enzygo environmental consultants

Noise Impact Assessment

Wren Kitchens Transport Yard

Wren Kitchens, Falkland Way, Barton upon Humber, North Lincolnshire

Wren Kitchens

SHF.550.003.NO.R.004

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Noise Impact Assessment

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1 Introduction

1.1 Project Introduction

1.1.1 Enzygo Limited has been commissioned by Wren Kitchens Ltd to undertake an environmental noise impact assessment for the Wren Kitchens transport yard located on land off Victory Way, Barton-upon-Humber.

1.1.2 The assessment has been undertaken to address the requirements of Condition 9 of the planning consent and assess compliance with the relevant standards at the nearest noise-sensitive receptors.

1.1.3 Details of the assessment methodology employed, together with the results of the baseline surveys, assessment and conclusions are presented within this report.

1.2 Site Location

1.2.1 The site is located to the east of Barton-upon-Humber on Victory Way.

1.2.2 To the north of the site is scrubland with a rail line and wetlands beyond. To the east and southeast is the Bakkavor Pizza and Bread Barton factory and associated buildings. To the southwest is Falkland Way, with industrial/commercial buildings, scrubland, and Field View Day Nursery beyond. To the west is Victory Way with scrubland and Grayton industrial premises beyond.

1.2.3 The nearest noise-sensitive receptors to the site are to the southwest of the site, off Lower Meadow. The receptor location is identified in Figure 1-1 below and documented in Table 1-1.

Table 1-1: Nearest noise-sensitive receptors

NSR	Description	Distance from Site Boundary, m	Direction Relative to Site	Approximate OS Grid Co-ordinates	
				Easting	Northing
AL01	No.33 Lower Meadows	135	South west	503794	422537
AL02	Property on Pasture Road South	156	South east	504127	422420
AL03	Properties on Orangeleaf Way	230	South	504082	422331
AL04	Field View Day Nursery	50	West	503844	422613

1.2.4 It is noted that AL04 is a day nursery and only sensitive to noise during daytime hours.

Figure 1-1: Site Boundary and Assessment Locations

Google ©

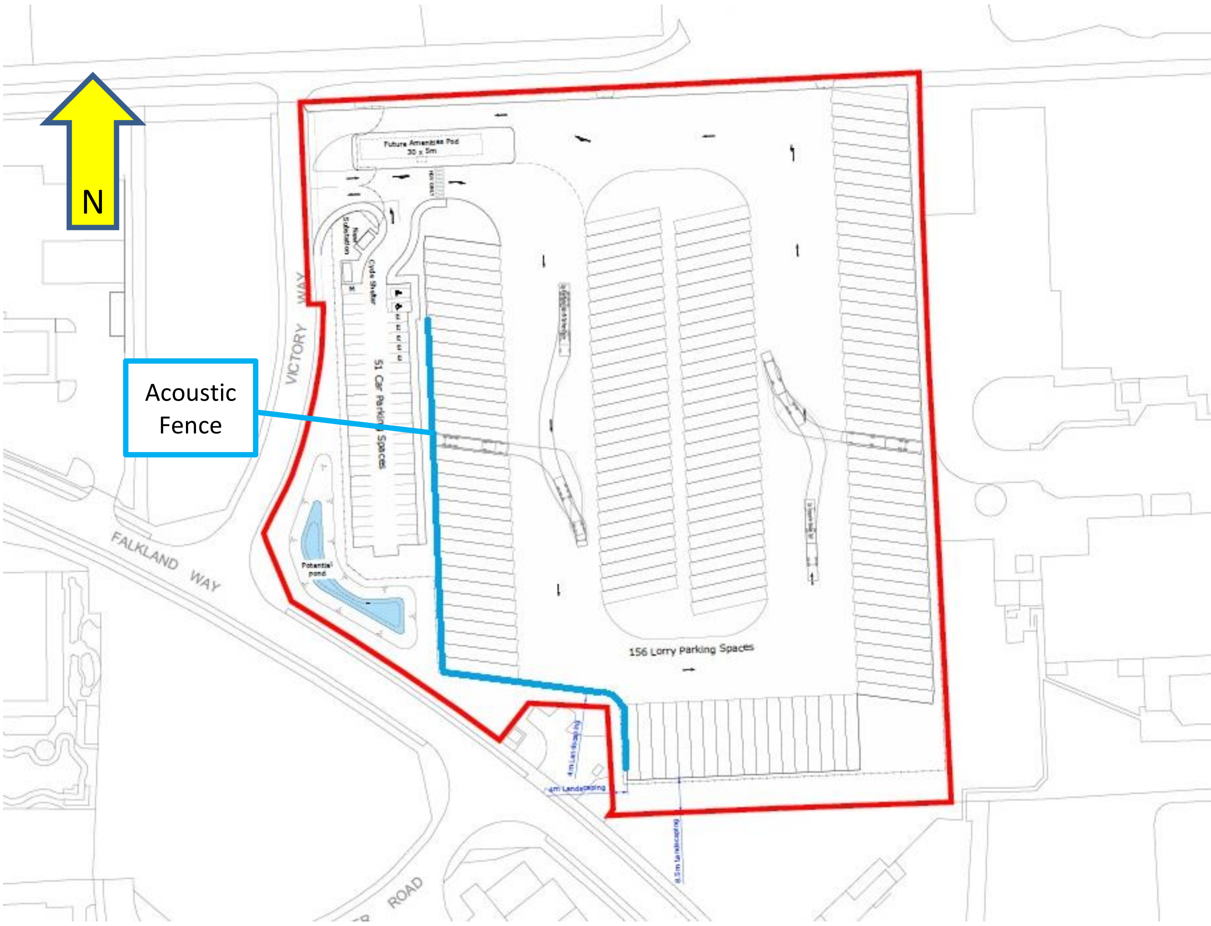
1.2.5 It is noted that the aerial photography is slightly out of date and the transport yard does not appear on the image above.

2 Scheme Description

2.1.1 The transport yard is a recent addition to the Wren campus, consented in April 2022 under application reference PA/2021/2257.

2.1.2 The site plan and red line boundary are presented on Figure 2-1 below.

Figure 2-1: Transport Yard Plan



2.1.1 The yard is accessed via barrier-controlled access road off Victory Way and operates a one-way system through the site.

2.1.2 Vehicles exit the site via the same access point, joining Victory Way, and on to Falkland way and the wider road network.

2.1.3 The facility operates as a transport hub for the fleet of wren vehicles, typically 4-axle vehicles and draw-bar trailer type HGVs and some smaller vehicles.

2.1.4 Discussions with the operatives on site indicate that the yard operates for 24hrs per day between 06:00hrs Monday and 06:00hrs Saturday. That said, vehicles tend to return to the yard before 01:00hrs, with few movements between 01:00hrs and 05:00hrs. Some of the longer distance journeys may begin around 05:00hrs, though typically vehicle movements start around 08:00hrs.

2.1.5 Management control measures have been introduced at the yard to limit noise generation at the site during the night-time period. These measures are discussed further below and detailed in the associated Noise Management Plan document reference SHF.003.NO.NMP.004.

2.1.6 The site design includes provision for a 4m tall robust acoustic fence around the southern and western aspects of the transport yard. The fence is designed to control noise emissions from the yard and ameliorate any resultant noise impacts at the closest receptor locations.

2.2 Planning Consent

2.2.1 Consent for the transport yard was granted in April 2022 under application reference PA/2021/2257. Condition 9 of the consent pertains to noise and states the following:

The development hereby approved shall not be brought into operation until a Noise Assessment and a Noise Management Plan have been submitted to and approved in writing by the local planning authority. The noise management plan shall include the following but not be limited to:

- *details of vehicle movements on site;*
- *likely noise levels associated with the vehicle movements identified; and*
- *noise mitigation measures to be employed and the resulting predicted level of noise at sensitive locations in relation to vehicle movements.*

The operation of vehicles on site shall take place in accordance with the approved noise management plan. No changes shall be made to the approved noise management plan unless agreed in writing by the local planning authority.

Reason

To protect residential amenity.

2.2.2 The condition above is a pre-commencement condition however was not discharged ahead of the site being brought in to operation.

2.3 Site Management Practices

2.3.1 The operators of the site have introduced several management control measures which are aimed at reducing instance of noise being generated across the site, particularly during the night-time period. A number of these are summarised below with further detail presented in the associated Noise Management Plan (NMP):

- Reversing alarms will be deactivated upon entering the site and will not be reactivated until after a vehicle has left;
- No vehicle will sound their horn while at the site;
- No shouting or raised voices are to be used at the site; and,
- Tug tests are to be performed prior to vehicles moving off.

3 Standards and Guidance

3.1 Introduction

3.1.1 The noise assessment of the transport yard has primarily been conducted in accordance with the guidance contained within British Standard 4142:2014+A1:2019 '*Method for rating and assessing industrial and commercial sound*' (BS4142).

3.1.2 Regarding the application of BS4142, the scope of the standard specifically states that it is applicable to the investigation of complaints but is not intended for the determination of '*noise amounting to a nuisance'*.

3.1.3 Noise levels generated by the proposed development have been predicted to the nearest noise-sensitive receptors, using the calculation methodology outlined in ISO9613:1996 '*Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation*' (ISO9613) using the proprietary noise modelling software CadnaA.

3.2 Planning Practice Guidance: Noise

3.2.1 The Planning Practice Guidance: Noise is the Government's online guidance on managing potential noise impacts from new developments.

3.2.2 The guidance includes a noise exposure hierarchy table which relates response to noise and example outcomes to effect levels. The hierarchy table also identifies actions required for each effect level.

3.2.3 Particularly relevant to this assessment are the No Observed Effect Level and the No Observed Adverse Effect Level (NOAEL) to which the guidance states:

Table 3-1: Noise Hierarchy Table Excerpt

Response	Example of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not present	No effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
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

3.2.4 It is noted that the guidance in the planning practice guidance is intended for new development rather than complaint investigation for consented sites however, in this instance, the response relationship identified in the hierarchy table provide a useful guide to the effect levels to audible noise.

3.3 British Standard 4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound.*

3.3.1 BS4142 provides a methodology for rating and assessing sound associated with both industrial and commercial premises. The Standard is based around the premise that the significance of the noise impact can be derived from the numerical subtraction of the background noise level from the measured/calculated rating level of the specific sound under consideration. This comparison will enable the impact of the specific sound to be concluded based upon the premise that typically "*the greater this difference, the greater the magnitude of the impact*". This difference is then considered as follows:

- A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- A difference of around +5dB is likely to be an indication of an adverse impact, depending upon 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.

3.3.2 BS4142 further states that "*where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact*" again depending upon the specific context of the site. The Standard further qualifies the assessment protocol by outlining conditions to the comparative assessment and stating that "*not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact*", thus implying that all sites should be assessed on their own merits and specifics.

3.3.3 The Standard outlines methods for defining appropriate "*character corrections*" within the rating levels to account for tonal qualities, impulsive qualities, other sound characteristics and/or intermittency. These are a) the Subjective Method, b) the Objective Methods for tonality and c) the Reference Method. It is noted by the Standard that where multiple features are present the corrections should be added in a linear fashion to the specific level.

3.3.4 The Subjective Method is based on the following corrections:

Table 3-2: BS4142 Subjective Method Rating Corrections

Level of Perceptibility	Tonal Correction	Impulsivity Correction	Correction for "Other sound characteristics"	Intermittency Correction
No Perceptibility	+0 dB	+0 dB	Where neither tonal nor Impulsive but clearly identifiable +3 dB	If intermittency is readily identifiable +3 dB
Just Perceptible	+2 dB	+3 dB		
Clearly Perceptible	+4 dB	+6 dB		
Highly Perceptible	+6 dB	+9 dB		

3.4 ISO9613 *Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation*

3.4.1 The noise levels generated by the operation of the proposed development have been predicted using the calculation methodology set out in ISO9613-2. The methodology considers the distance between the sources and the receptors and applies the amount of attenuation due to atmospheric absorption and other site-specific characteristics.

3.4.2 The methodology assumes downwind propagation, i.e., a wind direction that assists the propagation of noise from the source to all receptors.

3.5 BB93 - Acoustics design of schools: performance standard Building bulletin 93 – February 2015

3.5.1 BB93 sets out minimum performance standards for the acoustics of school buildings and provides guidelines for Internal Ambient Noise Level (IANL) in educational settings.

3.5.2 It is noted that BB93 only applies to nurseries which are part of a wider school complex, not stand alone, nursery settings which is the case in this instance. Notwithstanding this, the guideline IANL for Nursery School rooms in new buildings, 35dB $L_{Aeq,30mins}$, has been referenced in these assessments.

3.6 Other Guidance

3.6.1 Noise of an impulsive nature as addressed by BS4142, would warrant a correction factor based on the perception at the receptor location(s).

3.6.2 While this is useful approach, it still relies on the correction factors being applied to time averaged noise levels, i.e., the L_{Aeq} values. The standard does not consider the impact of specific, high level noise events typically represented by the L_{Amax} parameter.

3.6.3 With this regard, reference has been made in this assessment to the guidance detailed in BS8233 and the WHO Guidelines for Community Noise as it relates to sleep disturbance. These guidance documents indicate impacts including sleep disturbance occur when internal noise levels exceed 45dB L_{Amax}.

4 Baseline Noise Monitoring Survey

4.1 Introduction

4.1.1 As part of these assessments, a number of noise monitoring surveys have been undertaken in the vicinity of the transport yard both prior to and following first operation.

4.1.2 The initial survey was undertaken between March and April 2022 and utilised shorter duration, attended measurements at the locations identified below. This survey was undertaken prior to the transport yard being constructed and brought in to operation.

4.1.3 A second survey was undertaken in April 2023, after the yard was brought into operation, prior to construction of the 4m acoustic fence. The survey was undertaken by means of unattended noise monitoring stations to quantify noise levels over several concurrent days and nights. In addition, shorter duration, attended measurements were made during this survey, within the operational transport yard, to quantify noise from several activities in the vicinity.

4.1.4 The surveys utilised different monitoring locations. The locations used during the initial survey have the prefix IMP. The locations used during the second survey have the prefix NMP. These are identified in Figure 4-1 below:

Figure 4-1: Site Boundary and Monitoring Locations

4.1.5 The locations presented above are detailed in Table 4-1 below.

Table 4-1: Noise Monitoring Locations

Ref	Description	Distance from Site Boundary, m	Approximate OS Grid Co-ordinates	
			Easting	Northing
IMP1	Lower Meadows	90	503869	422527
IMP2	Pasture Road South	155	504129	422421
IMP3	Orangeleaf Way	265	504159	422330
IMP4	Field View Day Nursery	50	503844	422615
NMP1	Site Boundary	N/A	503906	422613
NMP2	Barton Town Football Club	155	503759	422547

4.1.6 At each monitoring location, the measurement microphone was fitted with a suitable windshield and set to a height of 1.5m above local ground level in free field conditions, at least 3.5m from the nearest vertical reflecting façade.

4.1.7 The noise monitoring equipment used during both surveys is shown in Tables 4-2 and 4-3 below. In all instances the monitoring equipment was set to record a number of parameters, including the $L_{Aeq,T}$, L_{A90}, L_{A10} and L_{AFmax}.

Table 4-2: Survey Equipment - Initial Survey

Location Reference	Equipment Description	Serial Number	Calibration Date Prior to Survey	Calibrator Reference Level
IMP1	Cirrus CR171B Class 1 sound level meter	G301158	Nov 2021	93.7dB
IMP1, IMP3, IMP4	01dB Black Solo Class 1 sound level meter	65396	Feb 2022	94dB
IMP2	01dB Black Solo Class 1 sound level meter	65445	March 2020	94dB
All	Cirrus CR:515 Acoustic calibrator	59522	Feb 2022	--

Table 4-3: Survey Equipment – Second Survey

Location Reference	Equipment Description	Serial Number	Calibration Date Prior to Survey	Calibrator Reference Level
NMP1	Svan 971 Sound Level Meter	55531	Nov 2022	94dB
NMP2	Rion NL52 Sound Level Meter	520990	Aug 2022	94dB
All	Rion NC-75 Calibrator	34724233	Aug 2022	--

4.1.8 In all instances, the sound level meters were field calibrated using an electronic calibrator, prior to commencement and upon completion of the overall survey. No significant drift in calibration was noted. The external calibration documentation for the equipment used is available upon request.

4.2 Initial Survey

4.2.1 The initial survey was undertaken on Sunday 6th March, with additional measurements undertaken on Sunday 24th, Tuesday 26th and Wednesday 27th April 2022.

Weather

4.2.2 The weather conditions during the survey are detailed in Table 4-4 below:

Table 4-4: Weather Conditions

Date	Precipitation	Cloud Cover	Max. wind-speed	Wind Direction	Temperature
6th March	None	80%	<5ms^{-1}	NW	8°C
24th April	None	40%	<5ms^{-1}	NE	7°C
26th April	None	100%	<5ms^{-1}	NE	10°C
27th April	None	100%	<5ms^{-1}	N	8°C

4.2.3 The weather conditions detailed above are within appropriate tolerances for surveys and would have no detrimental effect on the measured data.

Survey Results

4.2.4 The data established during the initial survey, covering both weekend and weekday periods, is summarised in Table 4-5 below.

Table 4-5: Initial Survey Data Summary

Location	Period	Duration Hh:mm	L_{Aeq}, dB[a]	L_{Amax}, dB[b]	L_{A90}, dB[c]	L_{A10} dB[c]
IMP1	Daytime	03:45	52.1	80.1	42.9	51.3
	Night	01:00	42.3	55.6	38.9	43.9
IMP2	Daytime	13:00	53.8	77.8	47.3	56.2
	Night	06:00	51.0	67.9	45.3	51.5
IMP3	Daytime	04:45	58.4	77.8	47.6	60.0
	Night	05:45	51.4	77.3	44.5	49.5
IMP4	Daytime	02:00	67.6	82.2	44.7	72.7

Notes:
a) Logarithmic average presented;
b) Maximum measured value presented; and,
c) Arithmetic average presented.

Subjective Field Notes

4.2.5 At positions IMP1 and IMP2 the noise climate was controlled by traffic movements on the surrounding road network. In addition, plant noise emanating from buildings on Ardent Road affected the measured levels.

4.2.6 At position IMP3 the noise climate was controlled by traffic on Falkland Way, with plant noise emanating from existing operations at the Wren Kitchens site also affecting the measured levels.

4.3 Second Survey

4.3.1 The second noise survey was undertaken once the transport yard had been brought in to operation and measured noise levels over a longer duration, at two locations in the vicinity. It is noted that the 4m acoustic fence had not been constructed at the time of the survey.

Weather

4.3.2 The observed weather conditions during the attended portions of the survey are detailed in Table 4-6 below:

Table 4-6: Weather Conditions

Date	Precipitation	Cloud Cover	Max. wind-speed	Wind Direction	Temperature
17th April 2023	None	<10%	None / still	N/A	14°C
17th April 2023 – Night	None	60%	None / still	N/A	8°C

4.3.3 During the unattended portions of the survey, no direct observations of the prevailing weather conditions were made. As such, publicly available, historical weather data[1] has been used. This data is from Humberside Airport, located approximately 12.5km to the south, southeast of the site.

4.3.4 The weather data is summarised as follows:

- 18th April – Ambient air temperatures range between 7°C and 14°C. No Rain. Wind speeds up to 8ms with from an ENE direction;
- 19th April – Similar to previous day. Ambient air temperature range between 7°C and 13°C. No Rain. Wind speeds up to 10m/s from an Easterly direction; and,
- 20th April – Ambient air temperature between 4°C and 13°C. No rain. Wind speeds up to 10m/s from an ENE direction.

4.3.5 The recorded weather during the survey would have no detrimental effect on the measured noise levels.

Survey Results

4.3.6 The data established during the second survey is summarised in Table 4-7 below. As above, the data is summarised over the whole survey period, not broken down into each day period.

[1] https://www.wunderground.com/history/daily/gb/ulceby/EGNJ/date/2023-4-17

Table 4-7: Second Survey Data Summary

Location	Period	Duration Hh:mm	L_{Aeq}, dB[a]	L_{Amax}, dB[b]	L_{A90}, dB[c]	L_{A10} dB[c]
NMP1	Daytime	45:45	61.4	89.2	48.9	64.8
	Night	24:00	55.1	81.6	41.7	52.3
NMP2	Daytime	45:45	51.8	86.4	44.9	53.5
	Night	24:00	45.4	70.3	39.8	45.8

Notes:
d) Logarithmic average presented;
e) Maximum measured value presented; and,
f) Arithmetic average presented.

4.3.7 The measured ambient (L_{Aeq}) noise levels at NMP1 are higher than at NMP2 during both the daytime and night, due in part, to the proximity to the operational site, Falkland Way and the industrial/commercial uses in the area.

Subjective Field Monitoring Notes

4.3.8 During the daytime period, the prevailing noise climate was considered reasonably representative of an industrial/commercial area with sporadic vehicle movements on Falkland Way and an underlying baseline of plant noise from various operators. Other noises of note included bird song and passenger vehicles on Falkland way.

4.3.9 During the early night-time period on 17th April, the general night-time noise climate was noted to include distant road traffic noise and plant noise from the existing Wren Kitchens facility. Plant noise was perceived as a low-level hum/process sound which operated at a constant level, with no tonal or intermittent elements.

4.3.10 Vehicle movements in the transport yard were sporadic in nature, with six vehicles accessing the yard during the attended period. The vehicles proceeded to their loading/unloading locations and engines were switched off when stationary. One instance of a reversing alarm was recorded though this was in error due to a technical issue with the alarm system.

4.3.11 The vehicles undertook a number of operations while on site including loading/unloading of 'boxes' and coupling to trailer units. These included a number of bangs and clangs and air releases from pneumatic systems.

4.3.12 Subjectively, the 'loudest' noise events experienced on site related to the coupling of the trailer. This was experienced as a short duration, loud 'clunk' sound as the trailer arm docked with the trailing arm. During the site visit this was noted to occur three times in the space of approximately 30-minutes.

4.3.13 All activities in the transport yard were completed by 01:00 hrs on 18th April.

4.3.14 At locations in the vicinity of the receptors, noise from the facility was audible though only as sporadic, low-level bangs and clangs. Some engine noise was audible during lulls in other environmental noise, though it was not subjectively considered to be of a level which would result in disturbance. It is noted that the subjective appraisal at the receptors was undertaken at ground floor level. The perception at first floor may be different.

4.4 Typical Pre-operation Background Noise Level

4.4.1 The noise levels established during the Initial survey are considered indicative of the pre-operational climate in the vicinity of the site. These levels have been used to establish the potential noise impact of the facility in accordance with BS4142.

4.4.2 In this regard, the standard states:

'In using the background sound level in the method for rating and assessing industrial and commercial sound it is important to ensure that values are reliable and suitably represent both the particular circumstances and periods of interest. For this purpose, the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods. '

4.4.3 In this regard, analysis of the measured L_{A90} values from the Initial survey has been undertaken for both the daytime and night-time periods.

Table 4-8: Background Noise Level

Location	Period	Minimum Measured, dB	Maximum Measured, dB	Arithmetic Average, dB	Mode (Most Common Integer), dB	Typical, dB
IMP1	Daytime	40	48	43	45	43
	Night	38	41	40	41	40
IMP2	Daytime	43	50	47	48	48
	Night	41	51	45	46	46
IMP3	Daytime	44	53	48	45	45
	Night	43	48	45	44	44
IMP4	Daytime	42	47	45	45	45

4.4.4 The typical background sound level is generally derived from the arithmetic average or modal integer values depending on the context of the setting.

4.4.5 In the interests of clarity, the monitoring locations relate to the assessment locations as follows:

- IMP1 – AL01;
- IMP2 – AL02;
- IMP3 – AL03;
- IMP4 – AL04.

4.5 Attended Onsite Survey

4.5.1 To augment the surveys above, additional, shorter duration measurements were made within the operational transport yard, to quantify the noise generated by specific activities. The measurements were made for between 10- and 60-seconds at distances of 3.5m to 11m from the identified noise sources.

4.5.2 The measurements were made in 1/3rd octaves, in free field locations, with a clear line of sight to the perceived source of the noise. The measurements were made using a Rion NL52 class 1 sound level meter (Serial number 721020) which was field calibrated using a Rion NC-75 Calibrator (Serial number 34724233).

4.5.3 The measurements were made during the night-time period on 17th April 2023, between 23:00 and midnight when other operations in the area and general traffic movements, etc., were lower. Every effort was made to minimise the impact of extraneous noise.

Attended Survey Results

4.5.4 The measurements were made to cover the perceived duration of the specific noise source and every attempt was made to reduce the influence of other noise sources in the vicinity.

4.5.5 The measured data is summarised in Table 4-9 below. The noise levels reported are 'as measured' and have not been corrected for the residual noise climate.

Table 4-9: Summary of Operational Noise Levels

Noise Source	Duration sec	Distance m	$L_{Aeq,T}$ dB	L_{Amax} dB	Measured L_{Aeq}, in Octave Bands, Hz							
					63	125	250	500	1k	2k	4k	8k
Vehicle Idling	60	3.5	74.1	78.6	70.6	75.2	64.8	69.1	68.7	68.2	65.3	58.0
Unloading Box	40	3.5	72.3	91.4	70.1	69.6	61.8	66.0	65.7	67.0	63.7	61.2
Start-up/ move off	34	3.5	72.4	81.9	71.1	72.0	64.6	67.3	66.6	66.5	63.3	57.5
Loading Box	120	3.5	62.6	89.1	59.3	61.5	57.7	58.0	59.9	55.1	52.4	44.9
Reverse Alarm	37	11	64.6	68.5	64.3	63.5	58.3	60.3	57.5	58.8	56.9	48.3
Air Release	38	3.5	65.4	74.7	61.6	63.6	56.8	55.9	56.1	58.0	60.2	58.9
Lowering Trailer Foot	9	3.5	71.4	81.8	59.7	61.4	59.7	58.5	59.5	68.9	60.0	59.2
Coupling Trailer	21	3.5	81.6	99.8	74.2	73.2	72.9	75.2	77.0	75.4	73.2	65.8

4.6 L_{Amax} Event Analysis

4.6.1 The second survey at the site, undertaken in April 2023 includes noise arising from the operational transport yard. This was noted to include several impulsive events which were perceptible beyond the site boundary.

4.6.2 The L_{Amax} events reported in Table 4-7 represent the maximum recorded L_{Amax} events during the respective periods over the whole survey, but do not provide much information on the range, timing, or frequency of events.

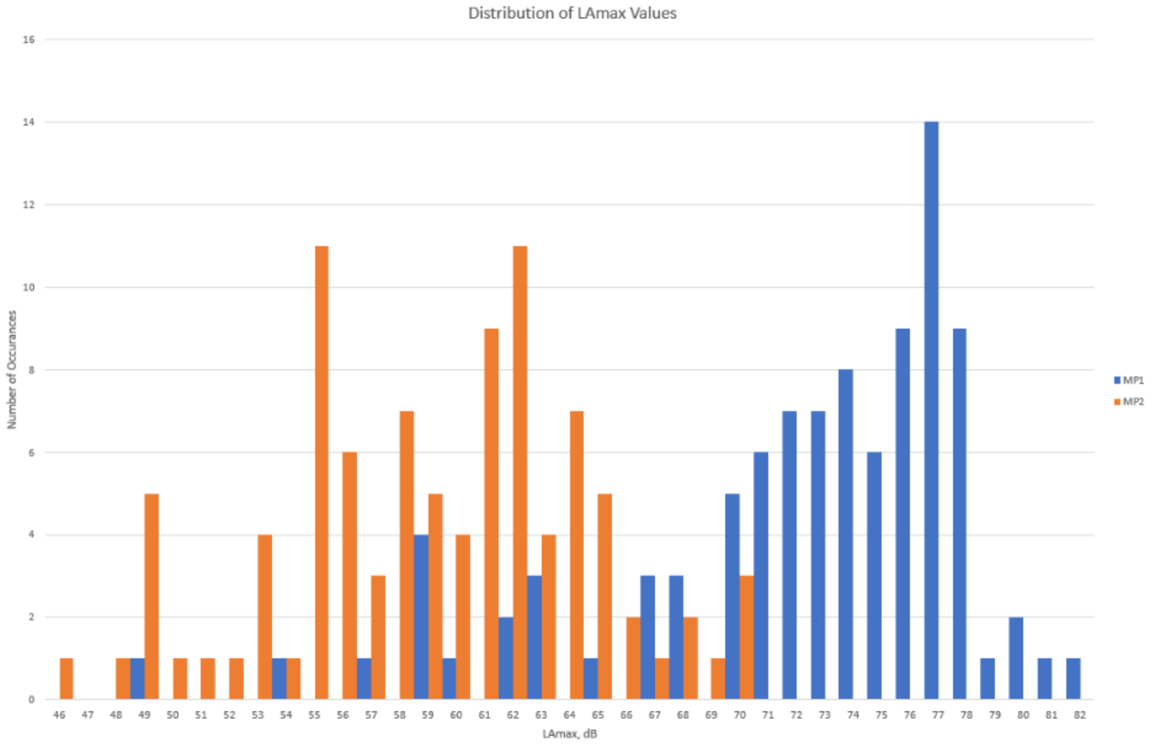
4.6.3 The L_{Amax} data during the night-time periods, at the two monitoring locations (NMP1 and NMP2) are summarised in Table 4-10 below.

Table 4-10: Night-time L_{Amax} Values

Parameter	Location MP1	Location MP2
Minimum Measured	48.7	45.6
Maximum Measured	81.6	70.3
Arithmetic Average	72.2	59.1
Most Common Integer	77.0	62.0

4.6.4 The distribution of the L_{Amax} values is presented in Figure 4-2 below:

Figure 4-2: Distribution of Night-time L_{Amax} Values



4.6.5 Evidently there is a marked difference between the two locations due primarily to the locations and the respective distances to various noise sources. NMP2 is removed from roads and other sources of noise and therefore L_{Amax} events are generally lower.

4.6.6 With specific regard to the distribution of values at location NMP2, there are two peaks in the distribution; one at 55dB L_{Amax} and a second at 62dB L_{Amax}. Further analysis of this distribution indicates that the lower of the two values (55dB L_{Amax}) tends to relate to the period 01:00 hrs to 05:00 hrs and the higher correlates to the other portions of the night. To this end, it could be interpreted that the higher values relate to activities at the transport yard though it doesn't infer where or what specific events it relates relate to.

5 Transport Yard Noise Assessment

5.1 Introduction

5.1.1 This section of the report outlines the assessment of noise generated by the transport yard at the identified receptor locations. This has been facilitated by analysis of the measured data and predictive assessments based on the methodology outlined in ISO9613. The assessment of noise impacts at the residential receptors has been undertaken in accordance with BS4142.

5.2 Site Operations

5.2.1 The assessments presented in this section of the report include noise from vehicle movements in the transport yard and other operations including coupling/uncoupling trailer units. It is noted that factors such as reversing alarms, raised voices, etc., would be controlled by management practices. Furthermore, the transport yard does not facilitate any loading/unloading of trailers therefore does not operate any forklift trucks, etc.

5.2.2 The noise levels used for the various operations are detailed in Table 5-1 below.

Table 5-1: Modelled Source Emissions

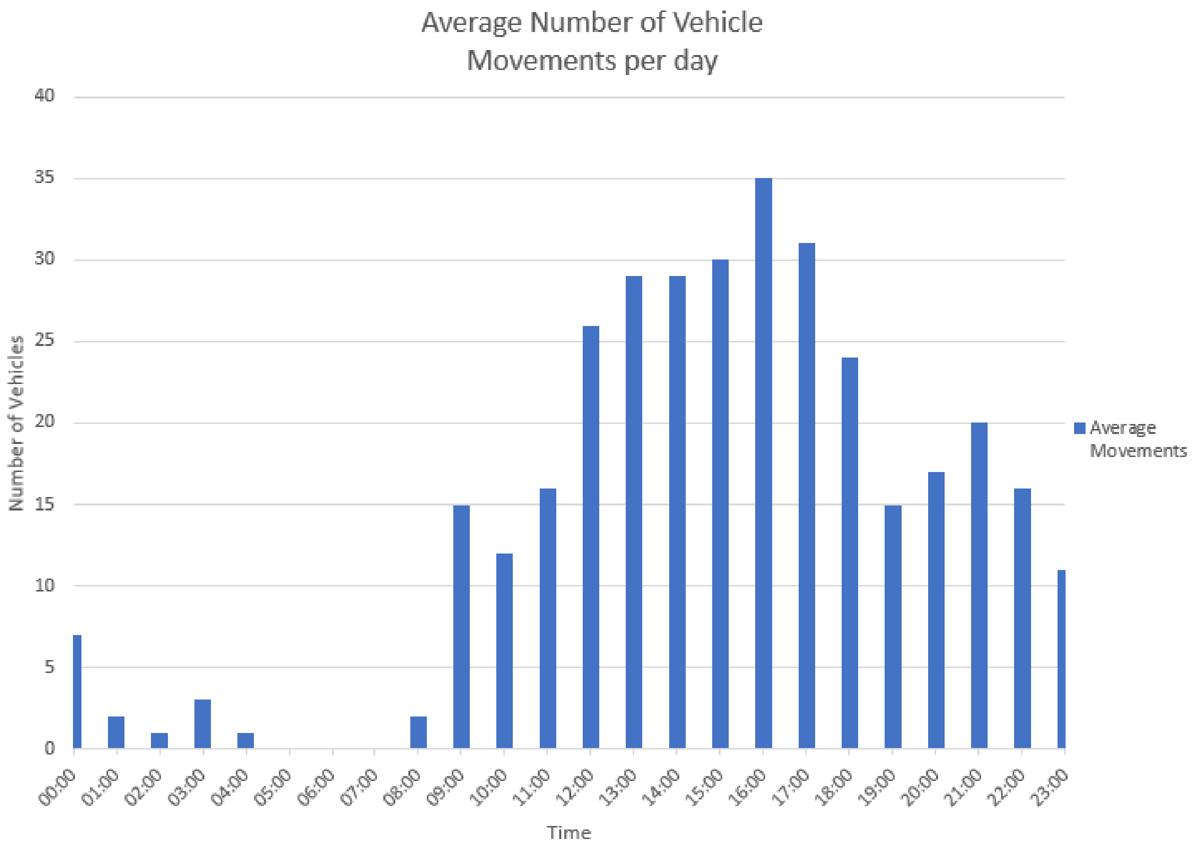
Description	Sound Power Level, Hz								dB(A)
	63	125	250	500	1k	2k	4k	8k	
HGV manoeuvre a)	102	93	88	91	92	91	84	75	96
Coupling / uncoupling b)	94	93	93	95	97	95	93	86	101
Air release b)	81	83	76	75	75	77	79	78	84
Note: a) HGV noise source taken from Enzygo library data; b) Activity noise source taken from Table 4-9 above.									

5.2.3 The resulting predicted specific sound levels have then been assessed in accordance with the guidance contained in BS4142.

HGV Movements

5.2.4 Information provided by Wren details the movement of vehicles within the transport yard over a typical 5-day week. Vehicles access the site at all hours of the day during the working hours (06:00hrs on Monday to 06:00hrs on Saturday). Figure 5-1 below charts the average number of vehicles accessing the transport yard in a typical 24hr period.

Figure 5-1: Average Vehicle Movements per 24hr Period



5.2.5 The chart above demonstrates that vehicle movements around the transport yard peak at around 16:00hrs, with an average number of vehicle movements during this period of 35 per hour. The maximum number of vehicle movements in any one hour is 46.

5.2.6 From 18:00hrs vehicle movements become less frequent and beyond 23:00hrs there are less than 10 vehicles per hour.

5.2.7 As indicated above, vehicles access the site and follow a one-way system through the yard. All coupling/uncoupling activities are undertaken to the west of the yard area, close to the acoustic fence.

5.3 Noise Modelling

5.3.1 The noise model was constructed using the proprietary noise modelling software package CadnaA. The potential noise impacts at the nearby noise-sensitive residential receptors have been predicted using the calculation methodology outlined in ISO9613.

5.3.2 The noise model was constructed using Google Maps geo-referenced 1:1 scaled aerial photography and noise source data from previous measurements. Topographical information is based on Ordnance Survey Terrain 50 data.

5.3.3 The model makes the following assumptions:

<u>Daytime – 1-hour assessment</u>

- Peak hour vehicle movements (46 per hour);

- 46no. air releases; and,
- 23no. coupling/uncoupling events.

Night-time – 15-minute assessment

- 2no. HGV movements;
- 1no. coupling event;
- 2no. air releases.

5.3.4 HGV movements have been modelled as a moving point source at a height of 0.5m above local ground. The source is modelled as progressing through the site, within the site boundary area, with a speed assumed to be 10mph (16kph).

5.3.5 Air releases and coupling/uncoupling are modelled as point sources at 0.5m above ground level. For the purposes of the calculations, these noise events are transient events with short period on-time corrections applied. For the coupling, this is considered to last approximately 20-seconds; for the air release, 5-seconds.

5.3.6 In addition to the above, the following assumptions have been made during the modelling process:

- 0% ground absorption across the site and road system and 100% ground absorption across grassed areas external to the site;
- Reflection order has been set to two.

5.4 Predicted Sound Levels

5.4.1 Noise levels generated by the proposed development have been predicted to the nearest identified noise-sensitive residential receptors identified in Table 1-1 above.

5.4.2 It is noted that the BS4142 methodology is not intended to *'assess the extent of the impact at indoor locations'*. As such, within the scope of this assessment, the BS4142 assessment considers receptors at level, 1.5m above local ground level, in free field conditions. Further consideration of impacts during the night are presented in subsequent sections of this report.

5.4.3 Table 5-2 details the results for noise emanating from the Transport Yard.

Table 5-2: Predicted Specific Sound Levels at the Noise-Sensitive Receptors

Location	Period	Specific Sound Level $L_{Aeq,T}$ dB
AL01 – Long Meadow	Daytime	27
	Night	15
AL02 – Pasture Road	Daytime	24
	Night	11
AL03 – Orangeleaf Way	Daytime	23
	Night	11
AL04 - Nursery	Daytime	35

5.5 Sound Rating Level

5.5.1 In accordance with the guidance contained in BS4142 the specific sound level must been corrected for tonal, impulsive, intermittent or other acoustic characteristics, which may be present at the receptors, to determine the sound rating level.

5.5.2 Noise associated with vehicle movements are not out with the current noise climate in the area therefore would not warrant any correction factor. The coupling / uncoupling and air release events are considered impulsive in nature, being short duration, high noise level events. Given the predicted specific noise levels, these events are considered, at worst, to be 'clearly perceptible', affording a +6dB correction to the specific noise level.

5.5.3 The sporadic nature of vehicles arriving at the transport yard could be considered intermittent. As such, this would warrant a +3dB correction.

5.5.4 In total. 9dB of character corrections have been applied in the derivation of the rating noise level. Table 5-3 details the sound rating levels used in the subsequent assessments.

Table 5-3: Sound Rating Levels

Location	Period	Specific Sound Level dB $L_{Aeq,T}$	Penalties Applied, dB	Sound Rating Level dB $L_{Ar,T}$
IMP1 - Properties on Lower Meadows	Daytime	27	+9	36
	Night	15	+9	24
IMP2 - Property on Pasture Road South	Daytime	24	+9	33
	Night	11	+9	20
IMP3 - Properties on Orangeleaf Way	Daytime	23	+9	32
	Night	11	+9	20
IMP – Field View Nursery	Daytime	35	+9	44

5.6 BS4142 Initial Estimate of Impact Assessment

5.6.1 The predicted sound rating levels have been assessed against the typical background noise levels in accordance with the guidance contained in BS4142. Table 5-4 details the results of the assessment.

Table 5-4: BS4142 Assessment

Location	Period	Typical Background Noise Level dB $L_{A90,T}$	Sound Rating Level dB $L_{Ar,T}$	Difference dB
IMP1 - Properties on Lower Meadows	Daytime	43	36	-7
	Night	40	24	-16
IMP2 - Property on Pasture Road South	Daytime	48	33	-15
	Night	46	20	-26
IMP3 - Properties on Orangeleaf Way	Daytime	45	32	-13
	Night	44	20	-24
IMP4 – Field View Nursery	Daytime	45	44	-1

5.6.2 Table 5-4 shows that the predicted sound rating levels at the nearest noise-sensitive receptors are below the prevailing background noise level indicating that operations at the transport yard would have a low impact at all the nearest noise-sensitive residential receptors, depending on the context.

5.7 Context

5.7.1 BS4142 states that where the initial estimate of impact needs to be modified due to the context, all pertinent factors should be taken into consideration.

The Absolute Level of Sound

5.7.2 The specific sound levels during both the daytime and night-time periods would fall well below the prevailing ambient noise climate prior to construction of the facility. This would infer that the noise sources are largely masked by the existing noise climate though noise events may still be audible.

5.7.3 Further to this, the site is located in an existing industrial/commercial area where frequent goods vehicle movements are already a feature of the prevailing noise climate.

5.7.4 Based on the above, the context should not affect the initial estimate of impact. Therefore, noise from the transport yard would have a low impact when assessed in accordance with BS4142.

5.8 Nursery Impact Assessment

5.8.1 The assessment presented in Table 5-4 demonstrates that noise from the yard would fall below the background sound levels at the nursery and would result in a low noise impact in accordance with BS4142.

5.8.2 The day nursery is located off Falkland Way, in reasonably close to the junction with Victory Way (approximately 35m), where vehicles from the transport yard would be accessing/departing the site.

5.8.3 Enzygo library data for HGVs moving off, etc., gives a noise level of approximately 66dB at a distance of 20m. If this is assumed as a point source (stationary/vehicle moving off) then the noise levels at the nursery would be 61dB L_{Aeq}.

5.8.4 This level would fall approximately 6dB below the existing ambient sound level at the nursery. Assuming the nursery has been designed to suitably address the current level of noise ingress, the ability to achieve 35dB $L_{Aeq,30mins}$ would not be compromised by the transport yard.

5.9 Noise Event Assessment

5.9.1 As discussed in subsection 3.6, the BS4142 assessment considers impulsive events through the application of a weighting factor applied to a time averaged value during the respective assessment periods, i.e., 15-minutes during the night.

5.9.2 In this regard, the noise events, represented by the L_{Amax} parameter, could be overlooked in the assessment and the potential for impacts such as sleep disturbance under represented.

5.9.3 The assessment in subsection 4.6 above gives noise events from current operations at the transport yard of around 62dB to 65dB L_{Amax} without the 4m acoustic fence. With open window ventilation, this would give internal noise levels of 47dB to 50dB L_{Amax}, assuming 15dB attenuation.

5.9.4 The calculations above assume no acoustic fence around the transport yard. With the fence in place, the L_{Amax} events would fall between 51dB and 54dB L_{Amax}.

5.9.5 These are more in keeping with the pre-operational maximum level reported at IMP1 in Table 4-7 and would give internal noise levels of 36dB to 39dB L_{Amax}.

5.9.6 At this level, noise events may still be audible during the night, but would be of a level which does not result in sleep disturbance, etc. In this regard, noise from events at the transport yard are considered to be at the No Observed Adverse Effect Level, requiring no additional mitigation measures.

6 Traffic Noise Assessment

6.1 Introduction

6.1.1 This section of the report outlines the prediction and assessment of noise generated by the change in traffic flow on the local road network arising from the operation of the transport yard.

6.2 Baseline Conditions

6.2.1 Traffic count information for Falkland Way presented in Bryan G Hall's Transport Assessment report reference 21-351-001.02 dated December 2021, gives hourly daytime flows of up to 156 vehicles per hour (period starting 16:00hrs) with a considerably lower flow during the night-time period. This traffic flow would be considered low according to the CRTN[2].

6.2.2 Falkland Way is a single carriageway road, with a speed limit of 40mph (64kph).

6.3 Trip Generation

6.3.1 The information provided by Wren indicates that the operational facility receives around 35 vehicles on average during a peak daytime hour (16:00hrs). The maximum number of vehicles received during any one hour is 46.

6.3.2 During the night, the facility receives an average of 10 vehicles between 23:00hrs and midnight and after this, the number drop significantly until 09:00hrs. There are occasional movements overnight but these are sporadic at best.

6.4 Daytime Traffic Assessment

6.4.1 Based on the above information, the Basic Noise Level (BNL) for Falkland Way can be calculated for both the baseline and operational conditions. The resultant change in noise level can be related to standard impact significance criteria. Table 6-1 below summarises the calculations:

Table 6-1: Traffic Noise Assessment

Operational Condition	Hourly Traffic Flow	Basic Noise Level[3], L_{10}, dB(A)
Baseline	156	64.1
Baseline + operation	156 + 46	65.3
	Difference	+1.2

[2] Calculation of Road Traffic Noise, Department of Transport Welsh Office. HMSO 1988
[3] BNL calculated from hourly traffic flows using $L_{10} = 42.2+10\log(q)$.

6.4.2 The assessment above demonstrates that the facility would generate a +1.2dB increase in traffic noise along Falkland Way. This would be considered 'Minor' in accordance with the criteria detailed in the DMRB[4].

6.4.3 It is noted that the BNL calculation omits factors such as road speed, low flow corrections and percentage of HGVs. However, the relative change in noise level is considered a reasonable representation of the overall change in this instance.

6.5 Night-time Traffic Assessment

6.5.1 Given the sporadic movement of HGVs during the night, it is considered more appropriate to calculate the noise generated by vehicle movements in accordance with the haul road methodology in BS5228[5]. The calculation uses the formula:

$$L_{Aeq} = L_{WA} - 33 + 10log_{10}Q - 10log_{10}V - 10log_{10}d$$

Where:

Q = 2 vehicle in 15mins (8 per hour);

V = 64 kph; and,

D = 15m (assumed distance from road to closest dwelling on Falkland Way).

6.5.2 The calculation gives a noise level at the (assumed) closest dwelling to Falkland Way of 42.2dB. This would fall well below the prevailing ambient noise levels in the area and would give an internal ambient noise level of around 27dB, assuming 15dB attenuation for an open window.

6.5.3 It is still plausible that noise from vehicle movements would be audible. However, they would not result in any adverse noise impacts on the nearest dwellings or necessitate any change in behaviour to ameliorate noise, i.e., windows could remain open, etc. As such, vehicle movement noise is considered to be at the No Observed Adverse Effect Level, requiring no additional mitigation measures.

[4] Design Manual for Roads and Bridges. LA111 Noise and Vibration, Rev 2. May 2020

[5] British Standard 5228-1:2009 +A1:2014. Code of practice for noise and vibration control on construction and open sites. Part 1: Noise

7 Conclusion

7.1 Background

7.1.1 Enzygo Limited (Enzygo) has been commissioned by Wren Kitchens Ltd to undertake an environmental noise impact assessment for the new transport yard located on Victory Way in Barton-upon-Humber.

7.1.2 The assessment has been undertaken to address the requirements of Condition 9 of the planning consent and to assess compliance with the relevant standards at the nearest noise-sensitive receptors.

7.1.3 The noise assessment includes a comprehensive baseline survey including data established prior to and during operation. The assessment also includes information from the operational service yard including the number and frequency of vehicle movements and noise levels associated with various operations.

7.2 Noise Assessments

7.2.1 The noise assessment has been split into two parts; covering noise from operations within the transport yard and noise of vehicle movements on the wider road network.

7.2.2 The noise assessment for the transport yard has primarily been conducted in accordance with the guidance contained within British Standard 4142:2014+A1:2019 *'Method for rating and assessing industrial and commercial sound'*. The assessments demonstrate that operational noise would fall below the typical background sound levels in the vicinity, resulting in a low impact, in accordance with BS4142.

7.2.3 Further consideration has been given to the potential impact on the nearby Field View nursery during the daytime and the wider implications of noise events (L_{Amax}) during the night-time.

7.2.4 Noise levels at the nursery would fall below the pre-operation ambient (L_{Aeq}) noise levels in the area, indicating no overall impact on the setting.

7.2.5 The assessment of L_{Amax} events demonstrates that, with the control measures in place and the 4m acoustic fence, levels at the nearest dwellings would not result in any noise impacts and would be considered to be at the No Observed Adverse Effect Level, requiring no additional mitigation measures.

7.2.6 The assessment of noise from vehicle movements on the local road network demonstrates an increase of up to 1.2dB during the daytime period which would be considered minor, in accordance with the relevant assessment criteria.

7.2.7 During the night, the sporadic movement of vehicles would generate relatively low noise levels (in absolute terms) which would again be considered No Observed Adverse Effect Level.

7.3 Overall

7.3.1 The assessments presented in this report demonstrate that the operational transport yard would not generate any adverse noise impacts. Given this, there are no reasons on noise grounds why Condition 9 of the planning consent cannot be discharged.

Glossary of Terminology

Noise is defined as unwanted sound. The range of audible sound is known to be from 0dB (threshold of hearing) to 140dB (threshold of pain). Examples of typical noise levels relating to 'everyday' occurrences are given in Table G-1 below.

Table G-1: Typical Noise Levels

Source	Sound Pressure Level in dB(A)	Subjective Level
Gun shot	160	Perforation of eardrum
Military Jet take-off	140	Threshold of pain
Jet Aircraft at 100m	120	Very Loud
Rock Concert, front seats	110	Threshold of Sensation
Pneumatic Drill at 5m	100	Very Loud
Heavy goods vehicle from pavement	90	
Traffic at kerb edge	70 – 85	Loud
Vacuum Cleaner, Hair Dryer	70	
Normal conversation at 1m	60	Moderate
Typical Office	50 – 60	
Residential area at night	40	Quiet
Rural area at night, still air	30	
Leaves Rustling	20	
Rubbing together of fingertips	10	
	0	Threshold of hearing

The frequency response of the human ear to noise is usually taken to be around 18Hz (number of oscillations per second) to 18,000Hz. However, the human ear does not respond equally to different frequencies at the same level; it is more sensitive in the mid-frequency range than lower and higher frequencies and, because of this, when undertaking the measurement of noise the low and high frequency components of any given sound are reduced in importance by applying a filtering (weighting) circuit to the noise measuring instrument. The weighting which is widely accepted to correlate best with the subjective nature of human response to noise and is most widely used to quantify this is the A-weighted filter set. This is an internationally accepted standard for noise measurement.

For variable noise sources within an area an increase of 3dB(A) would be the minimum perceptible to the human ear under normal conditions. It is generally accepted that an increase/decrease of 10dB(A) corresponds to a doubling or halving in perceived loudness. The 'loudness' of a noise is a purely subjective parameter, dependant not only upon the sound pressure of the event but also on the dynamics of the listener's ear, the time of the day and the general mood of the person.

With regard to environmental noise levels (in the open air), these are rarely steady but rise and fall according to the activities being undertaken within the surrounding area at any given time. In an attempt to produce a figure that relates this variable nature of noise to human subjective response, a number of statistical noise metrics have been developed. These and other useful terminology and descriptors are presented in Table G-2 below.

Table G-2: Terminology

Term	Definition
Sound	Pressure fluctuations in a fluid medium within the audible range of amplitudes and frequencies which stimulate the organs of hearing.
Noise	Unwanted sound emitted from a source and received by the sensitive receptor.
Decibel (dB)	Unit most often used to describe the sound pressure level. A logarithmic number, it correlates closely to the way in which humans perceive sound. Its wide range of values helps quantify sound pressures from a large variety of magnitudes.
A-Weighting (dB(A))	Human perception of sound is frequency dependant. A-weighting applies a range of corrections at each frequency to provide a 'human-averaged'. Can be frequency band or broadband values.
Frequency (Hz)	The number of cycles per second, for sound this is closely related (and often mistaken for) pitch.
Frequency Spectrum	A more detailed analysis of the frequency components that comprise a sound source.
$L_{A10,T}$	The 10th statistical percentile of a measurement period, i.e. the level that is exceeded for 10% of the measurement duration. Closely correlates with traffic sources, A-weighted.
$L_{A90,T}$	The 90th statistical percentile of a measurement period, i.e. the level that is exceeded for 90% of the measurement duration. Used to describe background sound levels, as this value is affected less by short, transient sound sources, A-weighted.
L_{Amax}	The root mean square (RMS) maximum sound pressure level within a measurement period, A-weighted.
Ambient Sound	The total sound climate of all sources incident at one location, both in the near- and far-field (*The ambient sound comprises the residual sound and the specific sound when present)*.
Ambient Sound Level **$L_a = L_{Aeq,T}$**	Equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time, usually from many sources near and far, at the assessment location over a given time interval, T.
Background Sound Level $L_{A90,T}$	A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, measured using time weighting F and quoted to the nearest whole number of decibels.
Equivalent Continuous A-weighted Sound Pressure Level $L_{Aeq,T}$	Value of the A-weighted sound pressure level in decibels of continuous steady sound that, within a specified time interval, $T = t_2 - t_1$, has the same mean-squared sound pressure as a sound that varies with time, and is given by the following equation: $$L_{Aeq,T} = 10lg_{10}\left\{\left(\frac{1}{T}\right)\int_{t1}^{t2}\left[p_A\frac{(t)^2}{{p_0}^2}\right]dt\right\}$$

Term	Definition
	Where p_0 is the reference sound pressure (20µPA); and $P_A(t)$ is the instantaneous A-weighted sound pressure level at time t.
Measurement Time Interval T_m	Total time over which measurements are taken (*This may consist of the sum of a number of non-contiguous, short-term measurement time intervals)*
Rating level $L_{Ar,Tr}$	Specific sound level plus any adjustment for the characteristic features of the sound, over a period of time, T.
Reference Time Interval, T_r	Specified interval over which the specific sound level is determined (This is 1hr during the day from 07:00 to 23:00 hours and a shorter period of 15-min at night from 23:00 to 07:00 hours).
Residual Sound	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.
Residual sound level $L_r = L_{Aeq,T}$	Equivalent continuous A-weighted sound pressure level of the residual sound in a given situation at the assessment location over a given time interval, T.
Sound Pressure Level	The level of fluctuation in air pressure, caused by airborne sound sources. Measured in Pascals (Pa).
Sound Power Level	The rate at which sound is radiated by a source. This parameter is useful as it describes sound energy before environmental or decay factors. Quantified in dB and notated usually as L_w or SWL.
Specific sound level $L_s = L_{Aeq,Tr}$	Equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given time interval, T.
Specific Sound Source	Sound source being assessed.

Statement of Uncertainty

This report is based upon a range of measurements, a system of calculations and noise predictions. As such, this report attempts to quantify fluctuations in air pressure and is subject to the effects of meteorology, physical and perceived anomalies, tolerances within the measuring and monitoring equipment and accuracy margins within the noise modelling software. In the interests of repeatability, this report must be considered as being affected by common factors involved in the measurement and calculation of noise propagation.

All measurement values, outcomes and assumptions are subject to a margin of uncertainty. This has been quantified and assessed as follows:

- Rounding errors – systemic tolerance of ±1dB;
- Type 1 sound level meter – operational tolerance of ±1.1dB;
- Meteorology – allowance of ±1.9dB; and
- CadnaA noise propagation modelling software – operational accuracy of ±2.1dB

The most influential uncertainty factors for the assessment of noise are deemed to be equipment tolerances, meteorology and software accuracy. A root-sum-square statistical average has been used to provide an overall margin of uncertainty of ±3dB.

Statement of Competency

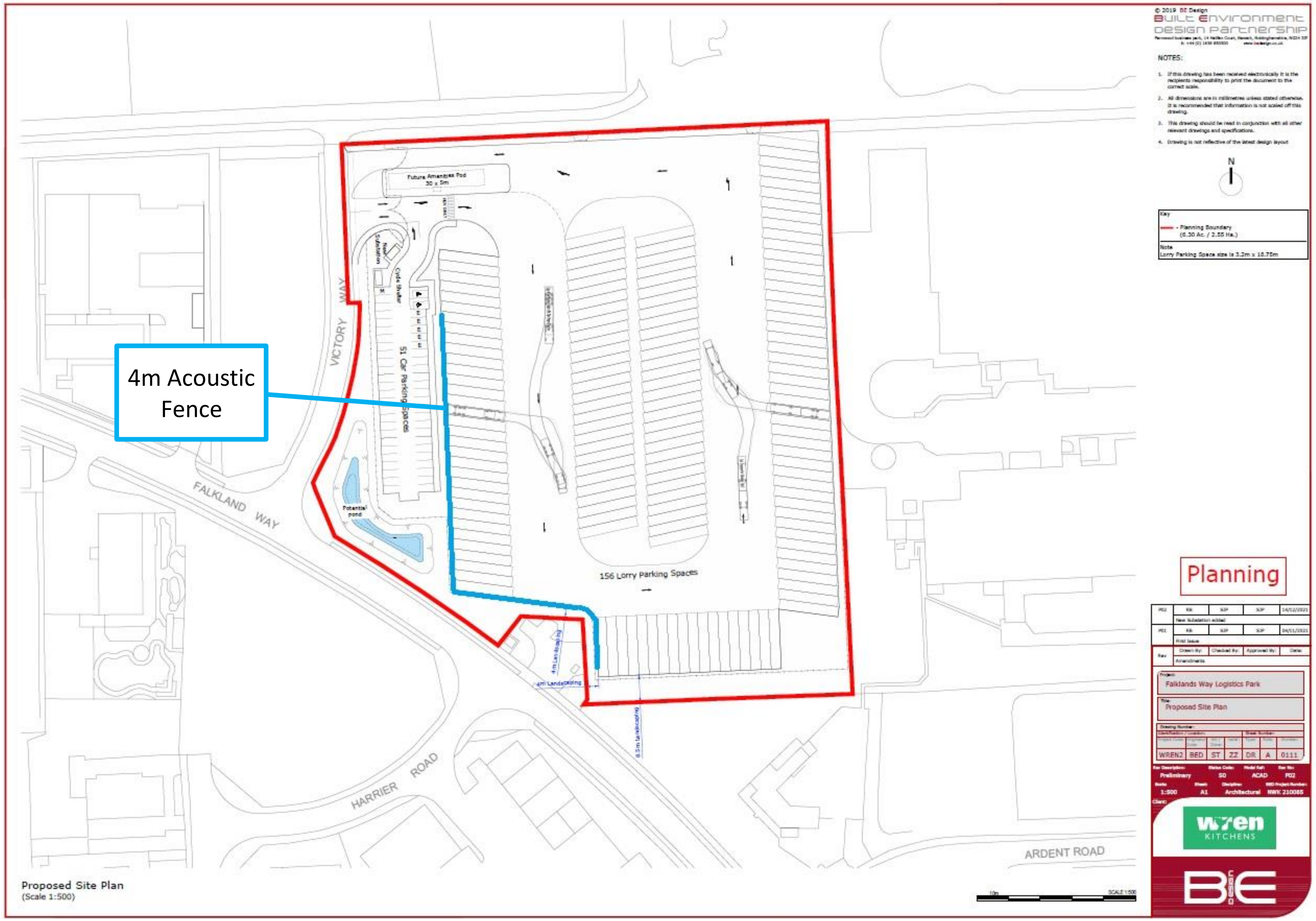
The report has been prepared by Mr. Darren Lafon-Anthony who is the Director of Acoustics at Enzygo Limited. Mr. Lafon-Anthony holds a Master of Science Degree in Applied Acoustics and has been a Corporate Member of the Institute of Acoustics since July 2004 having previously been an Associate Member of the institute since October 2001. Mr. Lafon-Anthony is also a Fellow of the Institute of Quarrying based on his contribution to minerals and mining noise assessment and mitigation, a qualification he has held since September 2014.

Mr. Lafon-Anthony has worked in acoustics since January 1981. Initially as an engineer designing and overseeing manufacture of noise control equipment for the water industry, standby power diesel generator and power generation markets for several noise control equipment manufacturers and, since February 2004, as an environmental noise consultant in various sectors, including mineral and mining sites, waste disposal and recycling sites, large industrial developments, energy supply projects (EfW, STOR and Battery Energy sites) and residential developments in the UK, Europe and sub-Saharan Africa.

The assessment has been reviewed by Mr. Mark Harrison, Principal Acoustic Consultant at Enzygo Limited. Mr Harrison holds a Batchelor of Science degree in Music Technology and a post graduate Diploma in Acoustics and Noise Control.

Mr Harrison has worked in acoustic consultancy since 2007 and has worked on noise and vibration assessments in several sectors including industrial / commercial developments; power generation and distribution; residential developments; transport schemes; and mineral extraction and processing.

APPENDIX A – Site Layout



APPENDIX B – Baseline Noise Data

Location IMP1

Period Start	L_{Aeq}, dB	L_{Amax}, dB	L_{A10}, dB	L_{A90}, dB
24/04/2022 08:00	49.0	77.8	47.8	45.0
24/04/2022 08:15	54.8	77.8	49.3	45.1
24/04/2022 08:30	59.3	80.1	54.3	47.7
06/03/2022 12:30	49.9	67.6	54.1	40.7
06/03/2022 12:45	48.2	61.5	52.3	41.0
06/03/2022 13:00	50.0	61.3	54.4	41.6
06/03/2022 13:15	49.0	61.6	53.2	40.5
06/03/2022 13:30	51.7	65.0	55.7	41.8
06/03/2022 13:45	49.4	61.3	54.1	40.3
06/03/2022 14:00	48.4	63.6	51.9	39.6
06/03/2022 14:15	48.7	60.3	52.7	40.0
24/04/2022 17:00	46.5	61.6	45.8	43.7
24/04/2022 17:15	48.2	78.3	47.0	44.5
24/04/2022 17:30	53.8	78.3	48.3	45.7
24/04/2022 17:45	50.4	69.5	48.4	45.6
	52.1	**80.1**	**51.3**	**42.9**

Period Start	L_{Aeq}, dB	L_{Amax}, dB	L_{A90}, dB	L_{A10}, dB
06/03/2022 12:30	49.9	67.6	40.7	54.1
06/03/2022 12:45	48.2	61.5	41.0	52.3
06/03/2022 13:00	50.0	61.3	41.6	54.4
06/03/2022 13:15	49.0	61.6	40.5	53.2
06/03/2022 13:30	51.7	65.0	41.8	55.7
06/03/2022 13:45	49.4	61.3	40.3	54.1
06/03/2022 14:00	48.4	63.6	39.6	51.9
06/03/2022 14:15	48.7	60.3	40.0	52.7
Overall	49.5	67.6	40.5	53.6

Location IMP2

Period Start	L_{Aeq}, dB	L_{Amax}, dB	L_{A90}, dB	L_{A10}, dB	Period Start	L_{Aeq}, dB	L_{Amax}, dB	L_{A90}, dB	L_{A10}, dB
24/04/2022 07:00	52.4	65.3	46.2	55.9	24/04/2022 13:30	53	62.8	46.7	56.1
24/04/2022 07:15	51.0	61.1	46.4	53.8	24/04/2022 13:45	53.1	62	45.6	57
24/04/2022 07:30	54.2	65.6	48.1	57.6	24/04/2022 14:00	53.9	67.1	47.4	57.2
24/04/2022 07:45	53.3	69.9	47.7	54.8	24/04/2022 14:15	53.7	70.3	47.7	56.4
24/04/2022 08:00	57.5	77.8	47.4	55.3	24/04/2022 14:30	51.4	59.6	46.3	54.6
24/04/2022 08:15	53.3	73.9	47.4	56.3	24/04/2022 14:45	52.0	67.5	47.1	54.4
24/04/2022 08:30	52.2	67.7	47.7	54.5	24/04/2022 15:00	53.0	62.6	47.9	55.6
24/04/2022 08:45	52.7	62.0	48.1	55.0	24/04/2022 15:15	51.7	61.8	45.9	54.8
24/04/2022 09:00	54.9	70.3	48.5	56.7	24/04/2022 15:30	53.1	61.0	47.2	56.3
24/04/2022 09:15	53.2	65.5	47.7	55.9	24/04/2022 15:45	53.0	65.0	47.2	56.4
24/04/2022 09:30	54.8	72.6	49.7	56.6	24/04/2022 16:00	53.0	63.7	46.9	56.2
24/04/2022 09:45	56.1	66.3	49.0	59.6	24/04/2022 16:15	51.5	60.5	46.9	54.3
24/04/2022 10:00	54.9	67.3	49.0	56.8	24/04/2022 16:30	52.1	59.2	48.0	55.0
24/04/2022 10:15	55.4	66.5	48.5	58.8	24/04/2022 16:45	53.4	63.1	48.5	56.6
24/04/2022 10:30	60.0	76.2	47.9	63.0	24/04/2022 17:00	51.2	58.9	46.9	53.8
24/04/2022 10:45	54.0	74.3	47.5	56.0	24/04/2022 17:15	51.7	59.2	48.1	54.1
24/04/2022 11:00	54.7	73.1	48.6	57.5	24/04/2022 17:30	55.2	75.5	48.1	57.0
24/04/2022 11:15	56.0	67.4	49.3	59.5	24/04/2022 17:45	52.7	62.1	48.2	55.6
24/04/2022 11:30	54.8	64.5	49.3	58.1	06/03/2022 12:30	51.7	65.2	45.0	55.0
24/04/2022 11:45	55.6	72.5	47.7	58.6	06/03/2022 12:45	51.4	62.7	44.8	54.9
24/04/2022 12:00	53.5	60.2	49.7	55.8	06/03/2022 13:00	51.9	64.0	44.8	55.7
24/04/2022 12:15	53.5	68.0	49.2	55.4	06/03/2022 13:15	53.2	63.8	45.6	57.0
24/04/2022 12:30	53.5	63.6	49.1	56.2	06/03/2022 13:30	52.9	66.6	44.8	56.1
24/04/2022 12:45	53.8	63.6	49.2	56.7	06/03/2022 13:45	51.2	63.3	43.7	55.2
24/04/2022 13:00	53.4	64.1	47.3	56.5	06/03/2022 14:00	51.0	64.0	43.1	54.9
24/04/2022 13:15	53.4	63.2	47.7	56.4	06/03/2022 14:15	51.7	64.9	43.4	55.7

Period Start	L_{Aeq}, dB	L_{Amax}, dB	L_{A90}, dB	L_{A10}, dB	Period Start	L_{Aeq}, dB	L_{Amax}, dB	L_{A90}, dB	L_{A10}, dB
24/04/2022 02:00	48.1	53.0	45.1	50.4	24/04/2022 05:00	57.1	67.2	50.9	60.4
24/04/2022 02:15	48.7	55.3	45.9	50.8	24/04/2022 05:15	52.7	67.4	48.5	54.3
24/04/2022 02:30	48.7	55.4	45.7	51.2	24/04/2022 05:30	53.4	62.7	47.5	56.6
24/04/2022 02:45	47.8	52.9	45.5	49.7	24/04/2022 05:45	55.4	66.7	45.8	59.3
24/04/2022 03:00	47.7	58.0	45.1	49.6	24/04/2022 06:00	52.6	65.7	45.8	55.9
24/04/2022 03:15	48.7	55.0	46.0	50.4	24/04/2022 06:15	51.0	63.3	45.9	53.1
24/04/2022 03:30	48.7	67.9	45.1	49.0	24/04/2022 06:30	51.3	61.7	45.7	54.5
24/04/2022 03:45	47.0	52.3	45.0	48.5	24/04/2022 06:45	52.9	63.5	46.2	56.6
24/04/2022 04:00	46.8	50.6	44.9	48.8	07/03/2022 01:00	43.1	45.8	42.0	44.1
24/04/2022 04:15	47.7	53.7	44.8	49.6	07/03/2022 01:15	46.4	63.5	41.4	46.2
24/04/2022 04:30	48.3	53.6	46.0	50.3	07/03/2022 01:30	44.5	63.6	40.5	43.9
24/04/2022 04:45	54.4	66.8	45.9	57.6	07/03/2022 01:45	44.4	46.7	42.6	45.6

Location IMP3

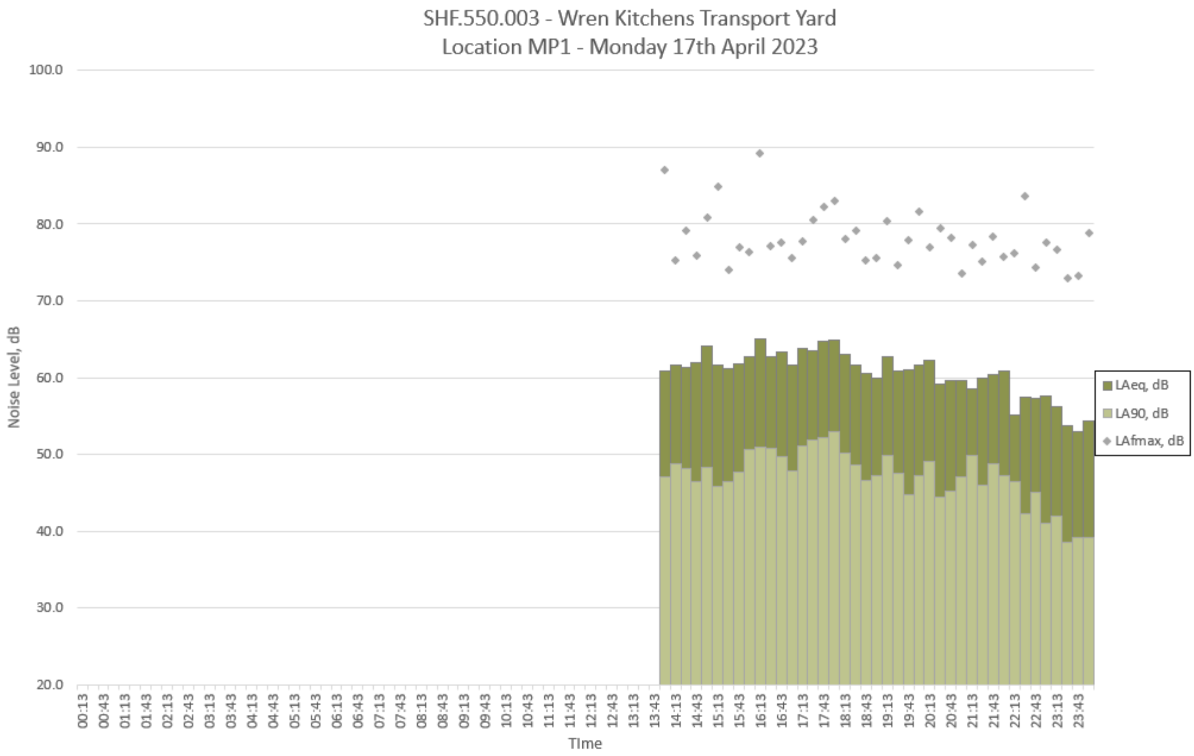
Period Start	L_{Aeq}, dB	L_{Amax}, dB	L_{A90}, dB	L_{A10}, dB
24/04/2022 02:00	44.5	50.4	42.9	45.7
24/04/2022 02:15	45.0	51.3	43.5	46.1
24/04/2022 02:30	47.5	66.7	43.5	46.5
24/04/2022 02:45	44.8	49.6	43.4	46.0
24/04/2022 03:00	47.5	68.8	43.8	46.8
24/04/2022 03:15	45.8	52.9	44.1	46.9
24/04/2022 03:30	53.6	77.3	43.7	47.6
24/04/2022 03:45	45.0	49.0	43.4	46.2
24/04/2022 04:00	45.1	51.6	43.5	46.2
24/04/2022 04:15	45.0	49.0	43.4	46.1
24/04/2022 04:30	45.4	55.1	43.9	46.3
24/04/2022 04:45	49.8	58.9	44.6	52.9
24/04/2022 05:00	57.8	74.8	48.2	58.3
24/04/2022 05:15	54.4	70.5	46.8	54.2
24/04/2022 05:30	56.5	75.0	46.8	57.3
24/04/2022 05:45	52.7	70.1	44.7	53.5
24/04/2022 06:00	54.8	70.5	45.4	55.8
24/04/2022 06:15	53.3	72.0	45.0	53.4
24/04/2022 06:30	51.6	70.0	44.2	51.0
24/04/2022 06:45	51.5	70.0	45.0	50.7
07/03/2022 02:15	47.5	65.7	44.7	46.7
07/03/2022 02:30	46.2	53.1	44.1	47.5
07/03/2022 02:45	49.3	68.4	45.7	47.9

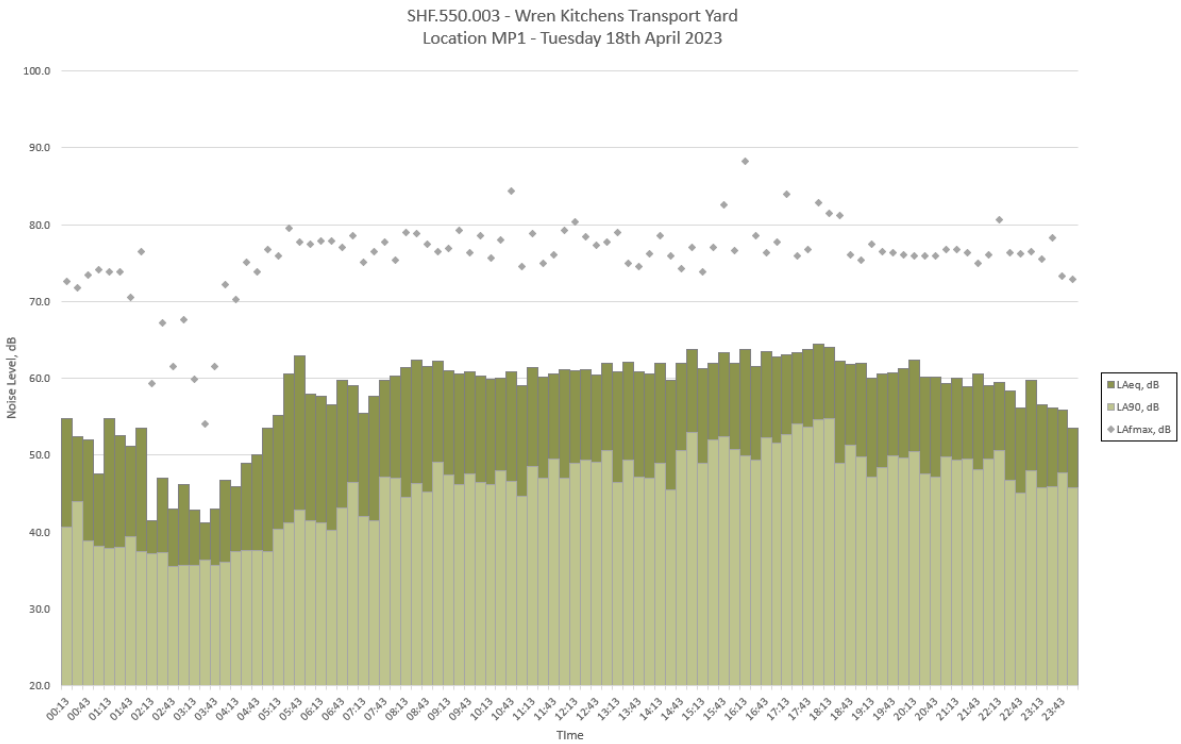
Period Start	L_{Aeq}, dB	L_{Amax}, dB	L_{A90}, dB	L_{A10}, dB
24/04/2022 07:00	53.4	74.6	44.7	49.6
24/04/2022 07:15	51.8	72.8	44.9	50.2
24/04/2022 07:30	54.5	71.4	46.4	54.4
24/04/2022 07:45	58.1	75.3	48.8	60.2
24/04/2022 08:00	58.4	68.6	51.5	61.5
24/04/2022 08:15	57.2	68.0	50.8	60.3
24/04/2022 08:30	58.3	68.6	53.0	60.7
24/04/2022 08:45	57.4	66.9	49.8	60.4
24/04/2022 09:00	53.2	70.4	46.7	53.2
24/04/2022 09:15	53.4	73.0	46.7	54.0
24/04/2022 09:30	60.0	69.5	53.4	62.7
24/04/2022 09:45	58.8	69.5	51.6	62.0
06/03/2022 14:45	60.8	77.8	44.9	65.4
06/03/2022 15:00	60.2	72.1	45.4	65.6
06/03/2022 15:15	59.7	75.9	45.3	63.9
06/03/2022 15:30	59.7	75.2	44.3	63.9
06/03/2022 15:45	59.9	76.9	44.8	64.2
06/03/2022 16:00	60.9	75.7	46.3	65.7
06/03/2022 16:15	58.8	74.6	44.9	62.3

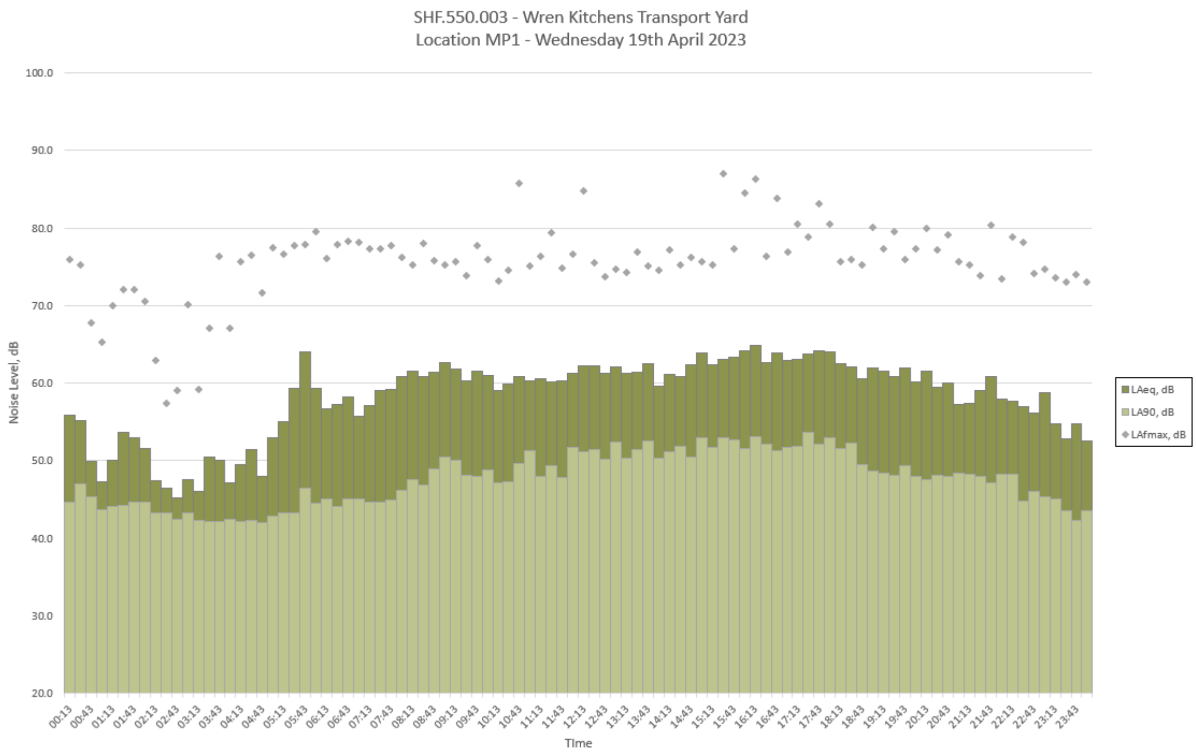
Location IMP4

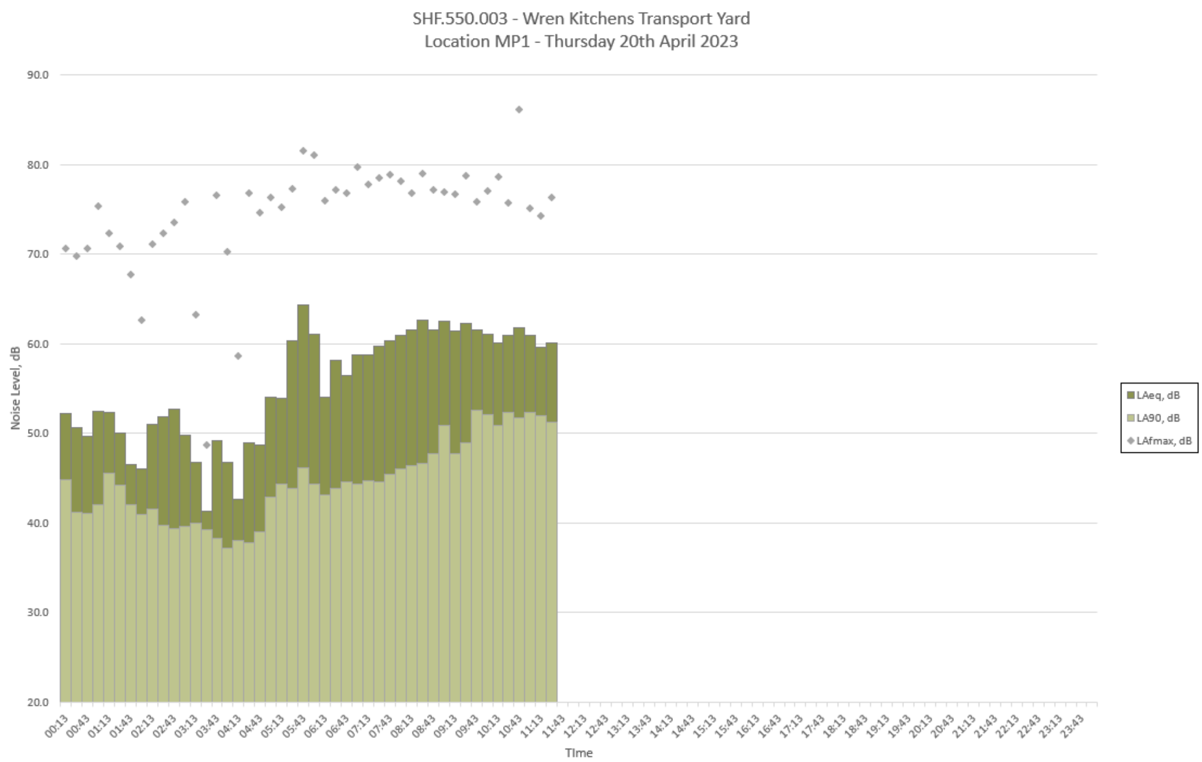
Period Start	L_{Aeq}, dB	L_{Amax}, dB	L_{A90}, dB	L_{A10}, dB
26/04/2022 17:00	67.1	79.8	44.8	72.0
26/04/2022 17:15	66.9	82.2	42.0	72.2
26/04/2022 17:30	68.0	80.4	42.2	73.7
26/04/2022 17:45	69.4	79.8	45.4	74.3
27/04/2022 08:00	66.8	80.5	46.4	72
27/04/2022 08:15	66.4	78.9	44.8	71.8
27/04/2022 08:30	67.5	80.7	45.2	72.6
27/04/2022 08:45	68.1	80.9	46.7	73.1

Location NMP1






SHF.550.003 - Wren Kitchens Transport Yard
Location MP1 - Wednesday 19th April 2023
Noise Level, dB
Time
LAeq, dB
LA90, dB
LAfmax, dB


SHF.550.003 - Wren Kitchens Transport Yard
Location MP1 - Thursday 20th April 2023
Noise Level, dB
Time
LAeq, dB
LA90, dB
LAfmax, dB

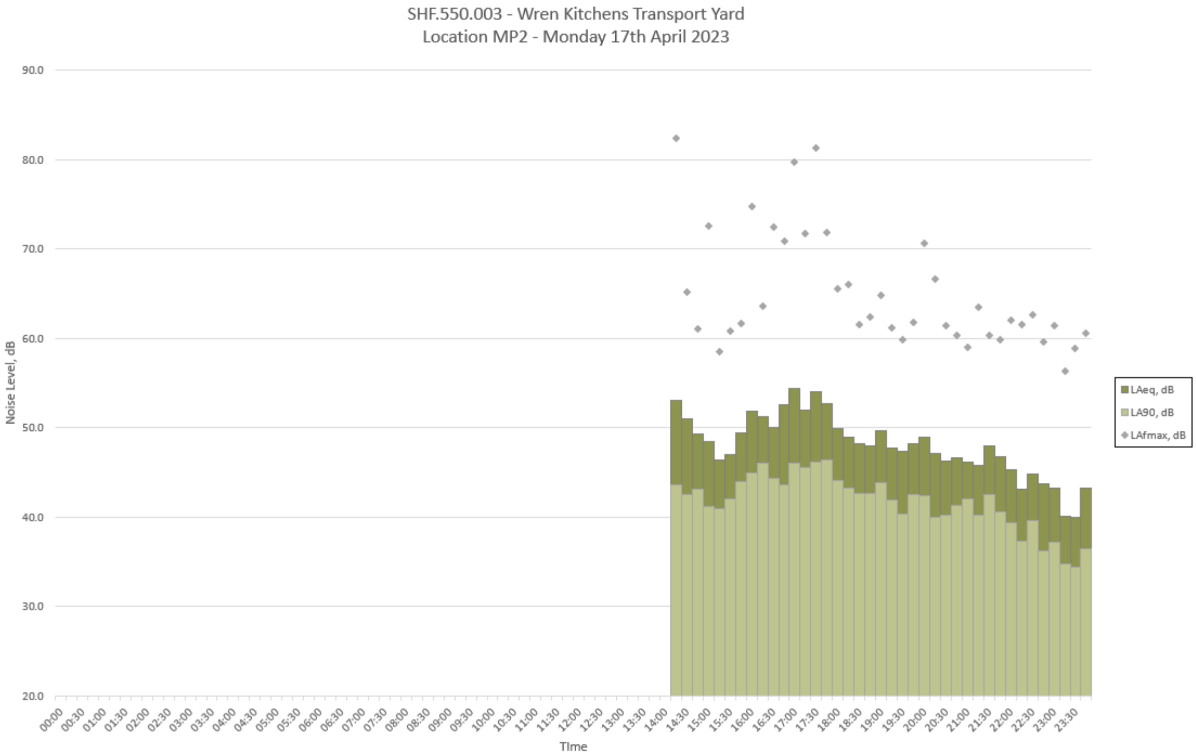
Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB	Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB
17/04/2023 13:58	60.8	87.0	64.4	47.1	18/04/2023 01:13	54.8	73.9	53.9	37.8
17/04/2023 14:13	61.7	75.2	66.0	48.8	18/04/2023 01:28	52.6	73.8	47.4	38.0
17/04/2023 14:28	61.4	79.2	65.6	48.2	18/04/2023 01:43	51.2	70.5	51.7	39.4
17/04/2023 14:43	61.9	75.9	66.3	46.4	18/04/2023 01:58	53.5	76.5	50.0	37.4
17/04/2023 14:58	64.1	80.8	68.1	48.3	18/04/2023 02:13	41.4	59.3	41.5	37.1
17/04/2023 15:13	61.6	84.9	65.3	45.8	18/04/2023 02:28	47.0	67.2	45.1	37.3
17/04/2023 15:28	61.2	74.1	65.9	46.4	18/04/2023 02:43	43.0	61.5	39.9	35.5
17/04/2023 15:43	61.8	76.9	66.4	47.7	18/04/2023 02:58	46.1	67.6	40.6	35.7
17/04/2023 15:58	62.7	76.4	67.1	50.6	18/04/2023 03:13	42.9	59.9	43.5	35.6
17/04/2023 16:13	65.1	89.2	67.5	51.0	18/04/2023 03:28	41.2	54.0	44.1	36.4
17/04/2023 16:28	62.7	77.1	67.0	50.8	18/04/2023 03:43	43.0	61.5	44.0	35.6
17/04/2023 16:43	63.4	77.6	67.5	49.7	18/04/2023 03:58	46.7	72.2	45.2	36.1
17/04/2023 16:58	61.7	75.6	66.3	47.8	18/04/2023 04:13	45.9	70.3	46.0	37.4
17/04/2023 17:13	63.8	77.8	68.2	51.1	18/04/2023 04:28	49.0	75.1	47.8	37.6
17/04/2023 17:28	63.5	80.5	67.5	51.9	18/04/2023 04:43	50.0	73.8	50.4	37.6
17/04/2023 17:43	64.8	82.3	69.0	52.2	18/04/2023 04:58	53.5	76.8	50.8	37.4
17/04/2023 17:58	64.9	83.0	68.6	52.9	18/04/2023 05:13	55.2	75.9	55.1	40.3
17/04/2023 18:13	63.1	78.1	67.5	50.2	18/04/2023 05:28	60.5	79.5	63.6	41.2
17/04/2023 18:28	61.7	79.2	65.9	48.7	18/04/2023 05:43	62.9	77.7	67.6	42.8
17/04/2023 18:43	60.5	75.2	64.6	46.6	18/04/2023 05:58	57.9	77.4	58.7	41.5
17/04/2023 18:58	59.9	75.5	64.5	47.3	18/04/2023 06:13	57.7	77.9	60.2	41.2
17/04/2023 19:13	62.7	80.3	66.6	49.9	18/04/2023 06:28	56.5	77.9	56.5	40.2
17/04/2023 19:28	60.9	74.6	65.3	47.5	18/04/2023 06:43	59.8	77.0	62.9	43.1
17/04/2023 19:43	61.0	77.9	64.7	44.8	18/04/2023 06:58	59.1	78.5	60.6	46.5
17/04/2023 19:58	61.6	81.6	65.7	47.3	18/04/2023 07:13	55.4	75.1	56.6	42.0
17/04/2023 20:13	62.3	77.0	66.6	49.1	18/04/2023 07:28	57.7	76.5	60.1	41.5
17/04/2023 20:28	59.1	79.4	62.4	44.4	18/04/2023 07:43	59.8	77.7	62.9	47.1
17/04/2023 20:43	59.6	78.2	63.3	45.3	18/04/2023 07:58	60.3	75.4	64.9	47.0
17/04/2023 20:58	59.7	73.5	63.6	47.1	18/04/2023 08:13	61.4	79.0	65.4	44.5
17/04/2023 21:13	58.6	77.3	61.4	49.8	18/04/2023 08:28	62.3	78.8	66.9	46.3
17/04/2023 21:28	59.9	75.1	63.6	46.0	18/04/2023 08:43	61.5	77.4	65.8	45.2
17/04/2023 21:43	60.4	78.4	64.3	48.8	18/04/2023 08:58	62.2	76.5	66.6	49.1
17/04/2023 21:58	60.9	75.7	65.3	47.3	18/04/2023 09:13	61.0	76.9	65.2	47.4
17/04/2023 22:13	55.1	76.2	56.1	46.4	18/04/2023 09:28	60.5	79.2	64.3	46.1
17/04/2023 22:28	57.5	83.7	58.5	42.3	18/04/2023 09:43	60.8	76.3	65.2	47.6
17/04/2023 22:43	57.3	74.4	59.3	45.1	18/04/2023 09:58	60.3	78.6	64.4	46.5
17/04/2023 22:58	57.6	77.6	60.3	41.1	18/04/2023 10:13	59.9	75.7	64.1	46.1
17/04/2023 23:13	56.2	76.7	57.2	42.0	18/04/2023 10:28	60.0	78.0	64.0	47.9
17/04/2023 23:28	53.8	73.0	54.6	38.5	18/04/2023 10:43	60.8	84.4	63.8	46.6
17/04/2023 23:43	53.0	73.2	52.2	39.2	18/04/2023 10:58	59.0	74.6	63.6	44.6
17/04/2023 23:58	54.3	78.9	54.2	39.2	18/04/2023 11:13	61.4	78.9	65.5	48.5
18/04/2023 00:13	54.8	72.6	56.7	40.6	18/04/2023 11:28	60.1	75.0	64.6	47.0
18/04/2023 00:28	52.4	71.8	53.5	43.9	18/04/2023 11:43	60.6	76.1	64.5	49.5
18/04/2023 00:43	52.0	73.5	51.8	38.8	18/04/2023 11:58	61.1	79.3	64.7	47.0
18/04/2023 00:58	47.6	74.2	45.9	38.2	18/04/2023 12:13	61.0	80.3	64.7	48.9

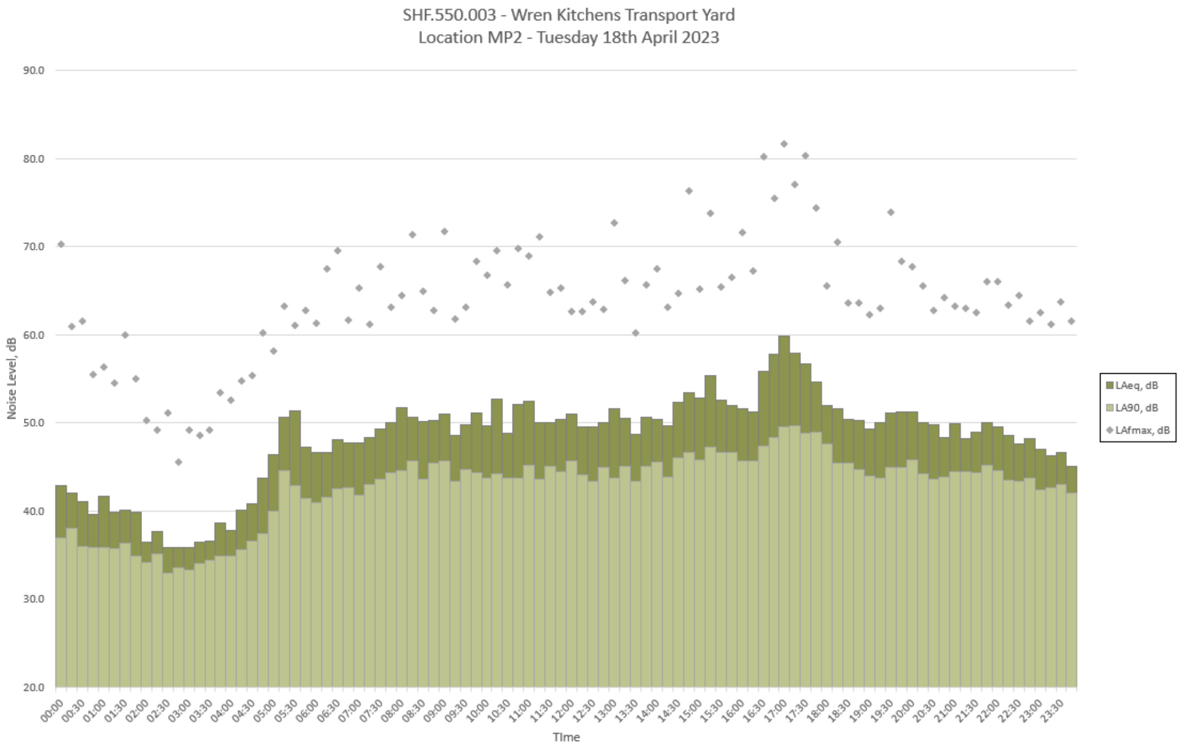
Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB	Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB
18/04/2023 12:28	61.1	78.4	65.2	49.4	18/04/2023 23:43	55.9	73.3	57.5	47.7
18/04/2023 12:43	60.4	77.3	64.1	49.1	18/04/2023 23:58	53.5	72.9	53.7	45.8
18/04/2023 12:58	61.9	77.8	66.0	50.6	19/04/2023 00:13	55.9	75.9	57.3	44.7
18/04/2023 13:13	60.8	79.0	64.5	46.5	19/04/2023 00:28	55.1	75.2	56.0	47.0
18/04/2023 13:28	62.1	75.0	66.2	49.4	19/04/2023 00:43	49.9	67.8	52.1	45.3
18/04/2023 13:43	60.9	74.6	65.2	47.1	19/04/2023 00:58	47.3	65.3	49.5	43.7
18/04/2023 13:58	60.5	76.2	64.6	47.0	19/04/2023 01:13	50.1	70.0	50.3	44.1
18/04/2023 14:13	62.0	78.6	65.9	48.9	19/04/2023 01:28	53.7	72.0	53.2	44.2
18/04/2023 14:28	59.7	75.9	63.8	45.5	19/04/2023 01:43	52.9	72.0	52.9	44.7
18/04/2023 14:43	62.0	74.3	66.6	50.6	19/04/2023 01:58	51.5	70.5	51.7	44.6
18/04/2023 14:58	63.8	77.0	67.7	53.0	19/04/2023 02:13	47.4	62.9	49.8	43.2
18/04/2023 15:13	61.3	73.8	66.0	49.0	19/04/2023 02:28	46.4	57.4	48.6	43.3
18/04/2023 15:28	61.9	77.1	65.5	52.0	19/04/2023 02:43	45.2	59.1	46.9	42.4
18/04/2023 15:43	63.4	82.6	67.4	52.4	19/04/2023 02:58	47.5	70.1	48.4	43.2
18/04/2023 15:58	62.0	76.6	66.4	50.8	19/04/2023 03:13	46.0	59.2	47.9	42.3
18/04/2023 16:13	63.8	88.2	66.5	49.9	19/04/2023 03:28	50.4	67.1	50.1	42.2
18/04/2023 16:28	61.6	78.6	65.6	49.3	19/04/2023 03:43	50.1	76.4	49.4	42.2
18/04/2023 16:43	63.5	76.3	67.4	52.3	19/04/2023 03:58	47.1	67.1	47.9	42.4
18/04/2023 16:58	62.8	77.8	67.3	51.6	19/04/2023 04:13	49.5	75.6	50.3	42.1
18/04/2023 17:13	63.1	84.0	66.8	52.7	19/04/2023 04:28	51.4	76.5	49.9	42.3
18/04/2023 17:28	63.3	76.0	67.6	54.1	19/04/2023 04:43	47.9	71.6	46.6	42.0
18/04/2023 17:43	63.8	76.7	67.8	53.7	19/04/2023 04:58	53.0	77.4	50.3	42.8
18/04/2023 17:58	64.5	82.8	68.1	54.6	19/04/2023 05:13	55.0	76.6	53.5	43.2
18/04/2023 18:13	64.0	81.5	67.7	54.7	19/04/2023 05:28	59.3	77.7	61.3	43.3
18/04/2023 18:28	62.2	81.2	66.2	49.0	19/04/2023 05:43	64.0	77.9	68.5	46.4
18/04/2023 18:43	61.8	76.1	66.1	51.3	19/04/2023 05:58	59.3	79.6	60.3	44.5
18/04/2023 18:58	62.0	75.4	66.3	49.7	19/04/2023 06:13	56.7	76.1	58.4	45.0
18/04/2023 19:13	60.0	77.5	63.4	47.2	19/04/2023 06:28	57.3	77.9	57.2	44.1
18/04/2023 19:28	60.6	76.5	64.5	48.4	19/04/2023 06:43	58.2	78.3	60.1	45.1
18/04/2023 19:43	60.7	76.4	64.5	49.9	19/04/2023 06:58	55.7	78.1	55.5	45.0
18/04/2023 19:58	61.3	76.1	65.2	49.6	19/04/2023 07:13	57.1	77.3	58.4	44.7
18/04/2023 20:13	62.4	76.0	66.3	50.4	19/04/2023 07:28	59.0	77.3	62.1	44.6
18/04/2023 20:28	60.2	75.9	64.4	47.6	19/04/2023 07:43	59.2	77.8	62.1	44.9
18/04/2023 20:43	60.2	75.9	64.0	47.2	19/04/2023 07:58	60.9	76.2	65.6	46.1
18/04/2023 20:58	59.3	76.8	62.9	49.7	19/04/2023 08:13	61.5	75.3	66.0	47.5
18/04/2023 21:13	60.0	76.8	63.4	49.3	19/04/2023 08:28	60.8	78.0	64.9	46.9
18/04/2023 21:28	58.9	76.3	61.7	49.5	19/04/2023 08:43	61.4	75.8	65.9	49.0
18/04/2023 21:43	60.5	74.9	64.8	48.1	19/04/2023 08:58	62.6	75.3	67.3	50.5
18/04/2023 21:58	59.1	76.1	61.8	49.5	19/04/2023 09:13	61.8	75.7	66.0	50.0
18/04/2023 22:13	59.4	80.7	61.4	50.6	19/04/2023 09:28	60.3	73.8	64.6	48.1
18/04/2023 22:28	58.3	76.3	61.1	46.7	19/04/2023 09:43	61.5	77.7	66.3	48.0
18/04/2023 22:43	56.2	76.2	57.7	45.1	19/04/2023 09:58	61.0	76.0	64.8	48.8
18/04/2023 22:58	59.8	76.5	63.0	47.9	19/04/2023 10:13	59.0	73.2	63.2	47.2
18/04/2023 23:13	56.6	75.5	59.5	45.7	19/04/2023 10:28	59.9	74.5	63.9	47.3
18/04/2023 23:28	56.1	78.3	56.6	45.9	19/04/2023 10:43	60.9	85.7	63.5	49.6

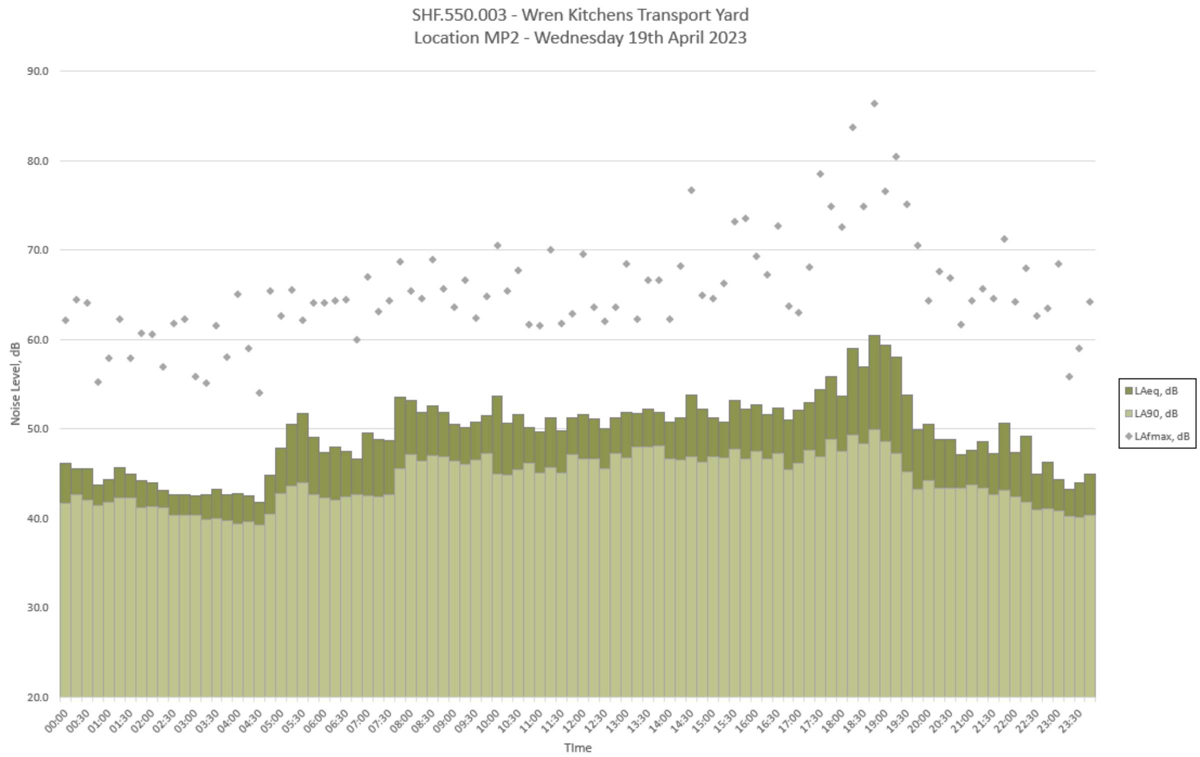
Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB	Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB
19/04/2023 10:58	60.3	75.1	64.4	51.3	19/04/2023 22:13	57.7	78.9	60.0	48.2
19/04/2023 11:13	60.5	76.3	64.9	48.0	19/04/2023 22:28	57.0	78.2	59.1	44.8
19/04/2023 11:28	60.2	79.4	64.2	49.3	19/04/2023 22:43	56.1	74.1	58.6	46.0
19/04/2023 11:43	60.3	74.8	64.2	47.8	19/04/2023 22:58	58.7	74.7	62.1	45.4
19/04/2023 11:58	61.3	76.6	65.1	51.7	19/04/2023 23:13	54.7	73.6	55.0	45.0
19/04/2023 12:13	62.2	84.8	64.3	51.2	19/04/2023 23:28	52.8	73.0	53.0	43.6
19/04/2023 12:28	62.2	75.5	66.4	51.4	19/04/2023 23:43	54.8	74.0	55.4	42.3
19/04/2023 12:43	61.2	73.7	65.5	50.2	19/04/2023 23:58	52.5	73.0	51.9	43.6
19/04/2023 12:58	62.1	74.7	66.0	52.4	20/04/2023 00:13	52.2	70.6	54.9	44.8
19/04/2023 13:13	61.2	74.3	65.3	50.3	20/04/2023 00:28	50.6	69.8	50.1	41.2
19/04/2023 13:28	61.4	76.9	65.4	51.4	20/04/2023 00:43	49.7	70.6	49.6	41.1
19/04/2023 13:43	62.5	75.1	66.5	52.6	20/04/2023 00:58	52.5	75.4	50.9	42.1
19/04/2023 13:58	59.6	74.5	63.6	50.3	20/04/2023 01:13	52.4	72.3	51.7	45.6
19/04/2023 14:13	61.1	77.2	65.4	51.2	20/04/2023 01:28	50.0	70.9	50.6	44.2
19/04/2023 14:28	60.8	75.2	64.8	51.8	20/04/2023 01:43	46.5	67.7	47.5	42.0
19/04/2023 14:43	62.4	76.2	66.6	50.4	20/04/2023 01:58	46.1	62.7	46.9	40.9
19/04/2023 14:58	63.9	75.7	67.9	52.9	20/04/2023 02:13	51.0	71.1	49.6	41.6
19/04/2023 15:13	62.4	75.2	66.7	51.7	20/04/2023 02:28	51.9	72.3	48.8	39.7
19/04/2023 15:28	63.1	87.0	65.6	52.9	20/04/2023 02:43	52.7	73.6	49.1	39.4
19/04/2023 15:43	63.3	77.3	67.4	52.7	20/04/2023 02:58	49.8	75.9	46.9	39.6
19/04/2023 15:58	64.2	84.5	66.9	51.5	20/04/2023 03:13	46.8	63.3	48.6	40.0
19/04/2023 16:13	64.8	86.3	67.8	53.1	20/04/2023 03:28	41.3	48.7	42.8	39.2
19/04/2023 16:28	62.7	76.3	66.7	52.1	20/04/2023 03:43	49.2	76.6	43.2	38.3
19/04/2023 16:43	63.9	83.8	67.9	51.3	20/04/2023 03:58	46.8	70.3	42.6	37.2
19/04/2023 16:58	62.9	76.9	67.1	51.7	20/04/2023 04:13	42.6	58.7	42.8	38.1
19/04/2023 17:13	63.1	80.5	67.4	51.9	20/04/2023 04:28	48.9	76.8	43.2	37.8
19/04/2023 17:28	63.8	78.8	67.7	53.7	20/04/2023 04:43	48.7	74.6	49.7	39.0
19/04/2023 17:43	64.1	83.1	68.2	52.1	20/04/2023 04:58	54.1	76.3	53.2	42.9
19/04/2023 17:58	64.0	80.5	67.9	52.9	20/04/2023 05:13	53.9	75.3	54.1	44.4
19/04/2023 18:13	62.5	75.6	66.5	51.5	20/04/2023 05:28	60.3	77.3	62.8	43.9
19/04/2023 18:28	62.1	76.0	66.3	52.2	20/04/2023 05:43	64.3	81.6	68.6	46.2
19/04/2023 18:43	60.5	75.2	64.8	49.5	20/04/2023 05:58	61.1	81.1	64.1	44.3
19/04/2023 18:58	61.9	80.1	66.1	48.6	20/04/2023 06:13	54.1	76.0	54.3	43.1
19/04/2023 19:13	61.6	77.3	65.4	48.4	20/04/2023 06:28	58.2	77.2	59.2	43.9
19/04/2023 19:28	60.9	79.5	64.6	48.1	20/04/2023 06:43	56.5	76.8	55.8	44.6
19/04/2023 19:43	61.9	75.9	65.8	49.4	20/04/2023 06:58	58.8	79.7	59.8	44.4
19/04/2023 19:58	60.1	77.3	63.9	47.9	20/04/2023 07:13	58.8	77.8	61.5	44.7
19/04/2023 20:13	61.5	80.0	65.0	47.6	20/04/2023 07:28	59.7	78.5	62.6	44.6
19/04/2023 20:28	59.4	77.2	63.2	48.1	20/04/2023 07:43	60.3	78.9	63.8	45.4
19/04/2023 20:43	60.0	79.1	64.0	47.9	20/04/2023 07:58	60.9	78.1	64.9	46.1
19/04/2023 20:58	57.3	75.6	60.2	48.4	20/04/2023 08:13	61.5	76.8	65.8	46.4
19/04/2023 21:13	57.4	75.3	60.1	48.2	20/04/2023 08:28	62.6	79.0	66.6	46.7
19/04/2023 21:28	59.1	73.8	62.7	48.0	20/04/2023 08:43	61.5	77.2	65.7	47.8
19/04/2023 21:43	60.8	80.3	63.8	47.2	20/04/2023 08:58	62.5	77.0	66.4	50.9
19/04/2023 21:58	57.9	73.5	60.7	48.3	20/04/2023 09:13	61.4	76.7	65.4	47.8

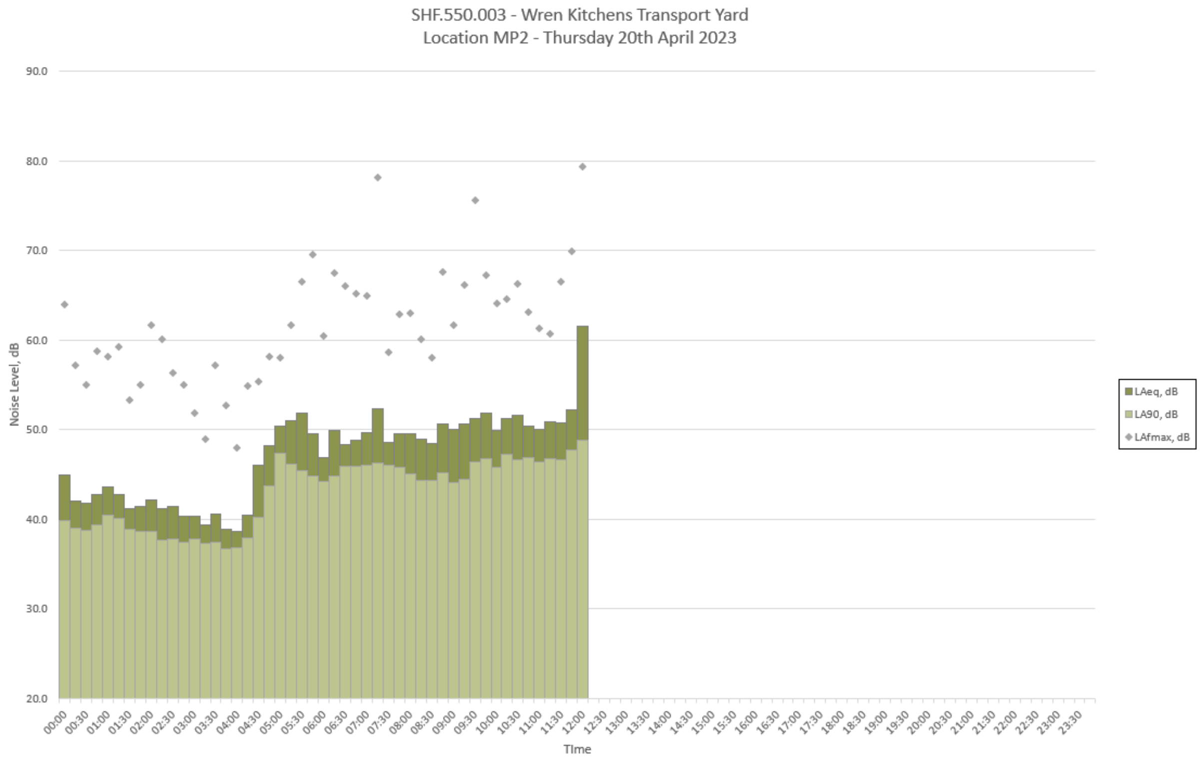
Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB
20/04/2023 09:28	62.3	78.7	66.0	48.9
20/04/2023 09:43	61.5	75.9	65.0	52.6
20/04/2023 09:58	61.1	77.1	64.8	52.1
20/04/2023 10:13	60.1	78.6	63.7	50.9
20/04/2023 10:28	60.9	75.7	64.7	52.4
20/04/2023 10:43	61.8	86.2	64.1	51.7
20/04/2023 10:58	60.9	75.1	64.6	52.4
20/04/2023 11:13	59.6	74.3	63.3	52.0
20/04/2023 11:28	60.1	76.3	64.1	51.2

Location NMP2






SHF.550.003 - Wren Kitchens Transport Yard
Location MP2 - Wednesday 19th April 2023
Noise Level, dB
Time
LAeq, dB
LA90, dB
LAfmax, dB


SHF.550.003 - Wren Kitchens Transport Yard
Location MP2 - Thursday 20th April 2023
Noise Level, dB
Time
LAeq, dB
LA90, dB
LAfmax, dB

Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB	Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB
17/04/2023 14:15	53.1	82.4	53.4	43.6	18/04/2023 01:30	40.1	60.0	42.5	36.4
17/04/2023 14:30	51.0	65.2	54.4	42.5	18/04/2023 01:45	39.9	55.0	41.5	34.9
17/04/2023 14:45	49.3	61.1	52.3	43.1	18/04/2023 02:00	36.5	50.3	38.0	34.2
17/04/2023 15:00	48.5	72.6	50.0	41.2	18/04/2023 02:15	37.7	49.2	39.4	35.2
17/04/2023 15:15	46.4	58.5	49.4	41.0	18/04/2023 02:30	35.9	51.1	37.3	32.9
17/04/2023 15:30	47.0	60.8	49.8	42.1	18/04/2023 02:45	35.9	45.6	37.5	33.6
17/04/2023 15:45	49.4	61.7	52.0	44.0	18/04/2023 03:00	35.9	49.2	37.8	33.3
17/04/2023 16:00	51.8	74.7	53.3	44.9	18/04/2023 03:15	36.5	48.6	38.1	34.0
17/04/2023 16:15	51.3	63.6	54.2	46.0	18/04/2023 03:30	36.6	49.2	38.1	34.4
17/04/2023 16:30	50.0	72.4	52.7	44.3	18/04/2023 03:45	38.6	53.4	39.9	34.9
17/04/2023 16:45	52.6	70.9	55.7	43.6	18/04/2023 04:00	37.8	52.6	39.5	34.9
17/04/2023 17:00	54.4	79.7	56.5	46.0	18/04/2023 04:15	40.1	54.8	42.7	35.6
17/04/2023 17:15	52.0	71.7	54.6	45.5	18/04/2023 04:30	40.8	55.4	43.4	36.6
17/04/2023 17:30	54.1	81.3	55.5	46.2	18/04/2023 04:45	43.7	60.2	47.2	37.5
17/04/2023 17:45	52.7	71.8	55.1	46.4	18/04/2023 05:00	46.4	58.2	49.7	40.0
17/04/2023 18:00	49.9	65.5	52.8	44.1	18/04/2023 05:15	50.7	63.3	54.0	44.6
17/04/2023 18:15	48.9	66.0	52.0	43.2	18/04/2023 05:30	51.4	61.1	54.6	42.9
17/04/2023 18:30	48.2	61.6	51.6	42.6	18/04/2023 05:45	47.3	62.8	50.7	41.4
17/04/2023 18:45	48.0	62.4	51.1	42.7	18/04/2023 06:00	46.6	61.3	49.4	41.0
17/04/2023 19:00	49.7	64.8	52.5	43.9	18/04/2023 06:15	46.7	67.5	49.8	41.6
17/04/2023 19:15	47.8	61.2	50.8	41.9	18/04/2023 06:30	48.1	69.5	50.8	42.5
17/04/2023 19:30	47.4	59.9	51.1	40.3	18/04/2023 06:45	47.7	61.7	51.0	42.6
17/04/2023 19:45	48.2	61.8	51.4	42.5	18/04/2023 07:00	47.8	65.3	50.0	41.8
17/04/2023 20:00	49.0	70.7	52.2	42.4	18/04/2023 07:15	48.4	61.2	51.8	43.0
17/04/2023 20:15	47.1	66.7	50.3	40.0	18/04/2023 07:30	49.3	67.7	52.5	43.6
17/04/2023 20:30	46.3	61.4	49.7	40.2	18/04/2023 07:45	50.1	63.1	53.3	44.4
17/04/2023 20:45	46.7	60.3	49.9	41.3	18/04/2023 08:00	51.7	64.5	54.7	44.6
17/04/2023 21:00	46.2	59.0	49.2	42.1	18/04/2023 08:15	50.6	71.4	52.9	45.7
17/04/2023 21:15	45.8	63.5	48.8	40.2	18/04/2023 08:30	50.2	64.9	53.6	43.6
17/04/2023 21:30	48.0	60.3	51.4	42.5	18/04/2023 08:45	50.3	62.8	52.9	45.4
17/04/2023 21:45	46.8	59.9	50.1	40.6	18/04/2023 09:00	51.0	71.7	53.5	45.7
17/04/2023 22:00	45.3	62.0	48.5	39.4	18/04/2023 09:15	48.6	61.8	51.6	43.4
17/04/2023 22:15	43.1	61.5	46.3	37.3	18/04/2023 09:30	49.8	63.1	52.8	44.7
17/04/2023 22:30	44.8	62.7	47.2	39.6	18/04/2023 09:45	51.1	68.3	53.4	44.3
17/04/2023 22:45	43.8	59.6	47.2	36.2	18/04/2023 10:00	49.7	66.8	51.3	43.8
17/04/2023 23:00	43.3	61.4	45.4	37.2	18/04/2023 10:15	52.7	69.6	52.7	44.2
17/04/2023 23:15	40.1	56.3	43.6	34.8	18/04/2023 10:30	48.8	65.7	51.7	43.7
17/04/2023 23:30	40.0	58.9	43.4	34.4	18/04/2023 10:45	52.1	69.8	54.7	43.8
17/04/2023 23:45	43.2	60.6	45.7	36.5	18/04/2023 11:00	52.5	68.9	54.7	45.2
18/04/2023 00:00	42.9	70.3	44.2	36.9	18/04/2023 11:15	50.0	71.1	52.3	43.6
18/04/2023 00:15	42.1	60.9	44.2	38.0	18/04/2023 11:30	50.0	64.8	52.5	45.1
18/04/2023 00:30	41.1	61.5	42.5	36.0	18/04/2023 11:45	50.4	65.3	53.7	44.5
18/04/2023 00:45	39.6	55.5	41.1	35.9	18/04/2023 12:00	51.0	62.6	54.0	45.7
18/04/2023 01:00	41.7	56.3	45.6	35.9	18/04/2023 12:15	49.6	62.6	52.7	44.1
18/04/2023 01:15	39.9	54.5	41.7	35.8	18/04/2023 12:30	49.6	63.7	52.7	43.4

Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB	Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB
18/04/2023 12:45	50.0	62.9	53.1	45.0	19/04/2023 00:00	46.2	62.1	48.4	41.7
18/04/2023 13:00	51.6	72.7	54.8	43.8	19/04/2023 00:15	45.6	64.5	47.4	42.7
18/04/2023 13:15	50.5	66.2	53.2	45.1	19/04/2023 00:30	45.5	64.1	46.9	42.0
18/04/2023 13:30	48.7	60.2	51.9	43.4	19/04/2023 00:45	43.7	55.2	45.3	41.4
18/04/2023 13:45	50.7	65.7	53.4	45.1	19/04/2023 01:00	44.4	57.9	46.0	41.8
18/04/2023 14:00	50.4	67.5	53.0	45.6	19/04/2023 01:15	45.7	62.3	47.6	42.3
18/04/2023 14:15	49.7	63.1	52.7	43.9	19/04/2023 01:30	44.9	57.9	47.1	42.3
18/04/2023 14:30	52.3	64.7	55.6	46.1	19/04/2023 01:45	44.2	60.7	46.1	41.2
18/04/2023 14:45	53.4	76.3	54.9	46.7	19/04/2023 02:00	44.0	60.6	45.8	41.3
18/04/2023 15:00	52.8	65.2	56.3	45.8	19/04/2023 02:15	43.1	57.0	44.7	41.2
18/04/2023 15:15	55.4	73.8	56.0	47.2	19/04/2023 02:30	42.7	61.8	44.1	40.4
18/04/2023 15:30	52.6	65.4	55.7	46.7	19/04/2023 02:45	42.7	62.3	44.2	40.4
18/04/2023 15:45	52.0	66.5	54.8	46.7	19/04/2023 03:00	42.5	55.9	44.0	40.4
18/04/2023 16:00	51.6	71.6	53.9	45.7	19/04/2023 03:15	42.6	55.1	44.3	39.9
18/04/2023 16:15	51.2	67.2	54.4	45.7	19/04/2023 03:30	43.3	61.5	44.3	40.0
18/04/2023 16:30	55.8	80.2	58.3	47.4	19/04/2023 03:45	42.6	58.1	44.2	39.8
18/04/2023 16:45	57.8	75.5	61.2	48.4	19/04/2023 04:00	42.8	65.1	44.1	39.4
18/04/2023 17:00	59.9	81.7	62.7	49.6	19/04/2023 04:15	42.5	59.0	44.1	39.6
18/04/2023 17:15	57.9	77.1	60.9	49.7	19/04/2023 04:30	41.8	54.0	43.3	39.3
18/04/2023 17:30	56.7	80.3	59.2	48.8	19/04/2023 04:45	44.8	65.4	46.8	40.5
18/04/2023 17:45	54.6	74.4	57.5	48.9	19/04/2023 05:00	47.9	62.6	51.0	42.8
18/04/2023 18:00	52.0	65.5	54.6	47.6	19/04/2023 05:15	50.5	65.5	54.3	43.6
18/04/2023 18:15	51.6	70.5	55.0	45.4	19/04/2023 05:30	51.7	62.1	55.4	44.0
18/04/2023 18:30	50.4	63.6	53.5	45.4	19/04/2023 05:45	49.1	64.1	52.4	42.7
18/04/2023 18:45	50.3	63.6	53.6	44.7	19/04/2023 06:00	47.4	64.1	50.0	42.3
18/04/2023 19:00	49.3	62.3	52.4	44.0	19/04/2023 06:15	48.0	64.3	51.5	42.0
18/04/2023 19:15	50.0	63.0	53.3	43.7	19/04/2023 06:30	47.5	64.5	50.5	42.4
18/04/2023 19:30	51.1	73.9	54.2	45.0	19/04/2023 06:45	46.7	60.0	49.3	42.6
18/04/2023 19:45	51.2	68.3	54.4	45.0	19/04/2023 07:00	49.6	67.0	52.9	42.5
18/04/2023 20:00	51.2	67.7	54.2	45.8	19/04/2023 07:15	48.8	63.1	52.2	42.4
18/04/2023 20:15	50.0	65.6	53.4	44.2	19/04/2023 07:30	48.7	64.3	51.8	42.6
18/04/2023 20:30	49.8	62.8	53.2	43.6	19/04/2023 07:45	53.6	68.7	57.5	45.5
18/04/2023 20:45	48.4	64.2	51.5	43.9	19/04/2023 08:00	53.2	65.4	56.3	47.1
18/04/2023 21:00	49.9	63.2	53.2	44.5	19/04/2023 08:15	51.9	64.6	54.6	46.4
18/04/2023 21:15	48.2	63.0	51.0	44.5	19/04/2023 08:30	52.6	68.9	55.0	47.0
18/04/2023 21:30	48.9	62.5	51.7	44.4	19/04/2023 08:45	51.8	65.7	54.5	46.9
18/04/2023 21:45	50.0	66.0	52.5	45.2	19/04/2023 09:00	50.5	63.6	53.2	46.4
18/04/2023 22:00	49.5	66.0	51.9	44.6	19/04/2023 09:15	50.2	66.6	52.8	46.0
18/04/2023 22:15	48.6	63.4	51.5	43.5	19/04/2023 09:30	50.8	62.4	53.6	46.5
18/04/2023 22:30	47.6	64.5	49.5	43.4	19/04/2023 09:45	51.5	64.8	54.1	47.3
18/04/2023 22:45	48.2	61.6	50.9	43.8	19/04/2023 10:00	53.7	70.5	57.5	44.9
18/04/2023 23:00	47.0	62.5	49.6	42.4	19/04/2023 10:15	50.6	65.4	53.6	44.8
18/04/2023 23:15	46.3	61.2	48.5	42.6	19/04/2023 10:30	51.6	67.7	54.5	45.4
18/04/2023 23:30	46.6	63.7	48.5	43.0	19/04/2023 10:45	50.2	61.7	53.1	46.2
18/04/2023 23:45	45.1	61.6	46.9	42.0	19/04/2023 11:00	49.7	61.6	52.5	45.1

Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB	Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB
19/04/2023 11:15	51.3	70.0	53.8	45.7	19/04/2023 22:30	45.0	62.7	47.8	40.9
19/04/2023 11:30	49.8	61.8	52.6	45.1	19/04/2023 22:45	46.3	63.5	49.7	41.1
19/04/2023 11:45	51.3	62.9	54.1	47.1	19/04/2023 23:00	44.3	68.5	45.4	40.8
19/04/2023 12:00	51.6	69.6	54.2	46.6	19/04/2023 23:15	43.2	55.8	45.2	40.2
19/04/2023 12:15	51.1	63.6	53.6	46.7	19/04/2023 23:30	44.0	59.0	46.9	40.1
19/04/2023 12:30	50.0	62.0	52.8	45.6	19/04/2023 23:45	44.9	64.2	47.1	40.3
19/04/2023 12:45	51.3	63.6	53.8	47.2	20/04/2023 00:00	45.0	64.0	47.7	39.9
19/04/2023 13:00	51.8	68.4	54.6	46.8	20/04/2023 00:15	42.1	57.2	44.3	39.0
19/04/2023 13:15	51.7	62.3	54.2	48.0	20/04/2023 00:30	41.8	55.0	43.4	38.8
19/04/2023 13:30	52.2	66.6	54.8	48.0	20/04/2023 00:45	42.8	58.8	44.9	39.4
19/04/2023 13:45	51.8	66.7	54.1	48.1	20/04/2023 01:00	43.6	58.2	45.0	40.5
19/04/2023 14:00	50.8	62.3	53.4	46.6	20/04/2023 01:15	42.8	59.2	44.3	40.1
19/04/2023 14:15	51.3	68.2	53.8	46.5	20/04/2023 01:30	41.2	53.3	42.9	38.9
19/04/2023 14:30	53.8	76.7	55.9	46.9	20/04/2023 01:45	41.4	55.0	43.3	38.6
19/04/2023 14:45	52.2	64.9	55.1	46.3	20/04/2023 02:00	42.2	61.7	43.6	38.7
19/04/2023 15:00	51.2	64.6	53.9	46.9	20/04/2023 02:15	41.2	60.1	42.8	37.7
19/04/2023 15:15	50.8	66.3	53.5	46.8	20/04/2023 02:30	41.4	56.3	42.7	37.8
19/04/2023 15:30	53.2	73.2	55.4	47.7	20/04/2023 02:45	40.4	55.0	42.2	37.4
19/04/2023 15:45	52.2	73.6	54.4	46.7	20/04/2023 03:00	40.3	51.8	41.9	37.8
19/04/2023 16:00	52.7	69.3	55.3	47.5	20/04/2023 03:15	39.4	49.0	41.1	37.3
19/04/2023 16:15	51.6	67.3	54.3	46.7	20/04/2023 03:30	40.6	57.2	41.4	37.4
19/04/2023 16:30	52.3	72.7	54.7	47.2	20/04/2023 03:45	38.9	52.7	39.8	36.7
19/04/2023 16:45	51.0	63.7	54.0	45.4	20/04/2023 04:00	38.7	48.0	39.9	36.8
19/04/2023 17:00	52.1	63.0	55.3	46.2	20/04/2023 04:15	40.5	54.9	41.7	37.9
19/04/2023 17:15	52.9	68.1	55.9	47.6	20/04/2023 04:30	46.1	55.4	49.1	40.2
19/04/2023 17:30	54.4	78.5	56.3	46.9	20/04/2023 04:45	48.2	58.2	50.9	43.7
19/04/2023 17:45	55.8	74.9	58.3	48.8	20/04/2023 05:00	50.4	58.0	52.7	47.4
19/04/2023 18:00	53.7	72.6	56.5	47.5	20/04/2023 05:15	51.0	61.7	53.8	46.2
19/04/2023 18:15	59.0	83.7	60.9	49.3	20/04/2023 05:30	51.8	66.5	54.7	45.4
19/04/2023 18:30	56.9	74.9	59.7	48.3	20/04/2023 05:45	49.6	69.6	52.0	44.8
19/04/2023 18:45	60.5	86.4	62.9	49.9	20/04/2023 06:00	46.9	60.5	49.3	44.2
19/04/2023 19:00	59.4	76.6	62.7	48.6	20/04/2023 06:15	49.9	67.5	50.8	44.8
19/04/2023 19:15	58.0	80.4	60.7	47.3	20/04/2023 06:30	48.4	66.0	50.6	45.9
19/04/2023 19:30	53.8	75.1	56.7	45.2	20/04/2023 06:45	48.8	65.2	50.8	45.9
19/04/2023 19:45	49.9	70.5	52.7	43.2	20/04/2023 07:00	49.7	65.0	51.4	46.1
19/04/2023 20:00	50.5	64.3	53.9	44.2	20/04/2023 07:15	52.4	78.2	52.0	46.3
19/04/2023 20:15	48.8	67.6	51.9	43.4	20/04/2023 07:30	48.6	58.6	50.8	46.0
19/04/2023 20:30	48.8	66.9	51.9	43.4	20/04/2023 07:45	49.5	62.9	51.9	45.8
19/04/2023 20:45	47.1	61.7	49.7	43.4	20/04/2023 08:00	49.5	63.0	52.1	45.1
19/04/2023 21:00	47.6	64.4	50.3	43.7	20/04/2023 08:15	49.0	60.1	51.8	44.4
19/04/2023 21:15	48.6	65.7	51.3	43.4	20/04/2023 08:30	48.5	58.0	51.1	44.4
19/04/2023 21:30	47.2	64.6	50.0	42.7	20/04/2023 08:45	50.6	67.6	53.7	45.2
19/04/2023 21:45	50.6	71.3	53.9	43.1	20/04/2023 09:00	50.0	61.7	53.1	44.1
19/04/2023 22:00	47.4	64.2	50.2	42.4	20/04/2023 09:15	50.7	66.1	53.7	44.5
19/04/2023 22:15	49.2	68.0	51.6	41.8	20/04/2023 09:30	51.3	75.6	53.5	46.4

Period Start	L_{Aeq}, dB	L_{Afmax}, dB	L_{A10}, dB	L_{A90}, dB
20/04/2023 09:45	51.8	67.2	54.5	46.8
20/04/2023 10:00	49.9	64.1	52.5	45.8
20/04/2023 10:15	51.3	64.6	54.0	47.2
20/04/2023 10:30	51.6	66.3	54.3	46.7
20/04/2023 10:45	50.4	63.1	52.7	46.9
20/04/2023 11:00	50.0	61.3	52.3	46.4
20/04/2023 11:15	50.9	60.7	53.6	46.8
20/04/2023 11:30	50.8	66.5	53.3	46.6
20/04/2023 11:45	52.2	69.9	54.7	47.7
20/04/2023 12:00	61.6	79.4	60.5	48.8

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