Vehicles	Heavy Vehicles
R13	Site A site access	30mph	1118	1089	29	2.6%	1680	1596	85	5.0%	50.2%	46.5%	188.9%

Appendix 8A: Noise Model Graphic of Conservative Hour of HGV Movements



Miller Goodall Ltd
Ashworth House
Deakins Business Park
Egerton
Bolton
BL7 9RP
Tel: 01204 596166
E-mail: info@millergoodall.co.uk
www.millergoodall.co.uk

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Rev.	Date	Purpose	Drawn By	Approved By
2	17/02/2025	V2	WW	JL

MILLER GOODALL
ACOUSTICS - AIR QUALITY - LIGHTING

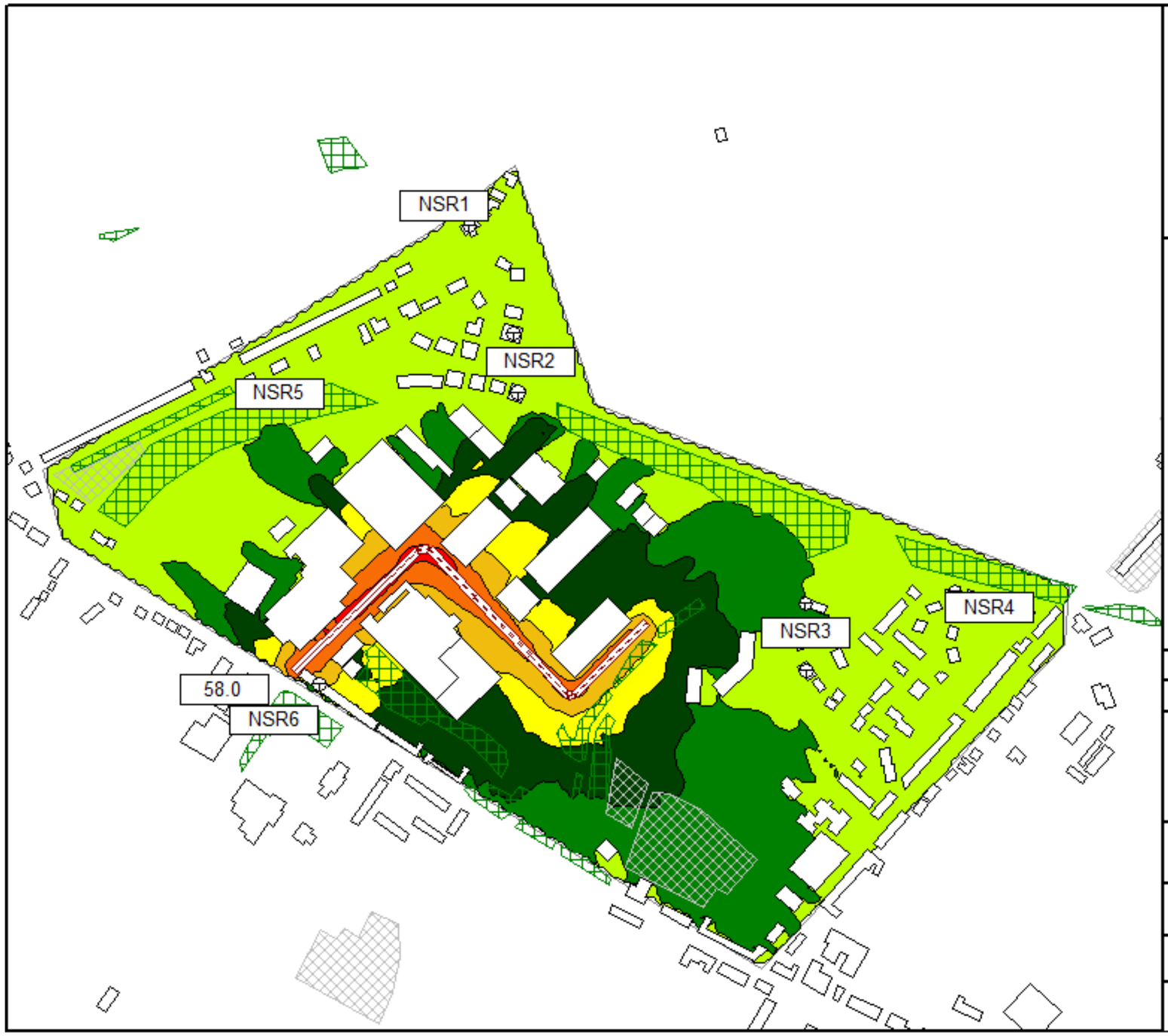
Project:
Leconfield Industrial Estate, Cleator Moor

Client:
Morgan Sindall Construction Ltd.

Conservative HGV LAeq,1hr

Report Number: 102682-3

Appendix 8B: Noise Model Graphic of 2026 with Development Scenario



Miller Goodall Ltd
Ashworth House
Deakins Business Park
Egerton
Bolton
BL7 9RP
Tel: 01204 596166
E-mail: info@millergoodall.co.uk
www.millergoodall.co.uk

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Rev.	Date	Purpose	Drawn By	Approved By
2	17/02/2025	V2	WW	JL

MILLER GOODALL
ACOUSTICS - AIR QUALITY - LIGHTING

Project:
Leconfield Industrial Estate, Cleator Moor

Client:
Morgan Sindall Construction Ltd.

Predicted Total AAWT Noise

Report Number: 102682-3

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.

$L_{A10(18\ hour)}$ Often referred to as the UK road traffic noise index, this is the arithmetic average of the values of L_{A10} hourly for each of the 18 one hour periods between 06:00 and 00:00.

NOEL No observed effect level: the level of noise exposure below which no effect at all on health or quality of life can be detected.

LOAEL Lowest observed adverse effect level: the level of noise exposure above which adverse effects on health or quality of life can be detected.

SOAEL Significant observed adverse effect level: the level of noise exposure above which significant adverse effects on health or quality of life can be detected.


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