NOISE ASSESSMENT FOR ENVIRONMENTAL PERMITTING

Sims Group UK Limited, Rondin Road, Manchester, M12 6BF

794-ENV-EPC-21048-ACO
Version 01
07 June 2024

1 SIGN-OFF

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
00	Noise Impact Assessment	Jonty Stewart, MSc MIOA (Associate Director – Acoustics)	Peter Kowalczuk, MIOA (Principal Consultant – Acoustics)	Pam Lowery MEng MSc MIOA PIEMA (Associate Director – Acoustics)	24 May 2024
01	Minor revisions further to client comments	Jonty Stewart, MSc MIOA (Associate Director – Acoustics)	Pam Lowery MEng MSc MIOA PIEMA (Associate Director – Acoustics)	Pam Lowery MEng MSc MIOA PIEMA (Associate Director – Acoustics)	7 June 2024

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2 SYNOPSIS

2.1 The RPS Acoustics Team (RPS) has been appointed by Sims Group UK Limited (Sims) to undertake onsite noise monitoring and assessment to provide a noise impact assessment required as part of an application for an Environmental Permit (EP) at the site in Rondin Road, Manchester.

2.2 It is understood that the existing Standard Rules Permit EPR/EB3803ME is to be varied to a bespoke waste activity permit that allows the operation of an Authorised Treatment Facility (ATF) for the depollution of End of Life Vehicles (ELVs) and the storage of Waste Electrical and Electronic Equipment (WEEE), in addition to the existing Materials Recovery Facilities (MRF).

2.3 Assessments of the existing and proposed sound emitted from the facility have been carried out in accordance with BS 4142:2014, as amended 2019, which is the cited standard to use in the Environmental Permitting Regulations.

2.4 The results of the assessments show that current and proposed operation of the Sims facility is unlikely to result in adverse effects above the LOAEL and that residential amenity is not likely to be adversely affected. Significant adverse impacts/effects would be avoided.

2.5 Sound from the facility is considered to be suitably mitigated through the application of best available techniques, such that it does not cause an adverse impact.

2.6 Noise emissions from the Sims facility would not be of a magnitude sufficient to give reasonable cause for annoyance and a high general level of protection of the environment as a whole is provided.

3 INTRODUCTION

3.1 The RPS Acoustics Team (RPS) has been appointed by Sims Group UK Limited (Sims) to undertake onsite noise monitoring and assessment to provide a noise impact assessment required as part of an application for an Environmental Permit (EP) at the site in Rondin Road, Manchester.

3.2 It is understood that the existing Standard Rules Permit EPR/EB3803ME is to be varied to a bespoke waste activity permit that allows the operation of an Authorised Treatment Facility (ATF) for the depollution of End of Life Vehicles (ELVs) and the storage of Waste Electrical and Electronic Equipment (WEEE), in addition to the existing Materials Recovery Facilities (MRF).

3.3 RPS has not previously undertaken any noise assessment for this site. The closest noise sensitive receptor (NSR) has been identified as 137 Anthony Close, Manchester M12 5ED, approximately 120 m to the southeast of the site boundary. Future NSRs are currently being constructed by Kellen Homes at a similar distance to the south and southwest of the site.

3.4 Baseline sound data has been compiled from publicly available documentation related to the Kellen Homes residential development being constructed next to the NSR, supplemented by short-term attended measurements taken close to the NSR in the absence of any operational sound from the site.

3.5 Attended measurements of existing plant and operations have been supplemented by measurements of the proposed new plant and operations collected at a similar site (Sims Pepper Road, Leeds). This source data has been used to inform a 3D model of the site and environs to predict operational sound levels at the closest NSR.

3.6 An assessment of the predicted operational sound levels with respect to the compiled baseline sound levels has been undertaken, based on the methodology detailed in British Standard 4142[i].

3.7 This assessment has been based upon relevant operational details of the proposed development provided by the project team. RPS is a member of the Association of Noise Consultants (ANC), the representative body for acoustics consultancies, having demonstrated the necessary professional and technical competence. The assessment has been undertaken with integrity, objectivity and honesty in accordance with the Code of Conduct of the Institute of Acoustics (IOA) and ethically, professionally and lawfully in accordance with the Code of Ethics of the ANC.

3.8 The technical content of this assessment has been provided by RPS personnel, all of whom are members of the Institute of Acoustics (IOA), the UK's professional body for those working in acoustics, noise and vibration. This report has been peer reviewed within the RPS team to ensure that it is technically robust and meets the requirements of our Integrated Management System.

3.9 Technical competence of the personnel involved in this project are summarised in Appendix G

4 ASSESSMENT LOCATION

Site Location and Noise Sensitive Receptors

4.1 The site is located on Rondin Road, Ardwick, Manchester, M12 6BF. The red line boundary of the site can be seen in Figure 4-1 below.

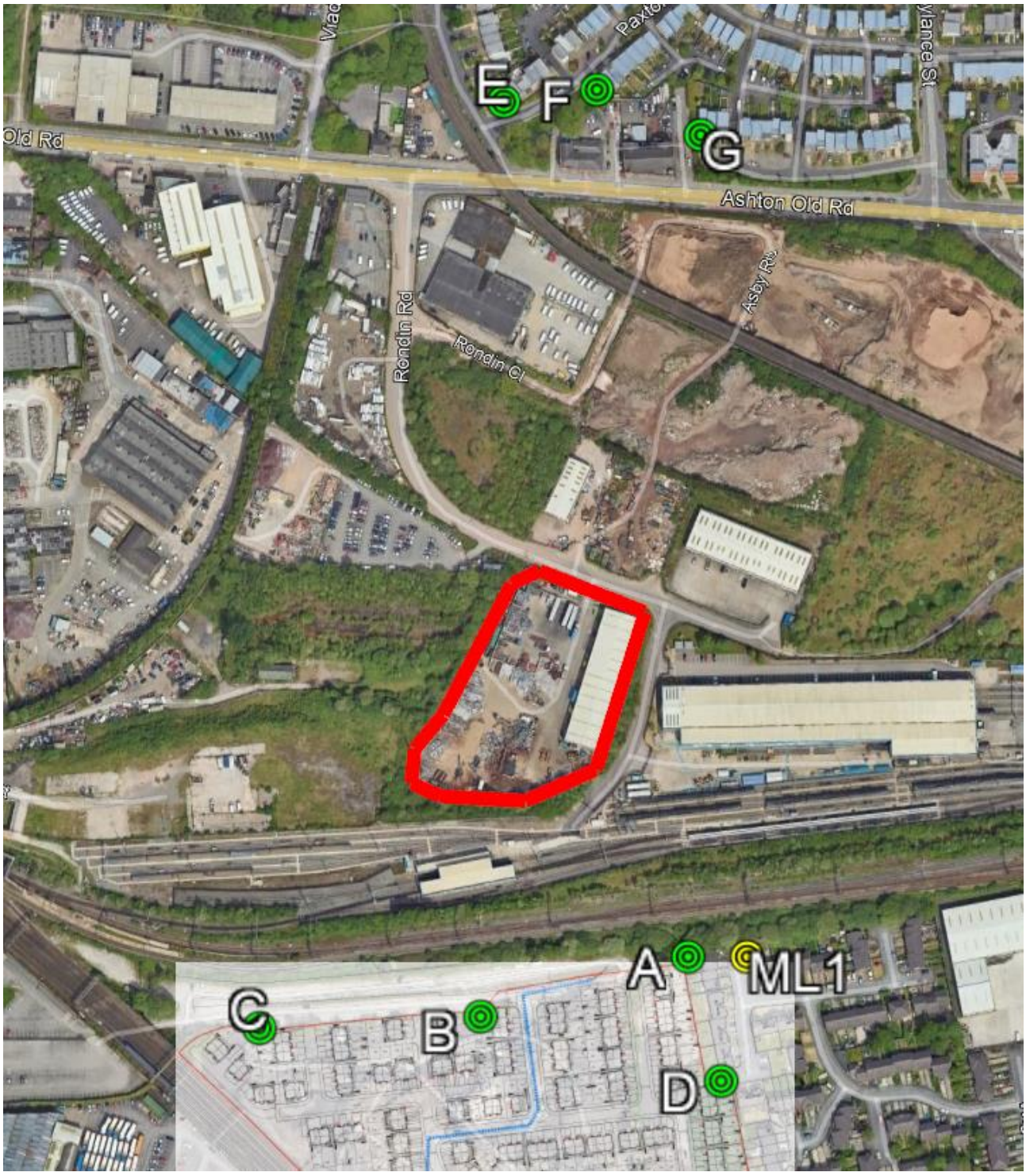


Figure 4-1: Site Boundary and Noise Sensitive Receptors

4.2 The identified existing and most sensitive future NSRs are listed in Table 4-1 and mapped in Figure 4-1.

Table 4-1 Distance of NSRs From Site

Receptor	OS Grid Reference	Approximate distance from site boundary (m)	Intervening ground description
A – 137 Anthony Close	SJ8629497154	120	Scrub and raised railway embankment
B – 80 The Gateway	SJ8617397125	120	Scrub, raised railway embankment and hardstanding
C – 112 The Gateway	SJ8604797119	160	
D – 48 The Gateway	SJ8631097083	190	
E – 40 Paxton Place	SJ8618897645	270	Hardstanding and scrub with a raised, pierced railway viaduct and bituminous roadway
F – 35 Paxton Place	SJ8624197652	280	
G – 35 Wren Way	SJ8630097626	270	Hardstanding, broken ground with raised earthworks and scrub with a raised, pierced railway viaduct and bituminous roadway

4.3 The site operates between 08:00 and 17:00 Monday to Friday, and 09:00 to 12:00 on Saturdays. There is no Sunday operation.

4.4 No sources of vibration that could be felt beyond the site boundary have been identified, so vibration is scoped out of this assessment.

4.5 The closest noise sensitive receptor (NSR A on Figure 4-1) has been identified as 137 Anthony Close, Manchester M12 5ED, approximately 120 m to the southeast of the site boundary, separated by scrubland and railway tracks on a raised embankment.

4.6 Figure 4-2 presents a map of the significant noise sources on site.

Figure 4-2 Locations of noise sources on site

4.7 The old Olympic Freight site immediately to the west of Anthony Close is currently under construction by Kellen Homes, who are creating a development of 272 dwellings known as The Gateway, the proposed layout of which is shown in Figure 4-3.

Figure 4-3: Kellen Homes proposed site layout

4.8 Once construction is complete there will be additional NSRs within the development, the most sensitive of which have been identified by the modelling undertaken as Numbers 48, 80 and 112 The Gateway.

4.9 It is noted that, without mitigation, amenity spaces at these receptors will have significantly more daytime exposure to rail noise than 137 Anthony Close, as evidenced by the DEFRA noise mapping data presented in Figure 4-4. It is understood that Kellen homes will be installing acoustic fencing to protect the properties along the western boundary of the development, but no mitigation is planned for the northern boundary, so none has been incorporated into the model.

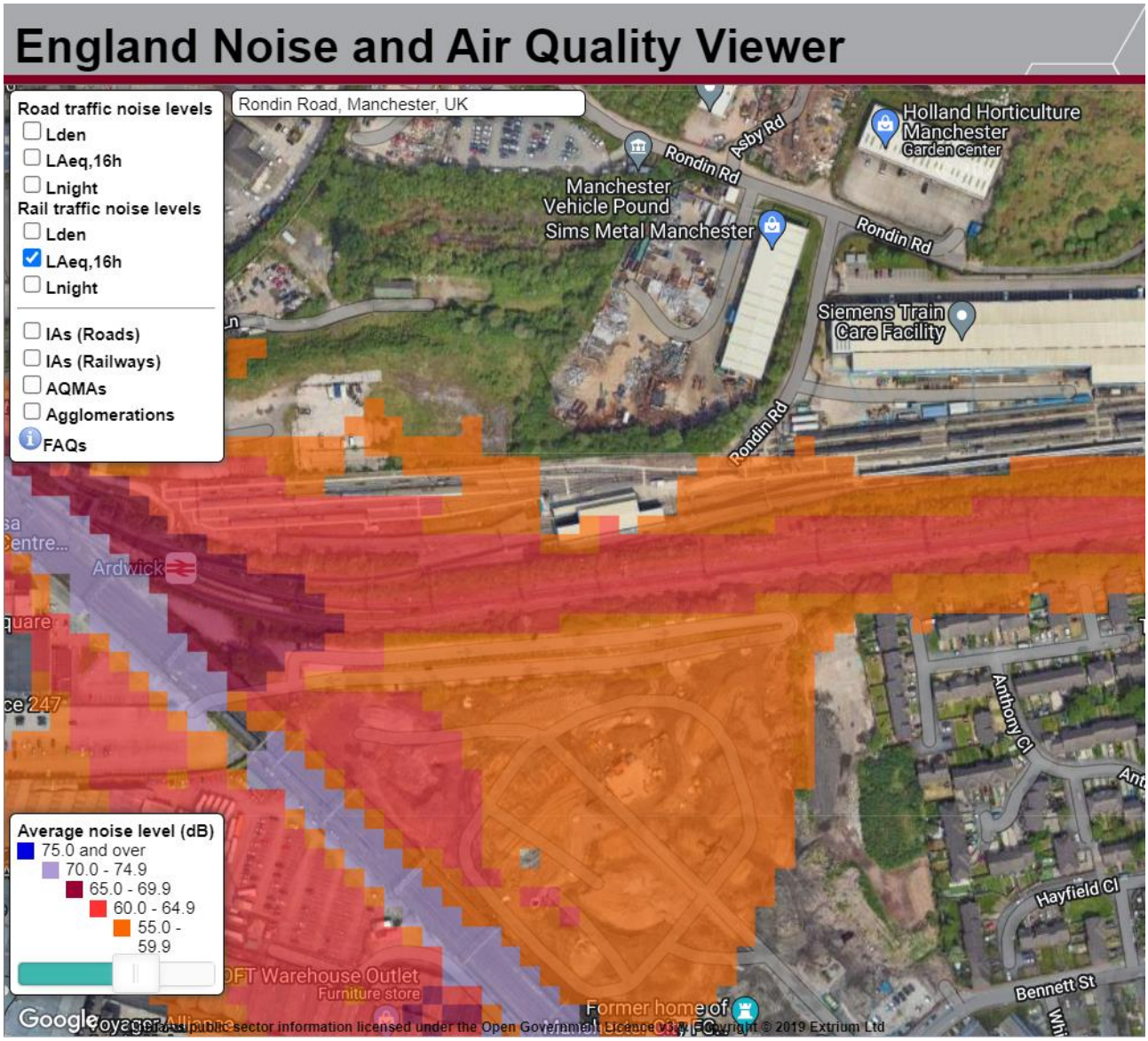


Figure 4-4: DEFRA rail-noise data from www.extrium.co.uk

4.10 Regarding sensitivity, all nearby residential receptors are considered to be of high sensitivity to adverse noise effects.

4.11 It is noted that Receptors E, F and G are expected to be less affected by noise generated by the site due to the increased distance and their location relative to the A635 Ashton Old Road that separates them from the site. In addition, intervening industrial/commercial activity from businesses along Asby Road is likely to mask noise from the site and render its activity indistinguishable from the residual acoustic environment.

4.12 Figure 4-5 presents DEFRA road noise data that confirms the daytime dominance of the A635 as a noise source at the northern receptors. The nature of this traffic noise is more continuous than the rail noise that is dominant at NSRs to the south of the site, and therefore the background sound levels at the northern receptors are expected to be much closer to the associated residual sound levels.

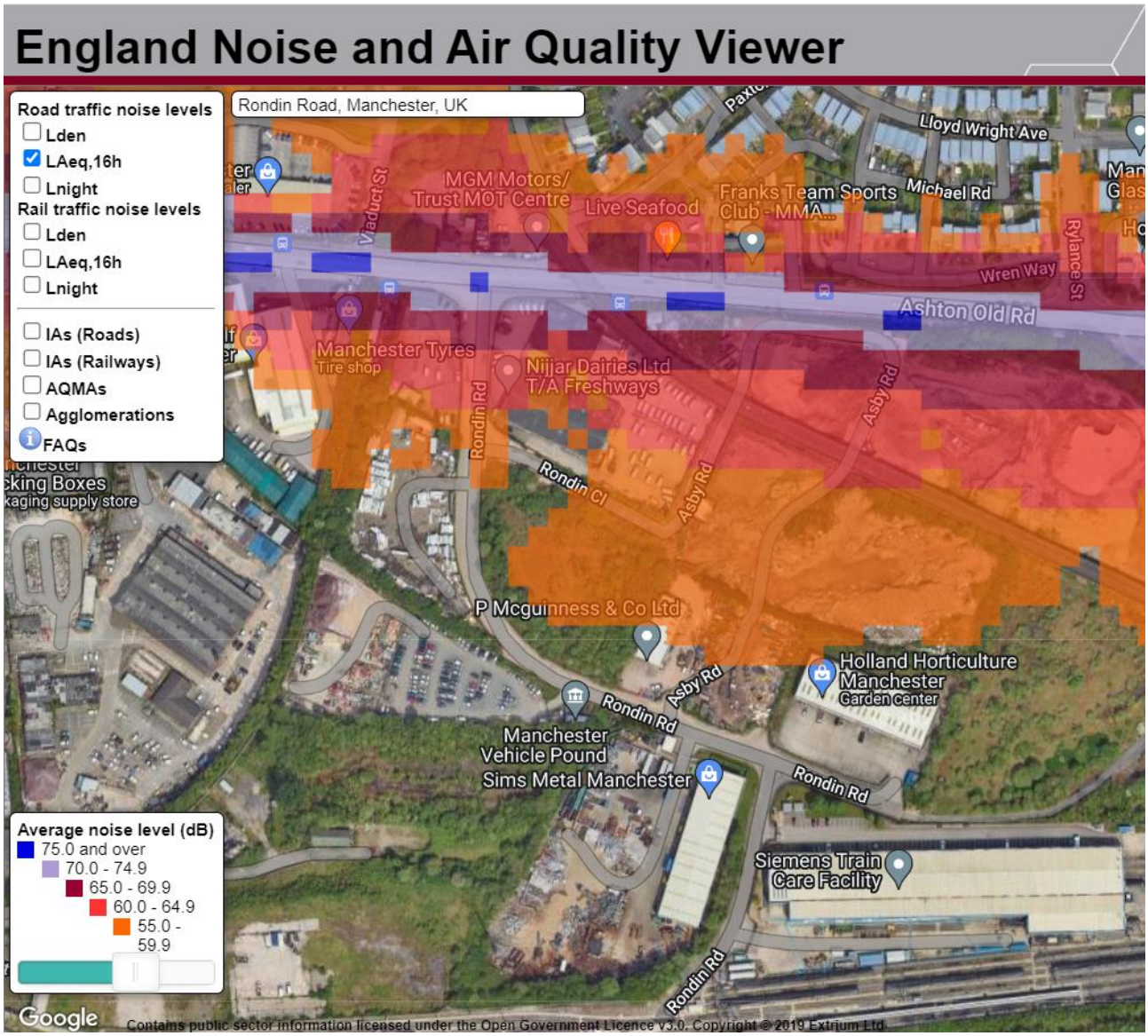


Figure 4-5: DEFRA road-noise data from www.extrium.co.uk

Baseline Noise Monitoring

4.13 Noise monitoring locations considered representative of the identified noise sensitive receptors have been identified as listed below in Table 4-2. Due to the operating times of the site, only daytime baseline conditions have been considered.

4.14 Due to the presence of the railway tracks to the west, the baseline levels across the site are expected to increase from east to west. The identified monitoring locations are therefore considered to be indicative of worst case, with each NSR being represented by a monitoring location to its east.

Table 4-2 Monitoring locations representative of NSRs

Monitoring Location	Monitoring Location Details	Representative of NSR
ML1	Deployed on public land, south from Sims Metal Manchester and east from 137 Anthony Close	**A, B, D**
NMP2	Data accessed from e3p report *50-636-R1-4*	**C**
DEFRA Noise Mapping	The identified NSRs are scoped out of the assessment due to distance to the source and the high existing ambient noise levels due to road traffic noise	**E, F, G**

4.15 The positions of monitoring locations ML1 and NMP2 are presented along with the closest NSR locations in Figure 4-6.

Figure 4-6: Survey measurement locations

4.16 To establish baseline conditions representative of NSRs A, B and D an attended survey was undertaken by RPS at ML1 for two 1-hour periods, 1700 – 1800 on 10th May 2024 and 0700 – 0800 on 11th May 2024. Measurement time periods were selected so that they were out of the working hours of Sims Metal Manchester and to avoid the construction hours of the residential development to the west.

4.17 The microphone was mounted on a tripod at 1.5 m above ground level in a free-field position, at least 3.5 m from any reflecting surface, excluding the ground. A photograph of the measurement location is provided below in Figure 4-7.

Figure 4-7: Survey measurement location ML1

Subjective Assessment of Baseline Acoustic Climate

4.18 During the morning survey period the noise climate was judged to be subjectively ‘quiet’. The main sources of noise audible were noted as constant distant road traffic, occasional airplane fly over, railway traffic noise and natural sound (wind in trees, bird calls).

4.19 During the afternoon survey period the noise climate was judged to be subjectively ‘quiet’. The main sources of noise audible were noted as constant distant road traffic, occasional traffic from Anthony Close, residential noise from the nearby properties, occasional airplane fly over, railway traffic noise and natural sound (wind in trees, bird calls).

5 EQUIPMENT AND METEOROLOGY

5.1 Details of the instrumentation used during the survey are provided in Table 5-1 below. Calibration certificates of the equipment are available upon request. Calibration of the equipment was carried out before and after the measurements with no drift (0 dB) observed.

Table 5-1: Noise Survey Instrumentation

Measurement Location	Make / Model	Internal Reference / Serial Number	Calibration Ref / Start / End	Last Calibration Date
ML1	Rion NL52	#116 / 943367	94.0 / 94.0 / 94.0	14/07/2023
Calibrator	Rion NC-74	#14 / 110118	N/A	01/02/2024

Meteorological Conditions

5.2 During the survey period there were no instances of rain, with wind speeds not exceeding 1 m/s. As such no data has been removed from the subsequent analysis for meteorological conditions.

6 METHODOLOGY

6.1 This section includes details on the primary assessment methodology, BS4142. Additional details of relevant policy, legislation and guidance relevant are summarised in Appendix H.

British Standard 4142:2014+A1:2019

'Methods for rating and assessing industrial and commercial sound'

6.2 BS 4142:2014+A1:2019 primarily provides a numerical method by which to determine the significance of sound of an industrial nature (i.e. the 'specific sound' from the proposed development) at residential NSRs. The specific sound level may then be corrected for the character of the sound (e.g. perceptibility of tones and/or impulses) if appropriate, and it is then termed the 'rating level' whether or not a rating penalty is applied. The 'residual sound' is defined as the ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound.

6.3 The specific sound levels should be determined separately in terms of the $L_{Aeq,T}$ index over a period of T = 1 hour during the daytime (or evening) and T = 15 minutes during the night-time. For the purposes of the Standard, daytime is between 07:00 and 23:00 hours and night-time is between 23:00 and 07:00 hours.

6.4 BS 4142 requires that the background sound levels adopted for the assessment be representative for the period being assessed. The Standard recommends that the background sound level should be derived from continuous measurements of normally not less than 15-minute intervals, which can be contiguous or disaggregated. However, the Standard states that there is no 'single' background sound level that can be derived from such measurements.

6.5 BS 4142 states that measurement locations should be outdoors, where the microphone is at least 3.5 m from any reflecting surfaces other than the ground and, unless there is a specific reason to use an alternative height, at a height of between 1.2 m and 1.5 m above local ground level. However, where it is necessary to make measurements above ground floor level, the measurement position, height and distance from reflecting surfaces should be reported, and ideally measurements should be made at a position 1 m from the façade of the relevant floor if it is not practical to make the measurements at least 3.5 m from the facade.

6.6 With regard to the character correction, paragraph 9.2 of BS 4142:2014+A1:2019 states:

"Consider the subjective prominence of the character of the specific sound at the noise-sensitive locations and the extent to which such acoustically distinguishing characteristics will attract attention."

6.7 The commentary to paragraph 9.2 of BS 4142:2014+A1:2019 suggests the following subjective methods for the determination of the rating penalty for tonal, impulsive and/or intermittent specific sounds:

*"**Tonality***

For sound ranging from not tonal to prominently tonal the Joint Nordic Method gives a correction of between 0 dB and +6 dB for tonality. Subjectively, this can be converted to a rating penalty of 2 dB for a tone which is just perceptible at the noise receptor, 4 dB where it is clearly perceptible, and 6 dB where it is highly perceptible.

Impulsivity

A correction of up to +9 dB can be applied for sound that is highly impulsive, considering both the rapidity of the change in sound level and the overall change in sound level. Subjectively, this can be converted to a penalty of 3 dB for impulsivity which is just perceptible at the noise receptor, 6 dB where it is clearly perceptible, and 9 dB where it is highly perceptible.

NOTE 2 If characteristics likely to affect perception and response are present in the specific sound, within the same reference period, then the applicable corrections ought normally to be added arithmetically. However, if any single feature is dominant to the exclusion of the others then it might be appropriate to apply a reduced or even zero correction for the minor characteristics.

Intermittency

When the specific sound has identifiable on/off conditions, the specific sound level should be representative of the time period of length equal to the reference time interval which contains the greatest total amount of on time. … If the intermittency is readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.

Other sound characteristics

Where the specific sound features characteristics that are neither tonal nor impulsive, nor intermittent, though otherwise are readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied."

6.8 An initial estimate of the impact of the specific sound is obtained by subtracting the measured background sound level from the rating level of the specific sound. In the context of the Standard, adverse impacts include, but are not limited to, annoyance and sleep disturbance. Typically, the greater this difference, the greater is 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.

6.9 Whilst there is a relationship between the significance of impacts determined by the method contained within BS 4142 and the significance of effect described in the NPSE, there is not a direct link. It is not appropriate to ascribe numerical rating / background level differences to LOAEL and SOAEL because this fails to consider the context of the sound, which is a key requirement of the Standard.

6.10 The significance of the effect of the noise in question (i.e. whether above or below SOAEL and LOAEL) should be determined on the basis of the initial estimate of impact significance from the BS 4142 assessment with reference to the examples of outcomes and after having considered the context of the sound. It is necessary to consider all pertinent factors, including:

- the absolute level of sound;
- the character and level of the residual sound compared to the character and level of the specific sound; and
- the sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions, such as:

- facade insulation treatment;
- ventilation and/or cooling that will reduce the need to have windows open so as to provide rapid or purge ventilation; and
- acoustic screening.

Divergence from BS4142

Baseline data

6.11 At the time of assessment, construction on the nearby Kellen Homes site was active and so any long-term survey of the sound climate at the identified NSR would not be representative. After investigation, no suitable long-term proxy survey location was identified due to dominance of other industrial or commercial sources, or variance in the relationship to the railway (increased distance and/or different elevation).

6.12 In the absence of any opportunity to collect usable long-term data, short-term attended measurements were taken at a location representative of the sound climate at the most sensitive existing receptor, NSR A. Worst case was assumed by taking measurements before and after other nearby industrial/commercial sources were inactive.

6.13 These measurements were correlated with data published in the publicly available Noise and Vibration Chapter of the Gateway Environmental Statement, accessed through the Manchester City Planning Portal (Planning Reference CDN/24/0312).

6.14 For that assessment, undertaken and presented in report ref. *50-636-R1-4* by e3p on behalf of Kellen Homes, published 14th July 2022, rail noise measurements were taken at two locations, one of which, NMP2, was a similar distance from the same rail line as NSR A. Excerpts from the report are presented in Appendix C.

7 MEASUREMENT RESULTS AND PREDICTIONS

Baseline Results

7.1 Table 7-1 below provides a summary of baseline sound levels measured at ML1 over the survey period. Time histories of the measurements are presented in Appendix A. The statistical analysis that produced the representative background sound level of 37 dB(A) is presented in Appendix B.

Table 7-1: Summary of Levels at ML1

Daytime (07:00 – 23:00)		Representative Sound Levels	
Range of Residual Sound Levels (dB $L_{Aeq, T}$)	Range of Background Sound Levels (dB $L_{A90, T}$)	Average Residual Sound Levels (dB $L_{Aeq, T}$)	Representative Background Sound Level (dB $L_{A90, T}$)
42 - 68	36 - 43	56	37

Background Analysis

7.2 Figure 7-1 below shows the statistical analysis of the measured L90 data that resulted in the adoption of a representative background sound level of 37 dB(A).

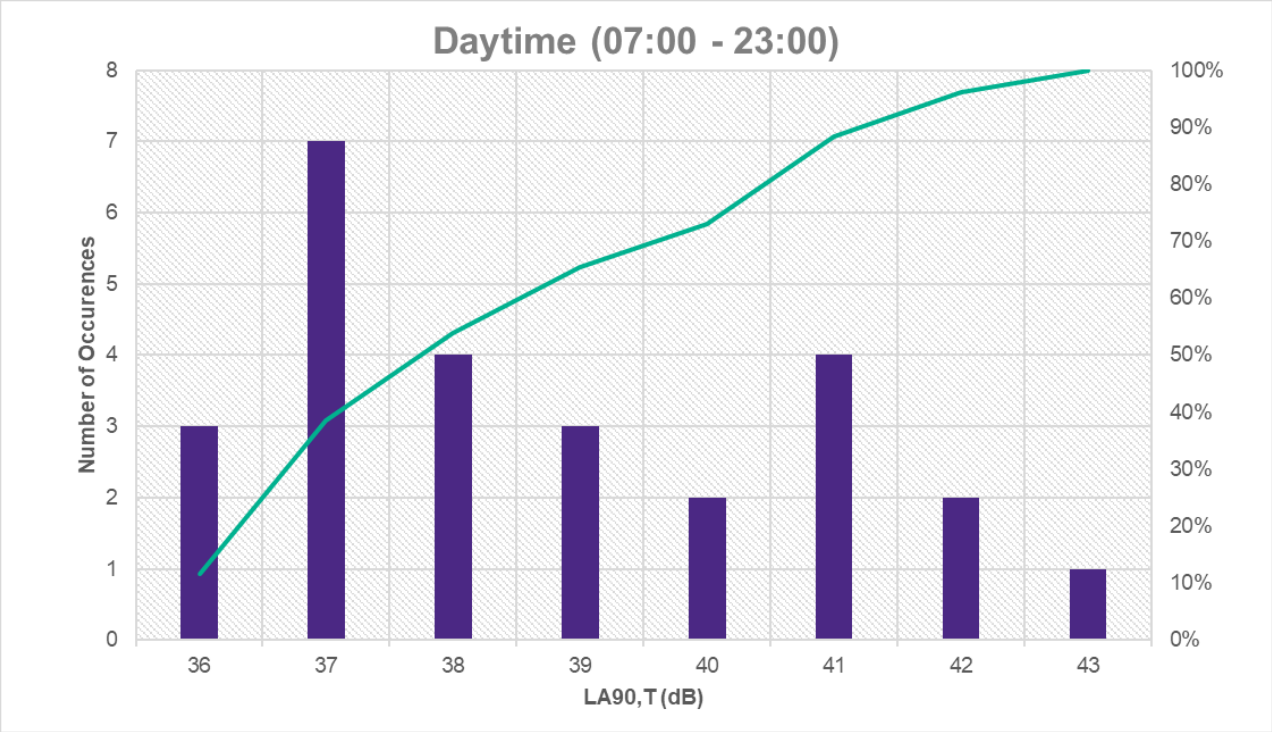


Figure 7-1 Statistical analysis of L_{A90} data

7.3 Table 7-2 below provides a summary of baseline sound levels measured at NMP2, extracted from e3p report *50-636-R1-4* as presented in Appendix C along with a statistical analysis of the background data.

Table 7-2: Summary of Levels at NMP2

Daytime (07:00 – 23:00)		Representative Sound Levels	
Range of Residual Sound Levels (dB $L_{Aeq, 1hr}$)	Range of Background Sound Levels (dB $L_{A90, 1hr}$)	Average Residual Sound Levels (dB $L_{Aeq, 1hr}$)	Representative Background Sound Level (dB $L_{A90, 1hr}$)
54 - 58	40 - 50	56	43

7.4 Sound pressure (L_p) levels of existing noise sources have been measured at the Sims Metal Manchester site in order to inform a 3D sound model and thereby predict specific sound levels at the NSR locations.

Sound Pressure Measurements

7.5 Sound pressure measurements involved the following plant and activities:

- Existing plant currently operating on site: mobile shear, 360 metal handler, tele truck, counterbalance forklift truck with fork and clamp attachment, skid steer, container tilter;
- Activities which involved multiple pieces of plant were also measured: 360 metal handler loading mobile shear and compressing metal, 360 metal handler loading tilted container, lorry tipping load in compound, various forklifts unloading lorry; and
- New proposed plant noise emission levels were taken from a previous survey of a different facility where the plant was already installed, measured on 13th June 2023.

7.6 Specific sound levels for each piece of plant and activities were undertaken on site on 10th May 2024. Measurements were undertaken at various distances from the plant/activity. All measured levels have been distance corrected and converted to sound power level L_w for the purpose of the assessment.

7.7 The noise measurements were made using a Class 1, integrating sound level meter (details in Table 5-1). The microphone was mounted on a tripod 1.5 m above the ground and more than 3.5 m from any other reflecting surfaces. The sound level meter was calibrated to a reference level of 94 dB at 1 kHz before the noise survey and the calibration level was checked on completion. No drift (0.0 dB) in the calibration level during the survey was noted.

7.8 A summary of the calculated Sound Power Levels and % on-time for the associated plant and building openings is provided in Table 7-3. The source measurement data is presented in Appendix D.

Table 7-3 Summary of Sound Power Levels

Plant	Broadband SWL (dB L_{WA})	Daily Occurrence or On-time %
Existing Plant		
Mobile shear baler	106	75%
360 Metal handler (grabber) Number 1	108	95%
360 Metal handler (grabber) Number 2	108	60%
Teletruk Number 1	96	60%
Teletruk Number 2	96	60%
Counterbalance forklift – fork Number 1	91	60%

Plant	Broadband SWL (dB L_{WA})	Daily Occurrence or On-time %
Counterbalance forklift – fork Number 2	91	60%
Counterbalance forklift – clamp	96	70%
Skid Steer (bobcat) Number 1	98	80%
Skid Steer (bobcat) Number 2	98	10%
Container tilter	104	4 times per day 30-minute cycle
Existing Activity		
Grabber loading press and pressing	109	100%
Grabber loading vertical container	107	50%
Unloading truck load with fork clamp	96	80%
Lorry tipping load	110	40%
Variety of forklifts unloading truck	94	20%
Proposed Plant		
Drill	109	5-10 seconds for each new ELV
Decontamination pumps	88	100%

7.9 The sources were all continuous in nature. In relation to a BS 4142:2014+A1:2019 assessment, some of the current sources would attract a penalty for impulsivity characteristics at NSR locations. The measured 1/3 octave band sound power levels do not indicate any tonality being audible at the NSR locations.

7.10 Tonality was not evident at the receptor location during the site visit. Therefore, no penalty for tonality will be applied to the predicted specific sound level at the NSRs. Engine noise from activity on site was not discernible, nor was there any evident audible intermittency.

7.11 With regard to impulsive features, the sound generated while loading containers was impulsive and audible at a low level at the NSR. On this basis, a penalty of 3 dB for impulsivity has been applied as it is just perceptible at the NSR.

7.12 The sound power levels shown in Table 7-3 have informed the 3D noise model. The on-time % for each plant and activities have been provided by site management. This has been conservatively time-corrected to a single cycle during the assessment period, 50% on-time for the 1-hour assessment period.

3D Sound Model

7.13 To calculate specific sound levels associated with operation of the facility at NSRs, a 3D model has been built using SoundPLAN v8.1 proprietary noise modelling software.

7.14 The model predicts sound levels under light down-wind conditions based on hemispherical sound propagation with corrections for atmospheric absorption, ground effects, screening and directivity based on the procedure detailed in ISO 9613-2:1996[ii].

7.15 Terrain contour data have been entered into the model based on OS 1 m land contours. The site buildings and local buildings have been included, and these provide some degree of screening as well as reflecting surfaces.

7.16 Omnidirectional directivity has been assumed for all sources.

7.17 Specific sound levels have been calculated at 1.5 m above ground level. The maximum predicted specific sound level per receptor has been used in the assessment. The same noise modelling techniques have been used by RPS on numerous sites in the UK and worldwide and there is a high degree of confidence in the model.

7.18 Further information and modelling assumptions are presented in Appendix F.

Description of Noise Sources

Existing Plant

7.19 The existing noise sources were implemented in the model at the approximate locations shown in Figure 4-2 as the plant layout of the facility was during the site visit. The modelled type of noise source (point or area) is show in Table 7-4 along with the % on-time over the 1-hour assessment period.

7.20 External noise sources dominated the soundscape across the site and sound emission from the building was not audible at any part of the site, so noise breakout from the building has not been incorporated into the model.

7.21 It is noted that the model includes a mixture of individual plant and activities. This approach was adopted as the majority of plant does not operate individually, and each activity involves multiple pieces of equipment. Sound power levels for the measured activities and individual plant have been used to inform the noise model.

Table 7-4 Modelled Existing Plant Units

Plant	Source type	Modelled Sound Power Level (dBA L_W)	Assumed on-time in 1 hour %
360 Metal handler (grabber)_1	Point	108	80% on time
360 Metal handler (grabber)_2	Point	108	50% on time
Container Tilter Engine	Point	106	50% on time
Forklifts	Area	91	100% on time
Forklifts unloading truck	Area	95	80% on time
Load tipping (excluding lorry engine)	Point	115	1% on time
Loading Vertical container (impulses)	Point	121	6% on time
Lorry	Line	99	50% on time
Lorry Engine	Point	91	3% on time
Mobile shear baler	Point	106	100% on time
Unloading truck load with fork clamp	Area	97	70 % on time

Proposed New Plant

7.22 The new ELV facility is proposed to be housed in a 15 x 14 m (approx.) building located at the south end of the existing building as shown in the site plan at Figure 7-2. The building will be clad in non-insulated plastic, with a roller-shutter door on the west façade that will be open during normal operation. For the purposes of this assessment, the building is assumed to offer no attenuation to sound breakout.

Figure 7-2 Site plan showing location of proposed ELV facility to south of main building

7.23 Within the building there will be three depollution rigs as shown in Figure 7-3. Each station has pumps that are assumed to run continuously, and a very short-duration drill noise (a few seconds at the start of the depollution cycle for each ELV) conservatively estimated to be active 5% of the assessment period as an absolute worst case.

7.24 A forklift will transport ELVs between the rigs and the nearby ELV storage areas. 100% activity over the assessment period has been assumed as worst case.

7.25 The approximate locations of the proposed sources in the model are presented in Figure 7-4, with the associated source terms in Table 7-5.

Table 7-5 Modelled proposed plant units

New/ Operational Plant Units	Source type	Modelled Sound Power Level (dBA L_W)	Assumed on-time in 1 hour %
Drill	Point	109	5
Decontamination Pumps	Point	88	100
Forklift movement	Area	91	100

7.26 It is noted that the new plant units implemented in the noise model have been based on noise emission levels taken from a previous survey of a similar Sims facility at Pepper Road in Leeds where the plant was already installed, measured on 13th June 2023.

7.27 In addition to the internal plant, forklift movement has been modelled externally in the area in front of the proposed new building as indicated in green on Figure 7-4.

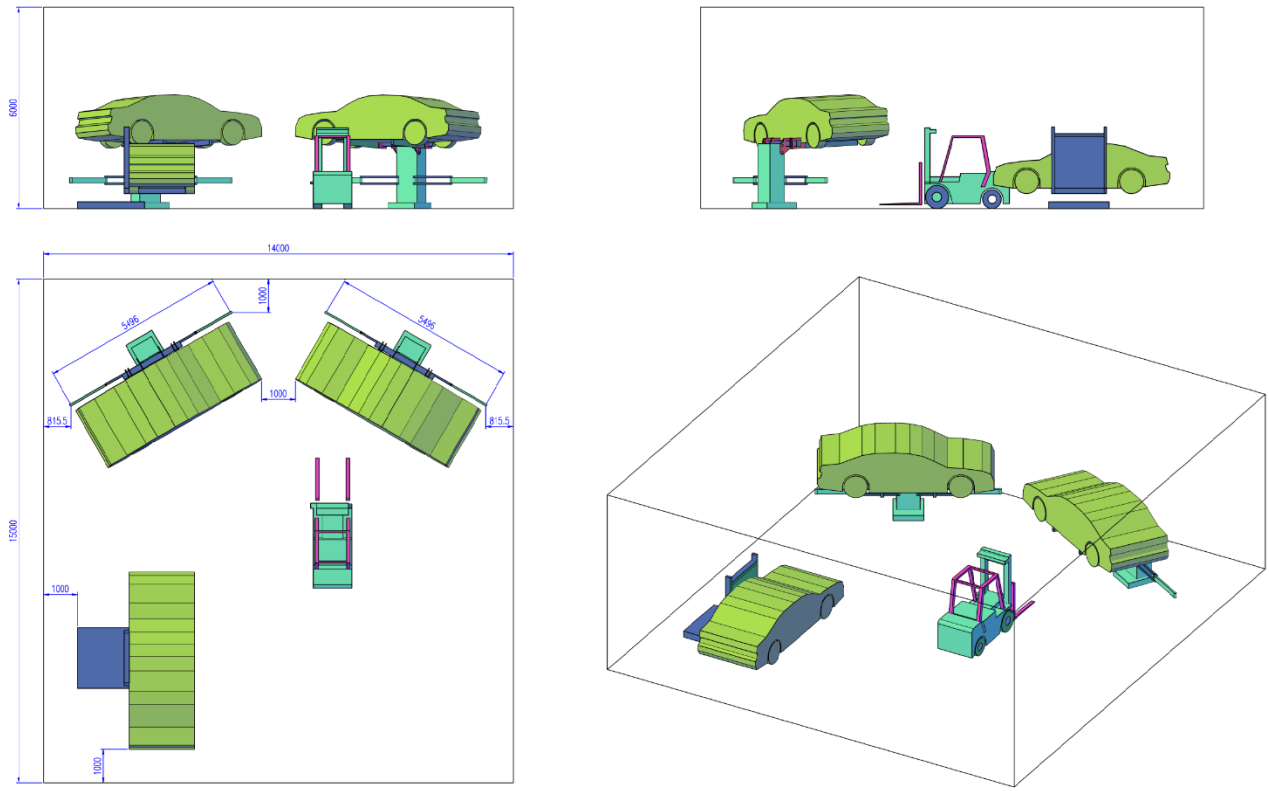


Figure 7-3 Indicative internal layout of ELV facility

Figure 7-4 Modelled locations of proposed plant on site

Sound Modelling Results

7.28 The 3D sound model was used to predict the specific sound levels at residential NSRs to the south.

7.29 As the facility is proposed to operate during the daytime only, no evening or night-time operation is proposed.

7.30 A summary of the predicted specific sound levels from the operational site are shown in Table 7-6. It is noted that the largest change in the predicted Future Operation levels is +1 dB at Nos. 80 and 48 The Gateway, compared to the Existing Operation levels.

Table 7-6 Specific Sound Levels at NSRs

Location / NSR	Existing Operation Specific Sound Level (dB $L_{Aeq,Tr}$)	Proposed Operation Specific Sound Level (dB $L_{Aeq,Tr}$)	Future Operation Specific Sound Level (dB $L_{Aeq,Tr}$)
A - 137 Anthony Close	46	30	46
B - 80 The Gateway	44	30	44
C - 112 The Gateway	45	27	45
D - 48 The Gateway	44	32	44
E - 40 Paxton Place	50	32	50
F - 35 Paxton Place	49	29	49
G - 35 Wren Way	50	30	50

7.31 During the existing operation, NSRs south of the site are predicted to experience slightly lower levels of sound from the site compared to the receptors located to the north (E, F and G). However, the assessment has been focused on NSRs A-D as they are considered to be located in an area with lower ambient noise, as opposed to NSRs E, F and G, and thus more likely to experience an adverse impact. A breakdown of sound levels from existing specific plant at the most sensitive NSRs is provided in Table 7-7, and from proposed plant in Table 7-8.

Table 7-7 Partial Specific Sound Levels (dB $L_{Aeq,Tr}$) for Existing Operation

Plant Item	NSR			
	A	B	C	D
Loading Vertical container (impulses)	41	40	40	39
360 Metal handler (grabber)_1	39	37	39	38
Mobile shear baler	39	36	37	38
360 Metal handler (grabber)_2	38	36	34	37
Container Tilter Engine	35	31	32	32
Unloading truck load with fork clamp	27	28	30	24
Load tipping (excluding lorry engine)	27	26	29	23
Lorry	25	24	27	22
Forklifts	22	23	25	21
Forklifts unloading truck	18	23	24	18
Lorry Engine	9	5	7	9
TOTAL	**46**	**44**	**45**	**44**

Table 7-8 Partial Specific Sound Levels (dB $L_{Aeq,Tr}$) for Proposed Operation

Plant Item	NSR			
	A	B	C	D
Forklift movement	25	20	20	25
Drill	27	28	25	29
Decontamination Pumps	25	26	22	26
TOTAL	**30**	**30**	**27**	**32**

7.32 To inform a secondary assessment of absolute levels, the partial contributions at the receptors with no time weighting have also been calculated and are presented in Table 7-9.

Table 7-9 Partial Specific Sound Levels (dB $L_{Aeq,Tr}$) for Existing Operation without time weighting

Plant Item	NSR			
	A	B	C	D
Unloading truck load with fork clamp	29	26	28	26
Forklifts unloading truck	20	27	30	19
Forklifts	22	23	25	21
Lorry	28	31	33	27
Mobile shear baler	39	36	40	38
360 Metal handler (grabber)_1	40	37	41	38
360 Metal handler (grabber)_2	41	40	38	41
Container Tilter Engine	39	34	35	36
Loading Vertical container (impulses)	53	52	49	51
Lorry Engine	25	20	22	24
Load tipping (excluding lorry engine)	47	43	44	43

7.33 Contour plots showing the spatial spread of the predicted levels are provided in Appendix E.

8 ASSESSMENT

BS 4142 Assessment – Existing Operation

8.1 The Sims Metal Manchester facility is currently operating Monday to Friday 08:00 to 17:00 hours and Saturday 09:00 to 12:00 hours, therefore only daytime assessment has been carried out, with a reference time period T_r of one hour.

8.2 With reference to paragraphs 7.9 to 7.11, it is not considered appropriate to apply a character correction for either tonality or intermittency.

8.3 From Table 7-9 it may be seen that the highest level offsite, 53 dB(A), is at NSR A and is caused by the impulsive sound of a grabber load being placed into the vertical container. This is a short-duration impulsive sound which occurs for a few seconds roughly 8 times per 5 minutes during loading, which in turn happens up to 4 times per day for 30 minutes at a time. Subjectively its impulsivity was assessed to be 'just perceptible' at NSR A and this is supported by the absolute level, which is lower than the residual level at all receptors. A +3 dB correction for impulsivity has therefore been applied.

8.4 Prediction of the impacts based on existing operation in accordance with BS 4142:2014+A1:2019 is provided in Table 8-1.

Table 8-1 BS 4142 Assessment – Existing Operation

Existing Operation	NSR			
	A	B	C	D
Ambient Sound Level	NA	NA	NA	NA
Residual Sound Level dB $L_{Aeq,1hr}$	56	56	56	56
Background Sound Level dB $L_{A90,1hr}$	37	37	43	37
Specific Sound Level dB L_s	46	44	45	44
Tonality dB	0	0	0	0
Impulsivity dB	3	3	3	3
Intermittency dB	0	0	0	0
Acoustic Feature Correction dB	0	0	0	0
Rating Level dB $L_{Ar,1hr}$	49	47	48	47
Excess of rating over background sound level dB	12	10	5	10
Excess of specific sound over residual sound level dB	-10	-12	-11	-12

8.5 With regard to the rating/background level difference, BS 4142:2014+A1:2019 states:

- 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; and
- 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.

8.6 On the basis of the above, and with reference to Table 8-1, the Rating Levels are between 5 and 12 dB above the representative background sound level during the assessment period, so it is considered that there is a risk that operation of the facility could result in significant adverse impact

at several NSRs, depending on the context. It is noted, however, that these impacts are conservatively based on worst-case assumptions with respect to both background sound levels and specific sound levels.

BS 4142 Context – Existing Operation

8.7 BS4142:2014+A1:2019 states: "*the significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound sources exceeds the background sound level and the context in which the sound occurs*".

8.8 The first requirement of the above statement has been determined in the noise impact assessment section above. To establish the context in which the industrial / commercial sound will reside three pertinent factors must be considered, these are:

- The absolute sound level;
- The character and level of the residual sound compared to the character and level of the specific sound; and
- The sensitivity of the receptor.

Absolute Levels of Sound

8.9 To determine the context in BS 4142:2014+A1:2019 it is first necessary to determine whether the residual and background sound levels are high or low. Section 11 of BS 4142:2014+A1:2019 states:

"Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.

Where residual sound levels are very high, the residual sound might itself result in adverse impacts or significant adverse impacts, and the margin by which the rating level exceeds the background might simply be an indication of the extent to which the specific sound source is likely to make those impacts worse."

8.10 The residual sound level at the NSRs is 56 dB(A) during the daytime, considered to be high, with a representative background sound level of 37 dB(A), considered to be low.

8.11 The assessment of impact may therefore be reconsidered as the residual sound itself might result in adverse impact on the receptor. Although the rating level exceeds the background level by up to 12 dB, the predicted specific sound levels sit well below the residual level.

Character and Level of the Residual and Specific Sound

8.12 The residual sound at the NSRs comprises predominantly low to mid frequency noise from road traffic noise with rail contributions increasing towards the west. The majority of sources that contribute to the specific sound associated with the development are similar in character, such that only low-level impulsive events are occasionally audible.

8.13 The residual sound is around 56 dB(A) at the NSRs, where the worst-case specific sound level is predicted to be 46 dB(A), so whilst it is likely that noise from the existing operation may be distantly audible at the receptor, it is unlikely to be intrusive.

Sensitivity of Receptor

8.14 With regard to pertinent factors to be taken into consideration, Section 11 of BS 4142:2014+A1:2019 states:

"The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal design and/or outdoor acoustic conditions, such as:

i. Façade insulation treatment;

ii. Ventilation and/or cooling that will reduce the need to have windows open as to provide rapid or purge ventilation; and

iii. Acoustic screening."

8.15 As the glazing and ventilation strategy for existing NSRs is not known, it has been assumed that the NSRs will rely on open windows to maintain sufficient background ventilation. According to the e3p report for the Gateway site, the NSRs under consideration will also be using windows for natural ventilation.

8.16 Assuming 13 dB(A) attenuation provided by a window partially open for ventilation[iii], internal noise levels generated by the existing site, at the worst affected receptors, are expected to be 33 dB(A) during the daytime, which is below the WHO and BS8233 daytime guideline levels.

8.17 No specific mitigation measures are therefore considered to be necessary to protect receptors from industrial noise.

Assessment Summary

8.18 A BS 4142:2014+A1:2019 assessment has been undertaken to assess the potential noise impacts caused by the existing development on nearby existing and future noise sensitive receptors.

8.19 A context assessment shows that the highest specific sound level associated with the existing facility operation is predicted to be 10 dB below the prevailing residual acoustic environment and will therefore generate a **low impact** at all sensitive receptors, when considered in context. This is the lowest category stated in BS 4142:2014+A1:2019.

8.20 Mitigation measures are therefore not considered necessary for the existing operation.

8.21 With regard to national and local planning policy, sound associated with the proposed development is considered 'present and not intrusive' (i.e. noise can be heard but does not cause any change in behaviour, attitude, or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life).

8.22 It is therefore considered that the existing development is compliant with the requirements of the Noise Policy Statement for England (NPSE), the National Planning Policy Framework (NPPF) and is below the Lowest Observable Adverse Effect Level (LOAEL) as defined in Planning Practice Guidance on Noise (PPG-N). The lack of any noise limits stipulated in the existing environmental permit is therefore considered appropriate.

BS 4142 Assessment – Future Operation

8.23 The Sims Metal Manchester facility is currently operating Monday to Friday 08:00 to 17:00 hours and Saturday 09:00 to 12:00 hours. Future proposed operation will take place during the same time periods, therefore only daytime assessment has been carried out.

8.24 The assessment of future operations considers the noise sources operational during the existing operations, as well as the proposed noise sources outlined in Table 7-8.

8.25 Prediction of the impacts based on future operation in accordance with BS 4142:2014+A1:2019 is provided in Table 8-2. The character corrections remain the same as for the existing condition.

Table 8-2 BS 4142 Assessment – Future Operation

Future Operation	NSR			
	A	B	C	D
Ambient Sound Level	NA	NA	NA	NA
Residual Sound Level dB $L_{Aeq,1hr}$	56	56	56	56
Background Sound Level dB $L_{A90,1hr}$	37	37	43	37
Specific Sound Level dB L_s	46	44	45	44
Tonality dB	0	0	0	0
Impulsivity dB	3	3	3	3
Intermittency dB	0	0	0	0
Acoustic Feature Correction dB	0	0	0	0
Rating Level dB $L_{Ar,1hr}$	49	47	48	47
Excess of rating over background sound level dB	12	10	5	10
Excess of specific sound over residual sound level dB	-10	-12	-11	-12

8.26 There is no change in the assessment at any receptor, so the conclusions remain unchanged from Paragraph 8.19.

9 NOISE CONTROL

9.1 Given the BS4142 assessment of ‘low impact’, no requirement for specific mitigation has been identified, but ongoing use of best available techniques (BAT) is recommended.

9.2 Operational noise control measures are presented in the separate Noise Management Plan ref. *794-ENV-EPC-21048-ACO-0002-01_Noise Management Plan*.

10 ASSUMPTIONS AND UNCERTAINTY

10.1 Great care has been taken to base the assessment on worst-case assumptions, as follows:

- No attenuation factor has been applied to the light-weight plastic cladding on the new ELF building. Although the predicted activity levels from this facility do not contribute to the sound levels at the closest receptor, and therefore do not affect the assessment, the presence of the building will provide some acoustic shielding between activities onsite and the most sensitive receptor, NSR A, so levels here are expected to be lower than predicted.
- The attended baseline sound level measurements have been carried out during the quieter times of the day when other nearby industrial facilities are not operational and are therefore representative of worst case. Furthermore, baseline sound levels for each NSR have been assumed to be further from the main railway tracks at the west of the site than the receptor location; and
- Short duration baseline measurements have been correlated to and show good agreement with the longer-term measurements submitted in the ES for the Kellen Homes site.

10.2 These assumptions, coupled with the 10 dB difference between the specific and residual sound levels, mean that the magnitude uncertainty within the assessment is insufficient to change the assessment of impact.

11 CONCLUSIONS

11.1 The results of the assessments show that current and proposed operation of the Sims facility is unlikely to result in adverse effects above the LOAEL and that residential amenity is not likely to be adversely affected. Significant adverse impacts/effects are avoided.

11.2 Sound from the facility is considered to be suitably mitigated through the application of best available techniques, such that it does not cause an adverse impact.

11.3 Noise emissions from the Sims facility would not be of a magnitude sufficient to give reasonable cause for annoyance, and a high general level of protection of the environment as a whole is provided.

APPENDICES

Appendix A

Baseline Survey

Time history graphs of the morning and afternoon surveys at ML1 are presented respectively in Figure A-11-1 and Figure A-11-2 below.

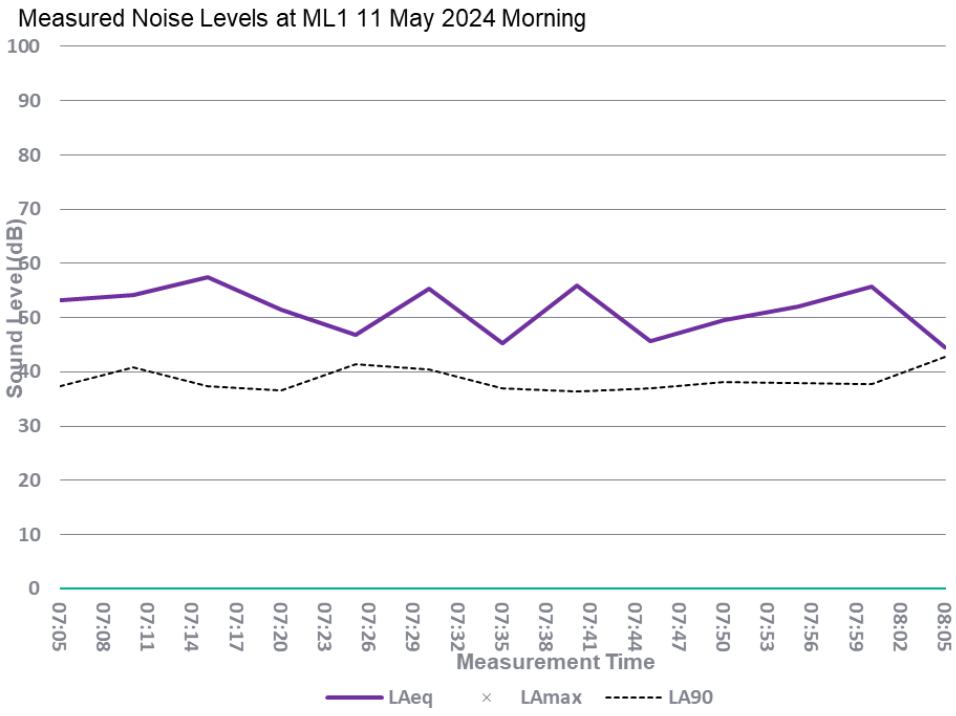


Figure A-11-1 Morning time history

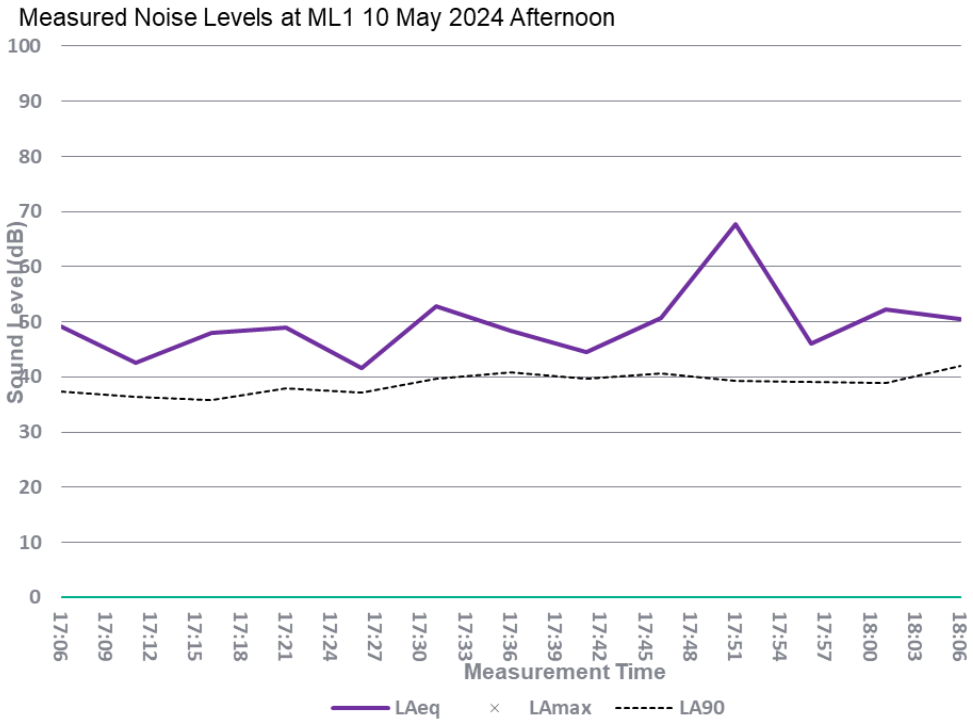
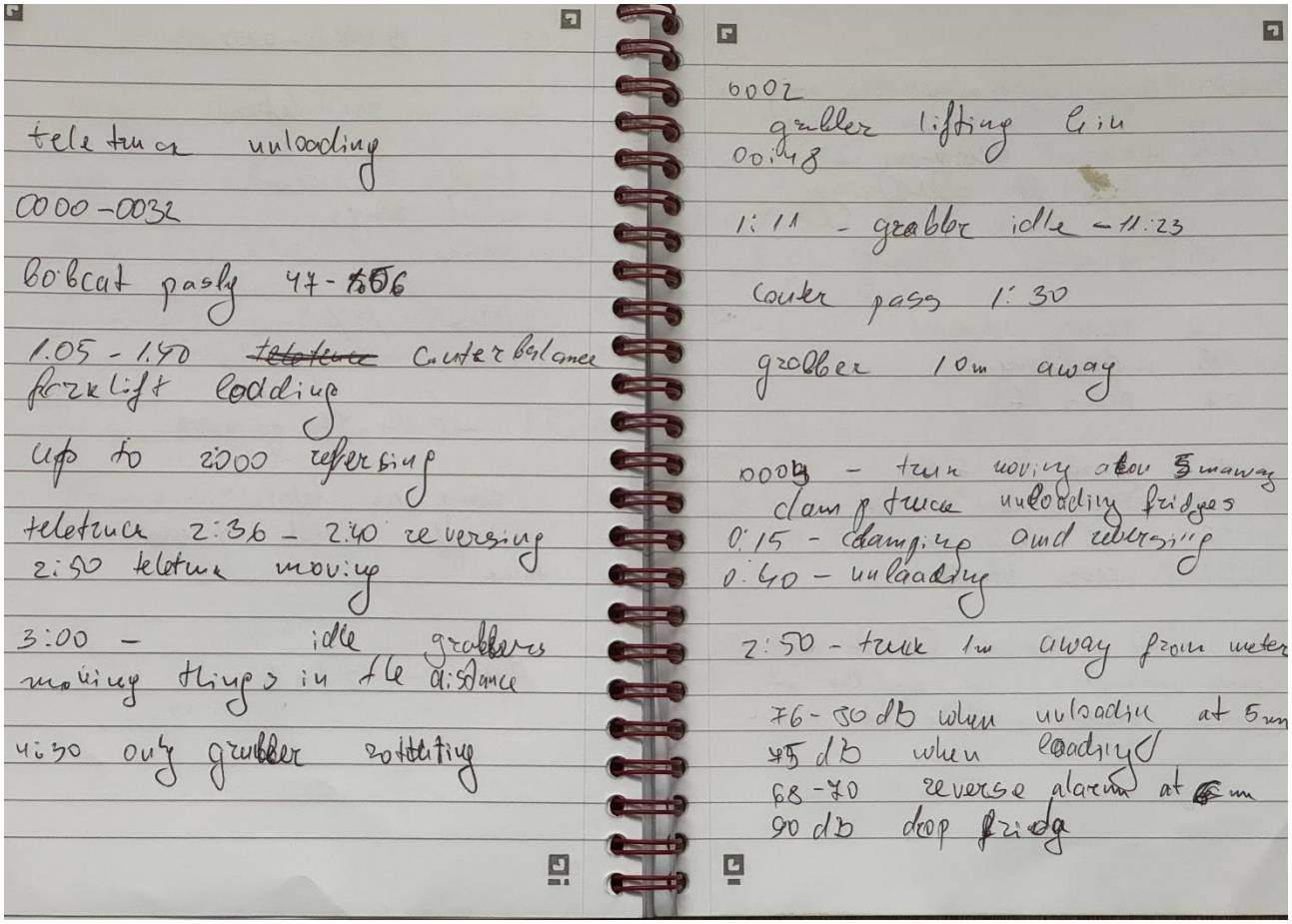


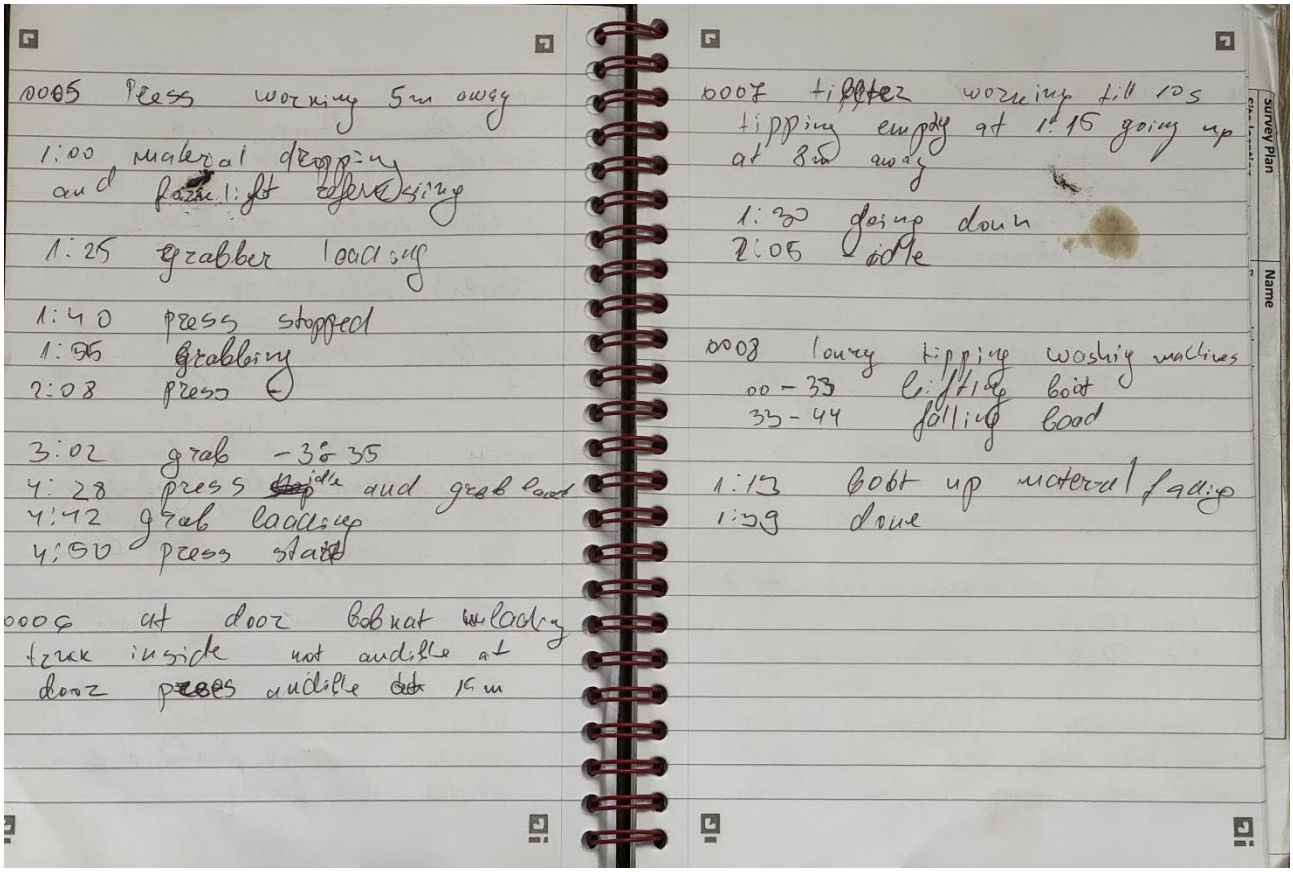
Figure A-11-2 Afternoon time history

Appendix B

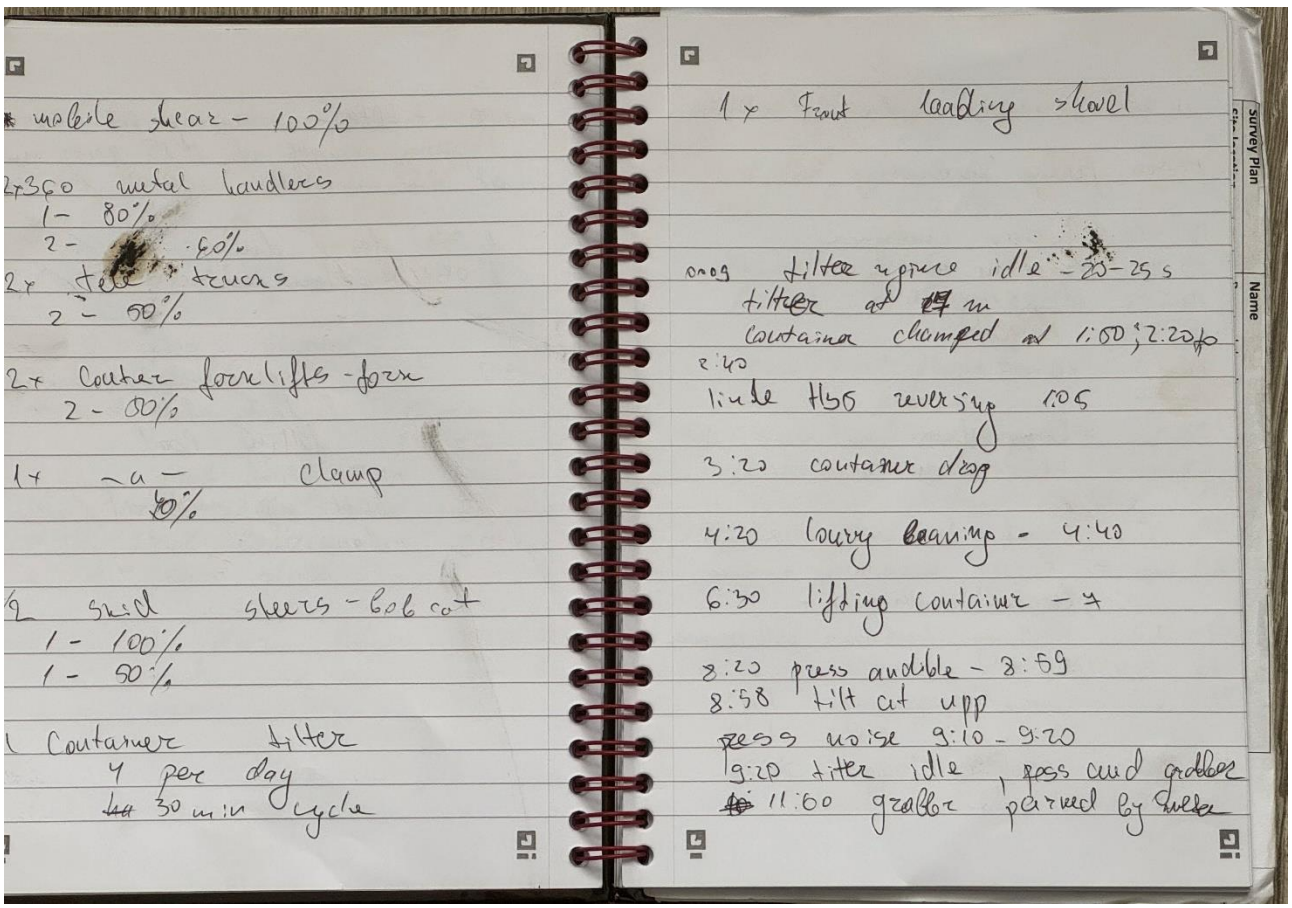
Survey Notes

Scans of notes taken during the attended survey at Sims Metal Manchester are presented below.



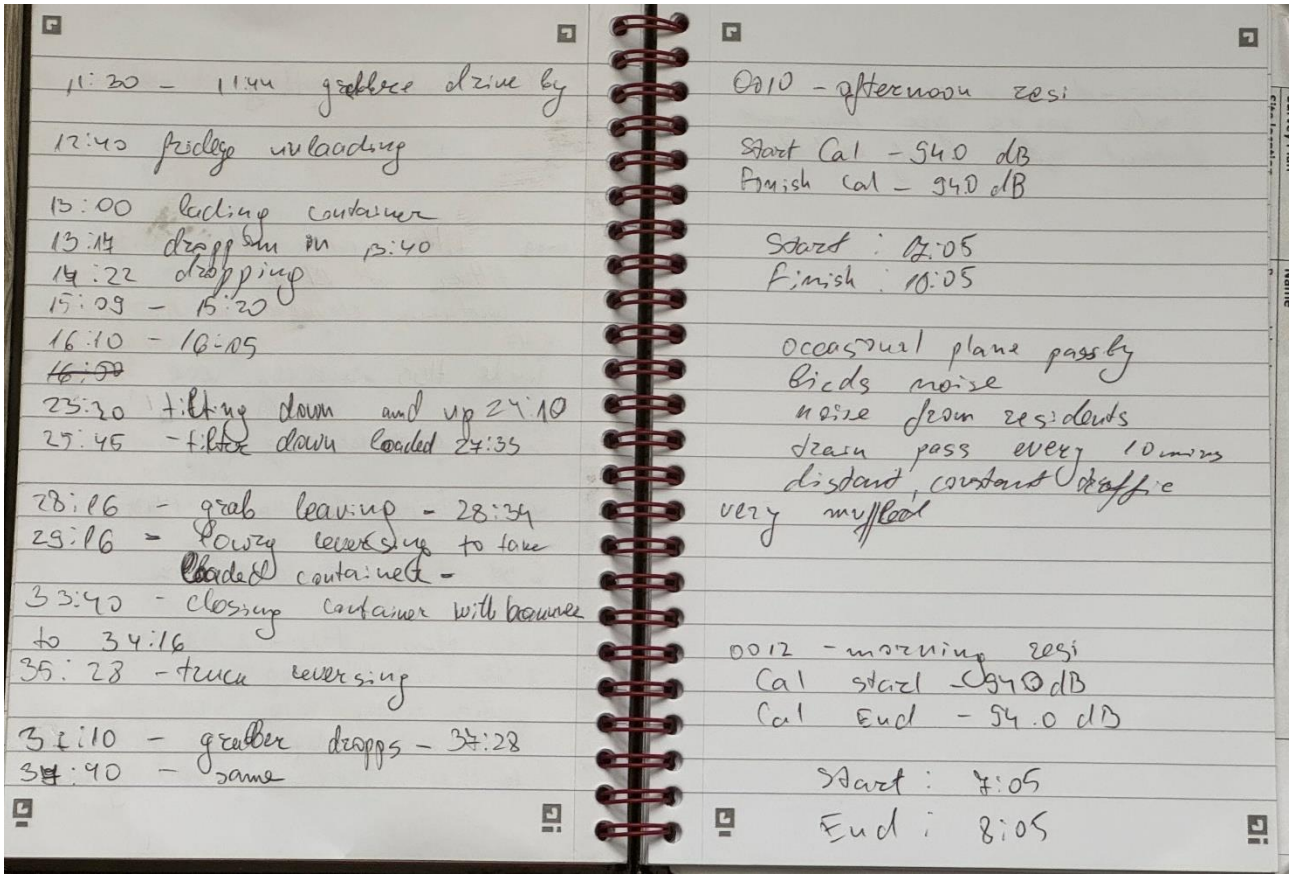


0005 Press working 5m away
1:00 Material dropping and flat light reversing
1:25 grabber loading
1:40 press stopped
1:55 Grabbing
2:08 press
3:02 grab - 3 & 35
4:28 press beside and grab load
4:42 grab loading
4:50 press start
0006 at door Bobcat unloading truck inside not audible at door press audible 15m
0007 tipper working till 1:05 tipping empty at 1:15 going up at 8m away
1:30 going down
2:05 idle
0008 lorry tipping washing machines
00 - 33 lifting boot
33 - 44 falling load
1:13 boot up material laying
1:59 done



* mobile shear - 100%
2x360 metal handlers
1 - 80%
2 - 60%
2x tele trucks
2 - 50%
2x Counter forklifts - fork
2 - 80%
1x - a - clamp
50%
2 skid steers - Bobcat
1 - 100%
1 - 50%
1 Container tipper
4 per day
30 min cycle

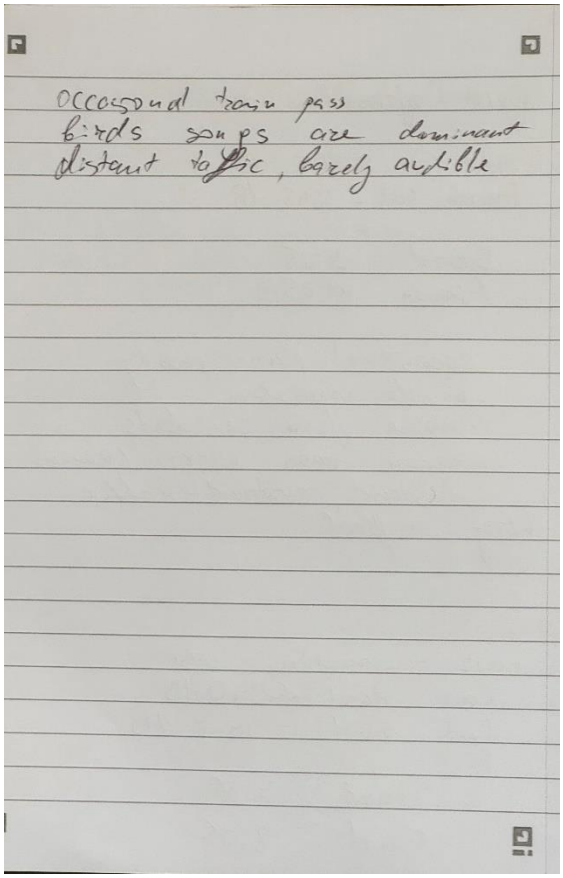
1x Front loading shovel
0009 tipper approx idle - 25-25s
tipper at 8m
container clamped at 1:00; 2:20 to 2:40
linde H35 reversing 1:05
3:20 container drop
4:20 lorry leaving - 4:40
6:30 lifting container - 7
8:20 press audible - 8:59
8:58 tilt at upp
press noise 9:10 - 9:20
9:20 tipper idle, pass and grabber
11:00 grabber parked by trailer



11:30 – 11:44 grabber drive by
12:45 fridge unloading
13:00 loading container
13:14 dropping on 13:40
14:22 dropping
15:09 – 15:20
16:10 – 16:05
~~16:50~~
25:20 tilting down and up 24:10
25:45 - tilter down loaded 24:35
28:16 - grab leaving up - 28:34
29:16 - Powys reversing to take loaded container -
33:40 - closing container with banner to 34:16
35:28 - truck reversing
37:10 - grabber drops - 37:28
37:40 - same

0010 - afternoon resi
Start Cal - 94.0 dB
Finish cal - 94.0 dB
Start : 07:05
Finish : 10:05
occasional plane passby
birds noise
noise from residents
train pass every 10 mins
distant, constant traffic
very muffled

0012 - morning resi
Cal start - 94.0 dB
Cal End - 94.0 dB
Start : 7:05
End : 8:05



occasional train pass
birds songs are dominant
distant traffic, barely audible

Appendix C

Bennett Street ES

The following information is extracted from the Noise & Vibration Chapter of the Bennett Street ES, submitted in support of the planning application for The Gateway.

Consultants e3p reported the results of two unattended rail traffic sound surveys carried out at positions NMP1 and NMP2, as presented in Figure A-3.

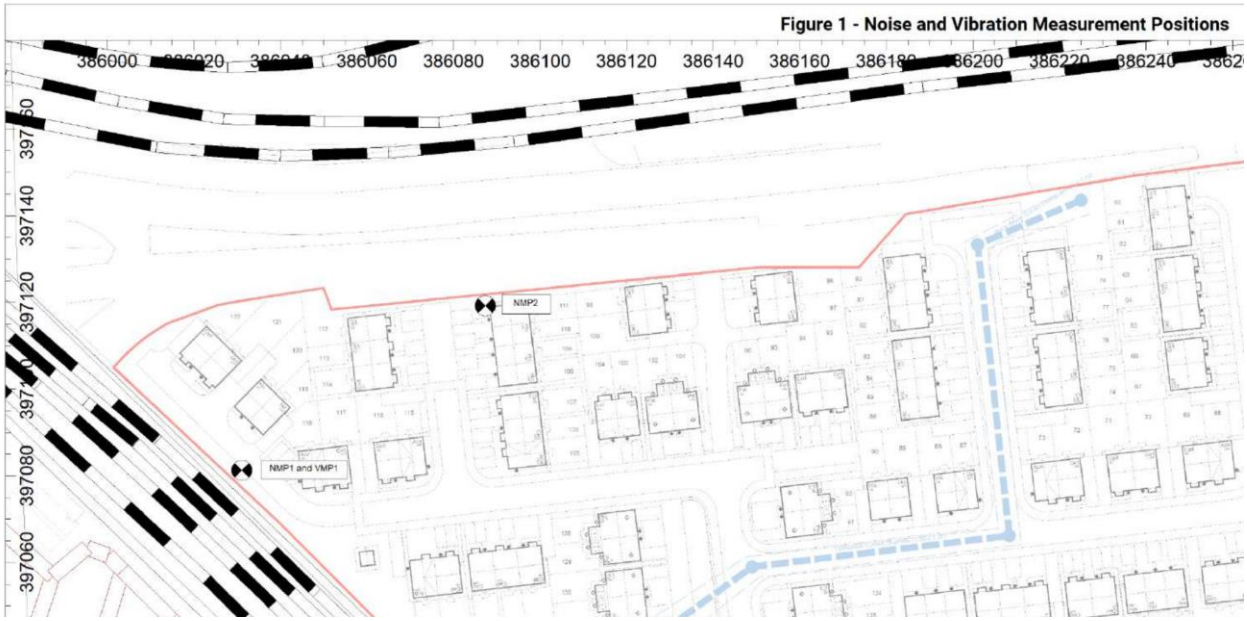


Figure A-3 Extract of Figure 1 from E3p report 50-636-R1-4.

Due to its proximity to the tracks that run adjacent to NSR A, NMP2 was considered more representative, although it is accepted that it is closer to the western tracks than NSR A and therefore measured levels may reasonably expected to be higher.

Table A.2 of report *50-636-R1-4* presents the NMP2 measurement data, replicated in Table A-1.

Table A-1 NMP2 measured sound levels

PERIOD START	AMBIENT SOUND LEVEL, $L_{Aeq,1hr}$ (dB)	MAXIMUM MEASURED SOUND LEVEL, $L_{Amax,fast}$ (dB)	BACKGROUND SOUND LEVEL, $L_{A90,1hr}$ (dB)
27/06/2022 14:28	54	73	42
27/06/2022 15:28	55	74	43
27/06/2022 16:28	56	76	44
27/06/2022 17:28	55	72	43
27/06/2022 18:28	55	72	40
27/06/2022 19:28	55	74	43
27/06/2022 20:28	54	72	41
27/06/2022 21:28	54	73	41
27/06/2022 22:28	54	75	40
27/06/2022 23:28	52	71	40
28/06/2022 00:28	51	70	40
28/06/2022 01:28	45	68	38

PERIOD START	AMBIENT SOUND LEVEL, $L_{Aeq,1hr}$ (dB)	MAXIMUM MEASURED SOUND LEVEL, $L_{Amax,fast}$ (dB)	BACKGROUND SOUND LEVEL, $L_{A90,1hr}$ (dB)
28/06/2022 02:28	55	77	38
28/06/2022 03:28	50	73	41
28/06/2022 04:28	55	74	43
28/06/2022 05:28	54	70	46
28/06/2022 06:28	57	73	47
28/06/2022 07:28	55	72	47
28/06/2022 08:28	57	75	47
28/06/2022 09:28	57	81	48
28/06/2022 10:28	57	81	47
28/06/2022 11:28	57	75	50
28/06/2022 12:28	58	76	49
28/06/2022 13:28	57	74	49

From the above data, the daytime residual sound level is estimated to range between 54 and 58 dB(A) with an average of 56 dB $L_{Aeq,16hr}$. A statistical analysis of the data results in a frequency distribution as shown in Figure A-4, from which the typical background sound level is conservatively estimated to be 43 dB $L_{A90,1hr}$.

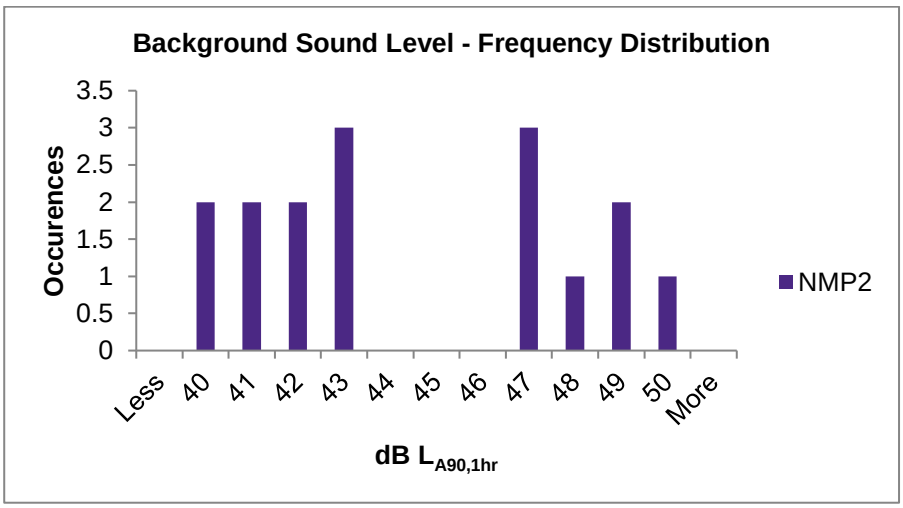


Figure A-4 Frequency distribution of background sound levels measured at NMP2

Appendix D

Source Term Measurements

Table A-2 presents source broadband A-weighted and 1/3 octave band Z-weighted measurement data collected at Sims Metal sites by RPS, along with the source height and the measurement distance from the source. All measurements were taken at a height of 1.5 m at least 3.5 m from any reflecting surface other than the ground.

Table A-2 Measured source sound pressure levels

Source Description	Distance (m)	Height (m)	$L_{Aeq,T}$ (dB)	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz
Plant measured at Rondin Road 10th May 2024																											
Mobile shear baler	5	3	84	68	67	72	71	73	72	75	80	74	77	80	75	75	74	72	71	70	70	68	68	66	66	65	63
Mobile shear baler (idle)	5	3	76	67	60	65	69	73	69	65	69	69	70	68	68	67	65	64	63	64	65	62	61	60	59	58	55
360 Metal handler (grabber)	10	3	80	69	68	72	69	70	69	68	72	71	69	71	70	70	69	69	74	68	67	67	66	64	62	60	58
360 Metal handler (grabber)	10	3	80	69	68	72	69	70	69	68	72	71	69	71	70	70	69	69	74	68	67	67	66	64	62	60	58
360 Metal handler (grabber) Idle	10	3	70	70	61	61	64	69	63	61	62	64	64	64	63	61	61	60	56	56	56	54	53	51	48	47	44
Teletruk	6	1.5	72	69	68	65	69	64	63	65	62	65	63	62	64	60	64	62	59	59	59	59	58	59	61	56	46
Teletruk	6	1.5	72	69	68	65	69	64	63	65	62	65	63	62	64	60	64	62	59	59	59	59	58	59	61	56	46
Teletruk (reversing)	5	1.5	73	67	68	67	65	69	69	67	65	66	63	61	61	61	66	65	60	59	60	60	59	59	62	58	48
Teletruk (moving)	5	1.5	70	59	67	70	64	68	63	59	61	62	61	65	65	61	58	56	56	55	55	55	52	47	44	40	37
Counterbalance forklift - fork	6	1.5	68	65	59	61	61	64	62	61	61	63	60	60	60	57	58	57	55	54	54	54	53	50	48	45	38
Counterbalance forklift - fork	6	1.5	68	65	59	61	61	64	62	61	61	63	60	60	60	57	58	57	55	54	54	54	53	50	48	45	38
Counterbalance forklift - fork reversing	5	1.5	72	66	62	66	63	68	65	62	62	62	62	62	61	59	61	61	58	58	59	61	63	60	60	56	49
Counterbalance forklift - clamp loading	5	1.5	74	68	63	68	69	68	66	66	68	66	66	67	66	66	64	65	62	61	61	60	58	56	53	51	48
Counterbalance forklift - clamp unloading	5	1.5	73	66	61	66	67	66	65	63	64	65	65	62	62	61	60	70	59	58	57	55	53	51	49	46	43
Counterbalance forklift - clamp dropping load	5	1.5	79	70	67	70	72	73	74	70	71	71	70	71	70	68	68	72	65	65	65	64	63	61	59	58	55
Skid Steer (bobcat)	4	1.5	78	68	64	74	82	67	68	73	72	77	78	69	65	65	65	63	63	65	62	60	59	56	53	50	47
Skid Steer (bobcat)	4	1.5	78	68	64	74	82	67	68	73	72	77	78	69	65	65	65	63	63	65	62	60	59	56	53	50	47
Container tilter	16	1.5	72	66	82	68	61	70	64	66	65	64	62	63	62	62	63	61	61	61	60	58	59	57	52	50	45

Source Description	Distance (m)	Height (m)	$L_{Aeq,T}$ (dB)	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz
Container tilter lifitng empty	16	1.5	72	71	82	65	58	70	59	61	65	68	58	60	59	58	57	55	57	57	57	68	54	49	48	45	43
Container tilter lowering full	16	1.5	74	66	82	65	63	70	60	62	66	69	62	65	62	62	61	60	60	61	60	67	59	58	56	54	52
Activity measured at Rondin Road 10th May 2024																											
Grabber loading press and pressing	7	3	84	56	60	65	68	68	68	69	67	72	71	74	73	76	80	74	76	79	76	75	73	72	71	70	70
Loading vertical container	14	2	121	96	97	96	98	95	104	105	113	106	103	106	109	108	108	110	109	111	111	111	111	110	110	111	111
Unloading truck load with fork clamp	5	2	75	58	61	66	77	73	70	68	63	68	70	68	67	66	68	66	67	67	66	66	64	66	62	61	61
Lorry engine while tipping	2	1.5	91	69	73	82	81	80	80	89	76	78	79	82	80	76	76	78	75	78	82	86	82	81	81	80	76
Lorry tipping load	15	1	78	58	64	67	70	76	73	74	70	70	70	70	69	68	69	69	68	67	69	70	68	67	67	67	66
variety of forklifts unloading truck	5	2	73	57	65	68	69	68	77	75	69	69	74	68	67	66	66	68	68	63	63	61	61	61	59	61	61
Plant Measured at Pepper Road 13th July 2023																											
Drill	1.5	1.5	98	70	73	73	74	74	79	76	78	77	75	78	77	84	84	75	77	79	88	85	86	88	88	89	90
Decontamination pumps	1.5	1.5	76	66	69	73	68	62	60	60	60	65	68	68	64	67	67	68	67	64	61	62	60	59	59	56	54

These levels have been used to calculate the octave-band sound power levels within the model, presented as broadband A-weighted and 1/3 octave band Z-weighted in Table A-3.

Table A-3 Calculated source sound power levels

Source Description	L_{wA} (dB)	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz
Plant measured at Rondin Road 10th May 2024																									
Mobile shear baler	106	90	89	94	93	95	94	97	102	96	99	102	97	97	96	94	93	92	92	90	90	88	88	87	85
Mobile shear baler (idle)	98	89	82	87	91	95	91	87	91	91	92	90	90	89	87	86	85	86	87	84	83	82	81	80	77
360 Metal handler (grabber)	108	97	96	100	97	98	97	96	100	99	97	99	98	98	97	97	102	96	95	95	94	92	90	88	86
360 Metal handler (grabber)	108	97	96	100	97	98	97	96	100	99	97	99	98	98	97	97	102	96	95	95	94	92	90	88	86
360 Metal handler (grabber) Idle	98	98	89	89	92	97	91	89	90	92	92	92	91	89	89	88	84	84	84	82	81	79	76	75	72

Source Description	L_{wA} (dB)	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz
Teletruk	96	93	92	89	93	88	86	89	85	89	87	86	87	84	88	86	83	82	83	83	81	82	84	79	70
Teletruk	96	93	92	89	93	88	86	89	85	89	87	86	87	84	88	86	83	82	83	83	81	82	84	79	70
Teletruk (reversing)	95	89	90	88	87	91	91	89	87	88	85	83	83	83	88	87	82	81	82	82	81	81	83	80	70
Teletruk (moving)	92	81	89	92	86	90	85	81	83	84	83	87	87	83	79	77	78	77	76	77	74	69	66	62	59
Counterbalance forklift - fork	91	88	82	84	85	88	85	85	85	86	84	83	84	81	81	81	79	78	77	78	76	73	72	69	62
Counterbalance forklift - fork	91	88	82	84	85	88	85	85	85	86	84	83	84	81	81	81	79	78	77	78	76	73	72	69	62
Counterbalance forklift - fork reversing	94	88	84	88	85	90	86	84	84	84	84	84	83	81	83	83	80	80	81	82	85	81	82	78	71
Counterbalance forklift - clamp loading	96	90	85	90	91	90	88	88	90	88	88	88	88	88	86	87	84	83	83	82	80	78	75	73	70
Counterbalance forklift - clamp unloading	95	88	83	88	89	88	87	85	86	87	87	84	84	83	82	92	81	80	79	77	75	73	71	68	65
Counterbalance forklift - clamp dropping load	101	92	89	92	94	95	96	92	93	93	92	93	92	90	90	94	87	87	87	86	85	83	81	80	77
Skid Steer (bobcat)	98	88	84	94	102	87	88	93	92	97	98	89	86	85	85	83	83	85	82	80	79	76	73	70	67
Skid Steer (bobcat)	98	88	84	94	102	87	88	93	92	97	98	89	86	85	85	83	83	85	82	80	79	76	73	70	67
Container tilter	104	98	114	100	93	102	96	98	97	97	94	95	94	94	95	94	93	93	92	90	91	89	84	82	77
Container tilter lifitng empty	104	103	114	97	91	102	91	93	98	100	91	92	91	90	89	87	89	89	89	100	86	81	80	77	75
Container tilter lowering full	106	98	114	97	95	102	92	94	98	101	94	97	94	94	93	92	92	93	92	99	92	90	88	87	84
Activity measured at Rondin Road 10th May 2024																									
Grabber loading press and pressing	109	94	92	97	96	99	97	100	105	99	101	104	100	100	98	97	96	95	95	93	93	92	91	90	88
Loading vertical container	152	136	143	137	134	137	140	139	139	141	140	142	142	142	142	141	141	142	142	140	139	138	136	132	128
Unloading truck load with fork clamp	96	90	85	90	91	90	89	88	90	88	89	89	88	88	86	88	84	83	83	82	80	78	75	73	70
Lorry engine while tipping	105	103	90	92	93	96	94	90	90	92	89	92	96	100	96	95	95	94	90	89	89	87	83	80	78
Lorry tipping load	110	106	101	102	102	102	101	99	100	101	99	99	101	102	100	99	99	98	97	96	96	94	92	90	88
variety of forklifts unloading truck	94	97	91	90	96	90	88	88	88	90	90	85	85	83	83	83	81	83	83	80	79	77	77	73	66
Plant Measured at Pepper Road 13th July 2023																									
Drill	109	81	85	85	85	85	90	87	89	89	86	90	89	95	96	87	88	91	100	97	98	99	99	101	102
Decontamination pumps	88	77	80	84	79	74	72	72	71	77	80	79	75	78	78	80	79	76	72	73	72	70	70	67	65

Appendix E

Noise Contour Plots

Predicted levels across the site and local area are presented in Figure A-5 to Figure A-7 for the existing, proposed and future site uses.

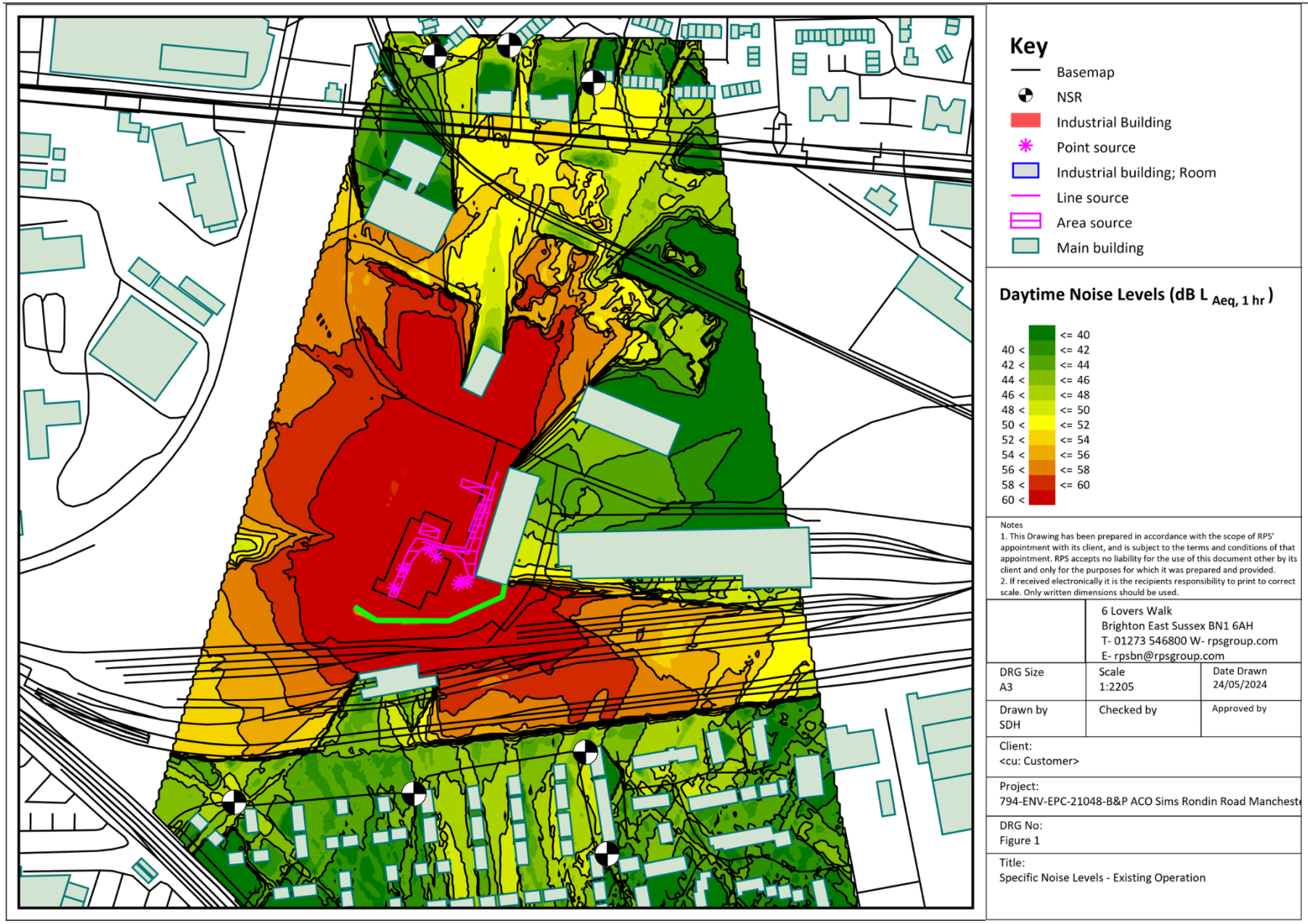


Figure A-5 Noise contour plot for Existing uses

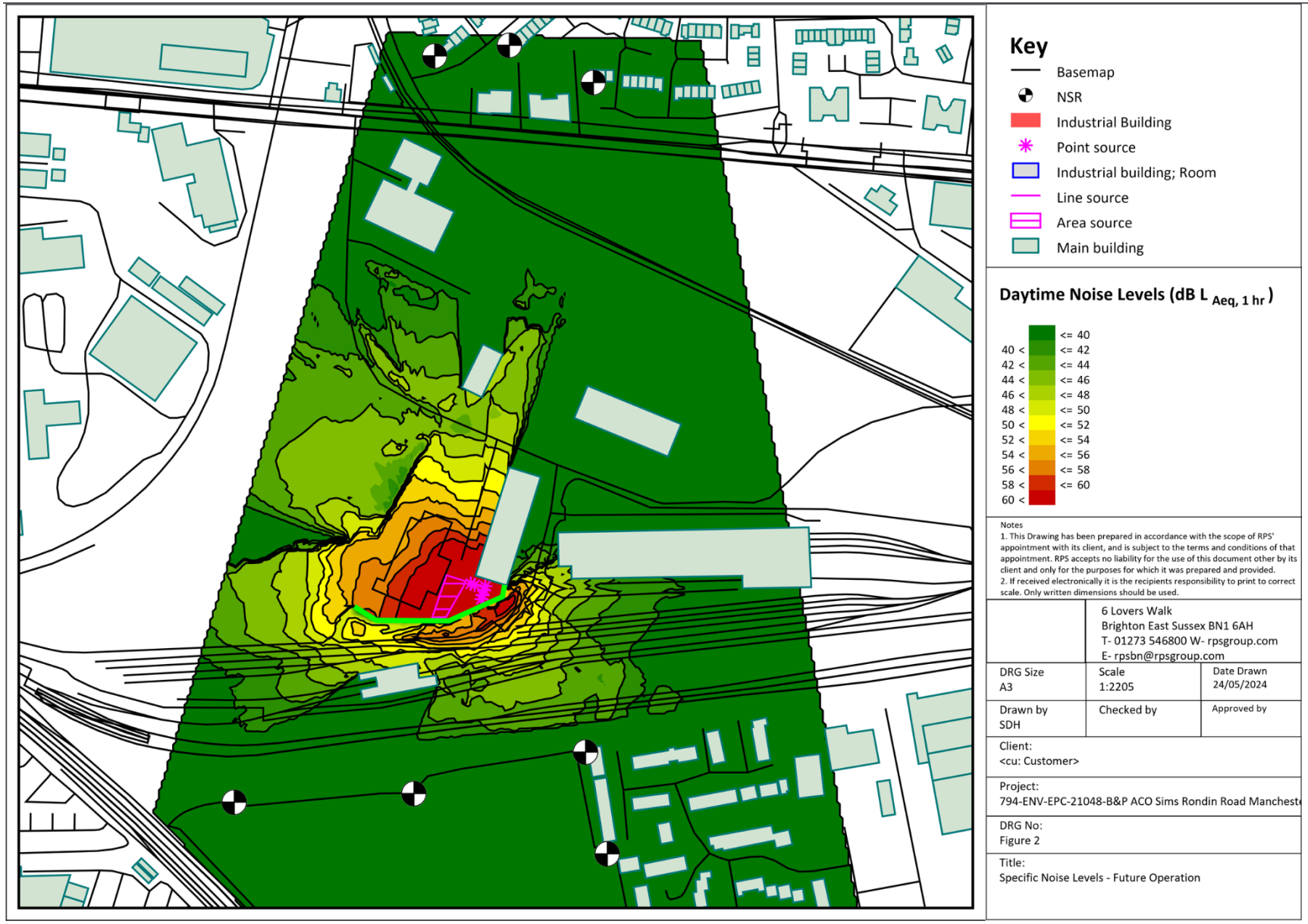


Figure A-6 Noise contour plot for Proposed uses

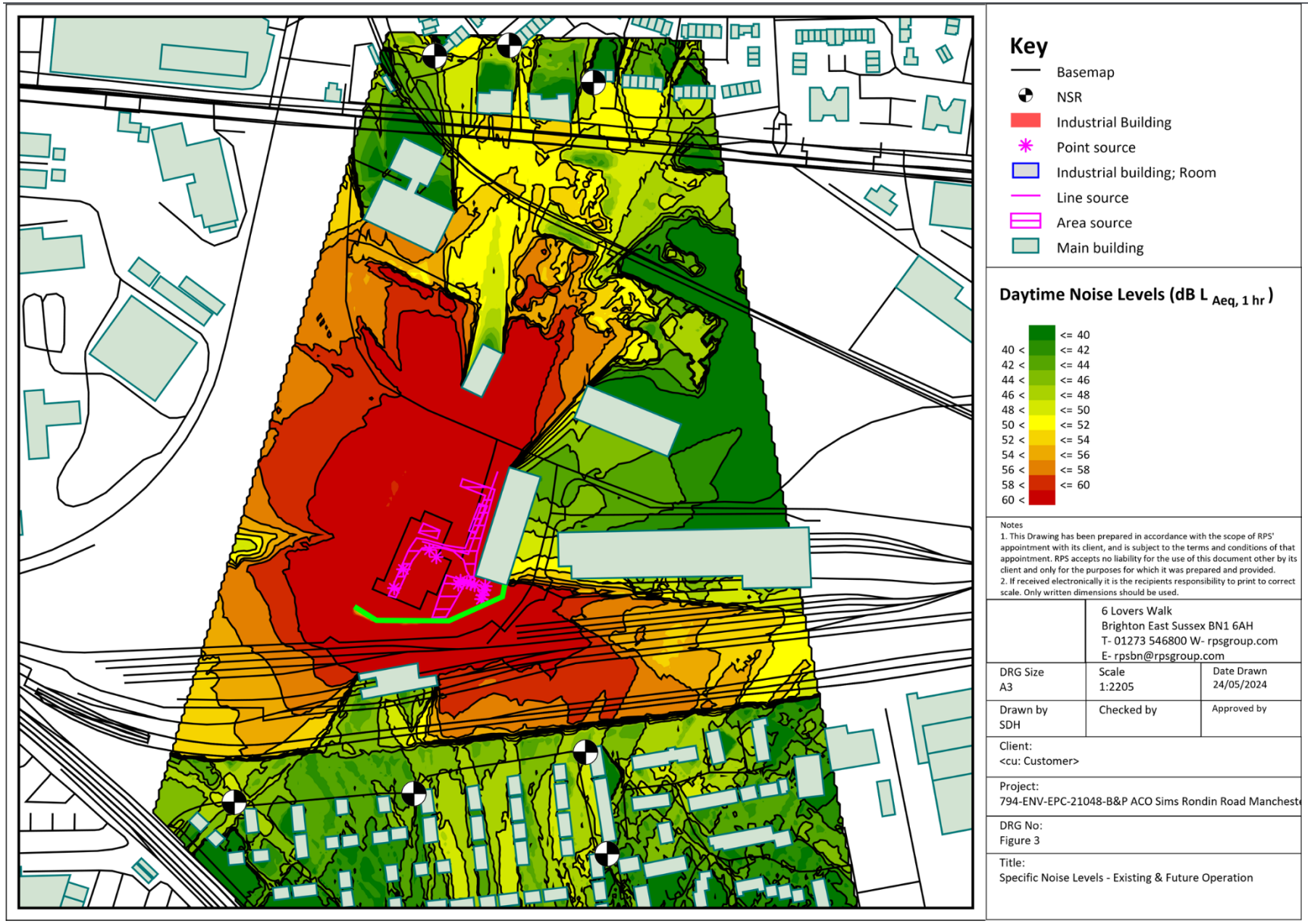


Figure A-7 Noise contour plot for Future uses

Appendix F

Modelling Assumptions

The noise emissions due to the proposed facility have been modelled using SoundPLAN v8.2 environmental noise prediction software. This model calculates the contribution from each noise source input as a specified source type (e.g. point, line, area) at selected locations. It predicts noise levels under light down-wind conditions based on hemispherical propagation, atmospheric absorption, ground effects, screening and directivity in accordance with the procedure provided in ISO 9613-2:1996.

The ground between the site and the receiver locations has been modelled as hard ground with a ground factor of G = 0.1. Terrain data has been entered into the model based on Digital Terrain Model 1 m contour layer. The nearest houses and buildings at the facility and surrounding estate, along with the large railway embankments have been included. Additionally, The Gateway housing development has also been included in the model.

Specific sound levels have been calculated at ground floor levels. The maximum predicted specific sound level per receptor has been used in the assessment. The same noise modelling techniques have been used by RPS on numerous sites in the UK and worldwide and there is a high degree of confidence in the model.

Appendix G

Technical Competence

This report has been prepared by Jonty Stewart MSc FHEA MIOA MIET, Associate Director in Acoustics. Jonty holds a Master's degree in environmental acoustics and has extensive experience in environmental noise measurement and assessment, including teaching the IOA Certificate of Competence in Environmental Noise Measurement professional qualification course.

Monitoring at Rondin Road was undertaken by Yanko Yankov MIOA, Senior acoustic consultant. Yanko has a bachelor's degree in engineering. He has worked in the filed of acoustics for over 7 years and has experience in environmental noise surveys, assessment and modelling.

This report has been reviewed by Peter Kowalczuk BEng (Hons) MIOA, Principal Acoustic Consultant, who also undertook the monitoring at the Sims facility at Pepper Road, Leeds.

This report has been authorised by Pamela Lowery MEng MSc MIOA PIEMA, Associate Director in Acoustics. Pam has in excess of 22 years of experience in acoustics, focussing on environmental noise modelling and assessment, as well as policy and standards development.

Appendix H

Relevant Policy, Legislation and Guidance

National Planning Policy

National Planning Policy Framework

The National Planning Policy Framework (NPPF) [iv] sets out the Government's planning policies for England and how these are expected to be applied. The emphasis of the Framework is to allow development to proceed where it can be demonstrated to be sustainable.

In relation to noise, Paragraph 180 of the Framework states:

"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;'…

Paragraph 191 of the NPPF states:

'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'…

Paragraph 193 of the NPPF states:

'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'

Noise Policy Statement for England

The Noise Policy Statement for England (NPSE) [v] aims to provide clarity regarding current policies and practices to enable noise management decisions to be made within the wider context, at the most appropriate level, in a cost-effective manner and in a timely fashion.

Paragraph 1.6 of the NPSE sets out the long-term vision and aims of Government noise policy:

"Noise Policy Vision

Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development."

"Noise Policy Aims

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

- *avoid significant adverse impacts on health and quality of life;*
- *mitigate and minimise adverse impacts on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life."*

The aims require that all reasonable steps should be taken to avoid, mitigate and minimise adverse effects on health and quality of life whilst also taking into account the guiding principles of sustainable development, which include social, economic, environmental and health considerations.

With regard to the terms 'significant adverse' and 'adverse' included in the 'Noise Policy Aims', these are explained further in the 'Explanatory Note' as relating to established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation which are:

"NOEL – No Observed Effect Level

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

LOAEL – Lowest Observed Adverse Effect Level

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

Defra has then extended these concepts for the purpose of the NPSE to introduce the concept of:

"SOAEL – Significant Observed Adverse Effect Level

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

The accompanying explanation states:

"It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available".

With regard to 'further evidence', Defra had commissioned research to try to identify the levels at which the above effects occur. However, this research has been largely inconclusive and varies with source. On this basis, and until further guidance becomes available, and given that there is no specific guidance in the NPPF on noise, there is no justification to vary assessment methods and criteria from those previously adopted from British Standards, etc.

Planning Practice Guidance – Noise (PPG-N)

The Planning Practice Guidance (PPG) (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2021) supports the NPPF and provides guidance across a range of topic areas.

The Planning Practice Guidance – Noise (PPG-N) provides outline guidance and refers to general guidance on noise policy and assessment methodology detailed in the NPPF, the Noise Policy Statement for England (NPSE), and British Standards.

The following guidance is presented within the PPG-N on how noise impacts may be determined:

"Plan-making and decision making need to take account of the acoustic environment and in doing so consider:

- *whether or not a significant adverse effect is occurring or likely to occur;*
- *whether or not an adverse effect is occurring or likely to occur; and*
- *whether or not a standard of amenity can be achieved."*

A noise exposure hierarchy is provided as supplementary guidance in tabular form and is recreated in Table A-4 below.

Table A-4 Summary of noise exposure hierarchy from NPSE and PPG-N

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

Response	Examples of Outcomes	Increasing Effect Level	Action
	deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.		

Environmental Permitting Regulations

Noise and Vibration Management: Environmental Permits

Most recently updated in January 2022, this guidance [vi] provides advice on how the Environment Agency (EA) assesses noise from industrial processes, what the law says must be done to manage noise and vibration, how to carry out a noise impact assessment and what should be included in a noise management plan (NMP). It replaces Horizontal Guidance for Noise (H3) Parts 1 and 2, and the Scottish Environmental Protection Agency (SEPA) Guidance on the control of noise at Pollution Prevention and Control (PPC) installations.

The guidance lists the reasons why regulation of noise is important, defines when an assessment is needed, and states required competency standards before presenting the approved methodology for undertaking a noise impact assessment, broken into the following four steps:

- **Step 1: desktop risk assessment**. This involves:
  - Identification of plant or operations that could be audible at any known or proposed NSR, including non-routine noise sources (e.g. emergency pressure relief / venting systems);
  - Description and ranking of noise sources in terms of off-site impact, noting what they sound like and when they operate;
  - Identification of current and proposed NSRs by name, type, location and distance from source;
  - Description of the land between the site and the NSRs and whether any man-made features could increase or decrease the audibility of the sound at the NSRs.
- **Step 2: off-site monitoring survey**, involving baseline measurements at NSRs to the standards defined in BS4142.
  - When considering overall site impact, background sound levels at NSRs must not be influenced by site noise;
  - In addition to assessment of the 'typical' impact required by BS4142, worst-case impact scenarios should also be considered, e.g. atypical sound sources, low background sound levels, or downwind propagation from the noise source;
  - When applying for a variation, the existing noise sources on the site (before changes) must not be included in the baseline background and residual sound levels. The existing and proposed sources should be considered as separate components, and combined to give a new total for the specific sound level at the receptor(s).
- **Step 3: source assessment**, involving quantification of the noisiest items of plant or operations identified in Step 1 and estimating / predicting their impact at the receptor using BS4142. Due consideration of uncertainty should be incorporated into the assessment.
  - Where modelling or calculation is used, they must comply with the requirements of 'ISO 9613 Acoustics – attenuation of sound during propagation outdoors' [vii] and the following must be provided alongside the assessment:
    - Statement of modelling/calculation assumptions;

- Copy of all modelling/calculation files (models to be submitted in original software format and, where possible, QSI data exchange format)
- Copy of numerical noise data (excluding terrain data) in a clearly labelled and concise spreadsheet.

- **Step 4: BAT or appropriate measures justification**, involving presentation of Best Available Techniques or appropriate measures and justification for their use in the context of the specific application. This includes:
  - Demonstration that emissions have been prevented or minimised as far as reasonably practicable with respect to:
    - The dominant noise sources (where necessary considered as sub-components within a system);
    - All existing noise attenuation measures (physical, managerial and maintenance);
    - Consideration of all reduction techniques for dominant noise sources and provide a reasoned determination of what is achievable;
    - As appropriate, prediction of the impact of upgrade works and commitment to a firm timescale;
    - Development of a noise management plan where there will be a noise impact beyond the site boundary.

The guidance also recommends that vibration be considered early in the process (i.e. during the Step 1 risk assessment) with the caveat that a vibration impact assessment must be completed if there is a risk of vibration outside the site boundary.

Guidelines for Community Noise

The World Health Organisation (WHO) published guidance on the desirable levels of environmental noise in 1999. In this document, Guidelines for Community Noise (GCN) [viii], the following advice is provided regarding external ambient sound levels during the daytime:

"To protect the majority of people from being seriously annoyed during the daytime, the outdoor sound level from steady, continuous noise should not exceed 55 dB LAeq on balconies, terraces, and outdoor living areas. To protect the majority of people from being moderately annoyed during the daytime, the outdoor sound level should not exceed 50 dB LAeq. Where it is practical and feasible, the lower outdoor sound level should be considered the maximum desirable sound level for new development."

The WHO guidelines were updated in 2018 with the release of the Environmental Noise Guidelines for the European Union (ENG) [ix]. The new guidelines apply specifically to transport, wind turbine and leisure noise, and for other sources refer back to the GCN.

Within Table 1 of the GCN, a number of criteria for community noise are expressed. The relevant criteria are summarised in Table A-5 below.

Table A-5 Guideline Values for Community Noise in Specific Environments

Specific Environment	Critical Health Effect(s)	$L_{Aeq,T}$	Time Base [Hours]	L_{Amax}
Outdoor living area	Serious annoyance, daytime and evening	55	16	-
	Moderate annoyance, daytime and evening	50	16	-
Dwelling, indoors	Speech intelligibility & moderate annoyance	35	16	-
Inside bedrooms	Sleep disturbance, night-time	30	8	45

Specific Environment	Critical Health Effect(s)	$L_{Aeq,T}$	Time Base [Hours]	L_{Amax}
Outside bedrooms	Sleep disturbance, window open (outdoor values)	45	8	60

REFERENCES

[i] British Standards Institution. British Standard 4142:2014+A1:2019. Methods for rating and assessing industrial and commercial sound.

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

[iii] The Acoustics Ventilation and Overheating Residential Design Guide, IOA & ANC. 2020.

[iv] Ministry of Housing, Communities and Local Government. The National Planning Policy Framework, 2023

[v] Department for Environment, Food and Rural Affairs. Noise Policy Statement for England. Defra. 2010.

[vi] Environment Agency. Noise and vibration management: environmental permits. 2022.

[vii] ISO. International Standard ISO 9613-2:1996. Acoustics - Attenuation of sound during propagation outdoors - Part 2: General method of calculation.

[viii] World Health Organisation. Guidelines for Community Noise. 1999.

[ix] World Health Organisation. Environmental Noise Guidelines for the European Region. 2018.