

**ENVIRONMENTAL NOISE ASSESSMENT
JURBY AVENUE
BLACKLEY, MANCHESTER
IRWELL VALLEY HOMES
ENA-22522A-23-33
JANUARY 2023**

IDOM



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Current Document Details

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SECTION 1 INTRODUCTION

- 1.1 Irwell Valley Homes is applying for planning permission to develop an area of land on Jurby Avenue, located off Plant Hill Road in Blackley, Manchester. The site lies within the administrative district of Manchester City Council (MCC).
- 1.2 The site occupies an area of approximately 0.32 hectares and development proposals comprise a 13-bed extra care/apartment building with 13 parking spaces. A proposed development layout is presented in Appendix 1.
- 1.3 IDOM Merebrook Limited (IDOM) has been commissioned by Irwell Valley Homes to undertake an environmental noise assessment to advise on the ambient noise levels and any constraints these may pose on the proposed end use.
- 1.4 The objectives of the investigation are to:
- i.* Undertake a site walkover and noise survey to determine the ambient noise climate at the site and its surroundings;
 - ii.* Assess the existing noise climate in relation to the National Planning Policy Framework (NPPF), associated Planning Practice Guidance and the Noise Policy Statement for England (NPSE) to determine constraints on potential future users of the site;
 - iii.* Assess the potential for noise emission from the development and its impact on existing and proposed receptors; and
 - iv.* Provide discussion on the findings of the investigation and indicate solutions for any identified issues.
- 1.5 This report relates solely to the ingress of externally generated environmental noise with regard to the preliminary development proposals.
- 1.6 This report has been prepared for Irwell Valley Homes for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult Irwell Valley Homes and IDOM as to the extent to which the findings may be appropriate for their use.

SECTION 2 SITE SETTING

2.1 INTRODUCTION

2.2 The site is located at the end of Jurby Avenue in Manchester, M9 6NG. The site occupies an area of approximately 0.32 hectares located at approximate National Grid Reference (NGR) 385530, 403518 as indicated on drawing 22522a-001-001 in Appendix 1. The site area is currently undeveloped.

2.1.1 The site is bound to the north by residential properties on Jurby Avenue. Land on the remaining boundaries is undeveloped.

2.1.2 Figure 1 below sets out recent satellite imagery of the site and the surrounding land uses and shows the position of the recent noise monitoring location.

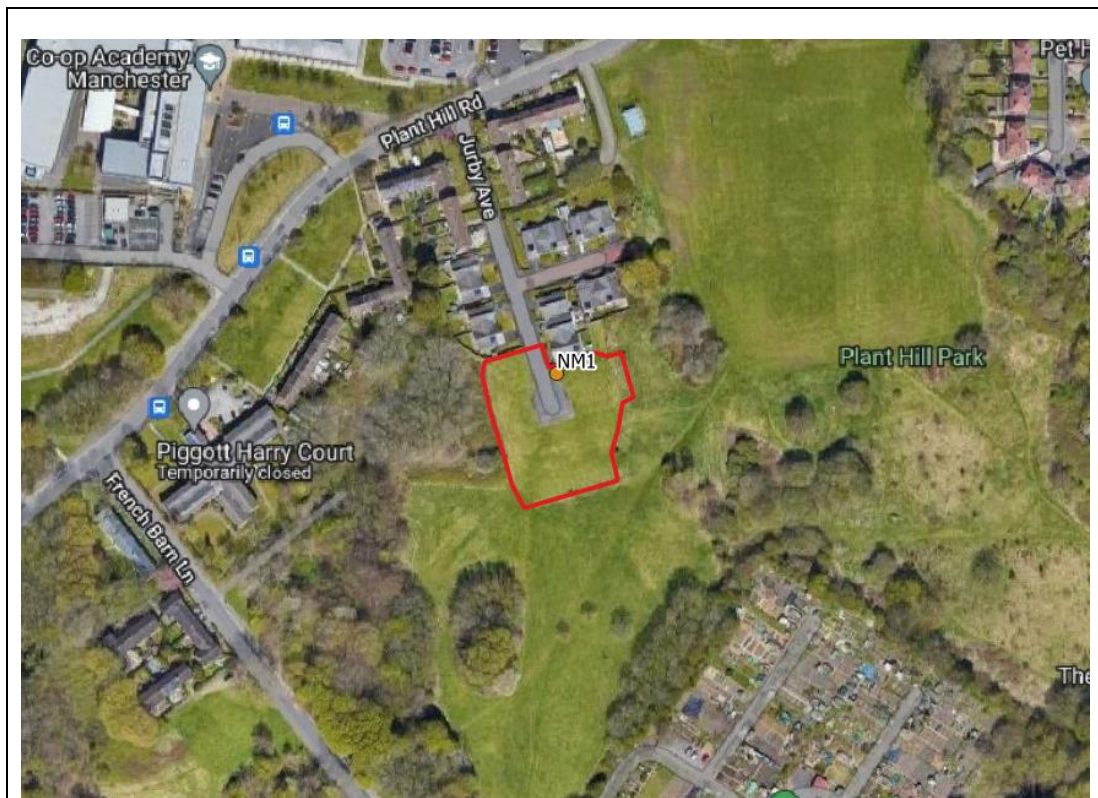


Figure 1: Recent satellite imagery of site (approximate red boundary) and surrounding land.

2.1.3 Ordinarily, the primary noise source affecting the site is from road traffic on Plant Hill Road 120 m to the north and distant traffic noise from the Manchester ring road (M60) located 1 km to the northeast. Due to Jurby Avenue being a cul-de-sac, there is usually very little traffic that would utilise the road.

2.1.4 However, during the site visit, it was noted that a temporary contractors' compound has been erected on northeast of the site to service construction works off-site. The compound comprised site cabins, storage cabins and welfare facilities. An IDOM

engineer kept a record of the noise generating activities associated with use of the compound so that these can be discounted from the survey as they are not representative of the true baseline noise conditions of the development site.

2.2 SENSITIVE RECEPTORS

2.2.1 Existing sensitive receptors in the vicinity of the site include:

- i. Existing residents of Jurby Avenue adjacent to the north of the site;
- ii. Residential dwellings to the west of the site along Plant Hill Road (45 m from the site); and
- iii. Students and staff at the Co-op Academy Secondary School approximately 140 m to the north of the site.

2.2.2 The development proposals will introduce new sensitive residential receptors. Other than during the construction phase, the proposed development is not considered to be significantly noise-generating.

SECTION 3 LEGISLATIVE CONTEXT AND ASSESSMENT CRITERIA

3.1 LEGISLATIVE CONTEXT

3.1.1 The NPPF came into force in March 2012 and was updated in February 2019 and again in July 2021. With regard to acoustic design and noise control, the NPPF provides a set of overarching aims, broadly reflecting those already contained in NPSE. They are directed towards the avoidance of significant adverse impacts and reduction of other adverse impacts on health and quality of life set within the context of the Government's policy on sustainable development. Clause 174, Point E of the NPPF states the following:

"Planning Policies and decisions should contribute to and enhance the natural and local environment by...preventing new and existing developments 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."

3.1.2 Clause 185 of the NPPF continues to state the following:

"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:

- i. *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 quality of life;*

- II. *Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."*

3.2 PLANNING PRACTICE GUIDANCE

- 3.2.1 In March 2014, Planning Practice Guidance was published to support the interpretation of the NPPF and this was updated in October 2019. The updated guidance sets out consideration of noise impact and sets out a noise impact hierarchy summarised below.

Table 1: Noise Exposure Hierarchy Based on Likely Average Response

RESPONSE	EXAMPLES OF OUTCOMES	INCREASING EFFECT LEVEL	ACTION
No Observed Effect Level			
Not present	No Effect	No Observed Effect	No specific measures required
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			
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			
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 deprivation / awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

3.3 PROFESSIONAL PRACTICE GUIDANCE ON PLANNING AND NOISE

3.3.1 In May 2017 professional practice guidance (ProPG¹) was published on planning and noise, focusing on good acoustic design, achievement of suitable internal and external noise levels and consideration of other relevant issues. Good acoustic design is aimed at delivering the optimum acoustic outcome for a particular site.

3.3.2 The ProPG guidance follows the principles of the national planning requirements and various British Standards and provides further detail on how to consider noise appropriately in new residential development. This assessment is cognisant of the principles of the ProPG guidance.

3.4 ACOUSTICS VENTILATION AND OVERHEATING: RESIDENTIAL DESIGN GUIDE (JAN 2020)

3.4.1 The AVO Guide sets out an approach to take due regard of the interdependence of provisions for acoustics, ventilation and overheating. Application of the AVO Guide is intended to demonstrate good acoustic design as described in ProPG when considering internal noise level guidelines.

3.5 APPROVED DOCUMENT O

3.5.1 Approved Document O (AD O) was released in the final quarter of 2021 and came into force for new Building Regulation applications from 15 June 2022. Approved Document O: Overheating applies to new residential buildings and is the first Building Regulation that considers the regulation of night-time noise in bedrooms.

3.5.2 The purpose of AD O is to protect the health and welfare of occupants of the buildings by reducing the occurrence of high indoor temperature. AD O is split into two requirements. O1 concerns overheating mitigation and sets out the following requirements:

(1) Reasonable provision must be made in respect of a dwelling, institution or any other building containing one or more rooms for residential purposes, other than a room in a hotel ("residences") to-

i. Limit unwanted solar gains in summer;

ii. Provide an adequate means to remove heat from the indoor environment.

In meeting the obligations in paragraph (1)-

i. Account must be taken of the safety of any occupant, and their reasonable enjoyment of the residence; and

¹ ProPG overseen by Working Group involving the Association of Noise Consultants, Institute of Acoustics, and Chartered Institute of Environmental Health together with practitioners from a planning and local authority background.

- ii. *Mechanical cooling may only be used where insufficient heat is capable of being removed from the indoor environment without it.*

- 3.5.3 Section 3.2 to 3.4 of AD O sets out the suitability of an overheating mitigation strategy to ensure that external noise levels are considered. Sections 3.2 and 3.3 state:

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

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

- i. *40 dB $L_{Aeq,T}$, averaged over 8 hours (between 11pm and 7am).*
- ii. *55 dB L_{AFmax} , more than 10 times a night (between 11pm and 7am).*

3.6 OTHER RELEVANT PLANNING POLICY

- 3.6.1 The *Manchester City Council Core Strategy Development Plan Document*² was adopted in 2012 and includes policy C10: Leisure and the Evening Economy and DM1: Development Management. Both of these policies specifically mention noise as follows.

Policy C10:

“.... Residential use should not create an unacceptable impact on neighbouring uses in terms of noise, traffic and disturbance....”

Policy DM1:

“All development should have regard to the following specific issues...Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise.”

3.7 ENVIRONMENTAL NOISE ASSESSMENT CRITERIA

- 3.7.1 This report uses British Standard benchmark criteria as part of the assessment process. The following section sets out the relevant benchmark standards that have been applied.
- 3.7.2 In this context, sensitive receptors are considered to be future residents of the new development.

² Manchester's Local Development Framework, Core Strategy, Manchester City Council (2012)

- 3.7.3 BS 8233:2014 'Guidance on Sound Insulation and Noise reduction for Buildings' defines a range of ambient noise levels for design purposes, in order that appropriate conditions are achieved in certain internal environments.
- 3.7.4 Table 2 reproduces guideline values from Table 2 of BS 8233:2014 with the relevant design criteria for residential dwellings. It is considered that satisfactory internal noise levels would be achieved provided that the aural environment in habitable rooms meets the BS 8233:2014 design criteria.

Table 2: BS 8233:2014 Indoor ambient noise levels for dwellings

ACTIVITY	LOCATION	TIME RANGE	
		07:00 to 23:00 Daytime	23:00 to 07:00 Night-Time
Resting	Living Room	35 dB L _{Aeq} , 16hr	-
Dining	Dining Room / Dining Area	40 dB L _{Aeq} , 16hr	-
Sleeping (daytime resting)	Bedroom	35 dB L _{Aeq} , 16hr	30 dB L _{Aeq} , 8hr

- 3.7.5 The windows and any trickle ventilators are usually the acoustic weak point of a brick and block façade. If it is necessary to rely on closed windows to meet the guideline values, BS8233 notes that there must be an alternative form of ventilation that does not compromise the façade insulation or the resulting noise level.
- 3.7.6 Night-time noise events can be significant in causing sleep disturbance. No specific guidance is presented in BS 8233:2014 regarding a noise limit applicable to maximum night-time noise. In line with ProPG Guidance, as part of this assessment the character and number of night-time noise events will be considered in a qualitative manner with an internal L_{Amax, F} of 45 dB used as an initial screening tool to identify night-time noise events that may be of significance to sleeping conditions in bedrooms. ProPG Guidance suggests that individual noise events should not exceed 45 dB L_{AFmax} more than ten times a night.
- 3.7.7 The development proposals include communal garden areas. BS 8233:2014 states that for traditional residential external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise levels do not exceed 50 dB L_{Aeq, T} with an upper guideline value of 55 dB L_{Aeq, T} which would be acceptable in noisier environments. It is considered that given the setting of the site, the 50 dB criterion would be desirable.

SECTION 4 ENVIRONMENTAL NOISE MEASUREMENT - MONITORING METHODOLOGY

4.1 MONITORING SURVEY

- 4.1.1 The existing ambient noise climate has been assessed by noise measurement survey using continuous fixed monitoring with the monitor partially attended so that

qualitative observations could be made on the noise sources contributing to the noise climate at the site.

4.1.2 The noise survey was undertaken on 18 and 19 January 2023 including samples from the night-time and daytime periods. The noise monitoring started at 13:45 on the 18th of January and finished at 10:01 on the 19th of January.

4.1.3 The measurement survey was undertaken on weekdays during school term time.

4.2 **NOISE MEASUREMENT**

4.2.1 The monitoring position is shown in Figure 1 above and co-ordinates by mobile GPS are provided below.

- i.* Position NM1 was located in the northeast of the site approximately 5 m from Jurby Avenue (lat 53.52842, long 2.21954).

4.2.2 The location of monitoring position NM1 are shown in Figures 2 - 4 below.



Figure 2: NM1 approx. 5 m from the edge of the road (north facing).



Figure 3: NM1 taken from the pavement (south-eastern facing)

4.3 NOISE MONITORING EQUIPMENT

4.3.1 Sound level measurements were undertaken with the use of the following Class 1 Sound Level Meter:

- i.* Casella CEL-63X Sound Level Meter (serial number: 4278102) fitted with a Casella CEL-251 microphone (serial number: 00818) and a Casella CEL-495 preamplifier (serial number: 005352). Laboratory calibration was last carried out in June 2022.

4.3.2 The Casella Sound Level Meter was calibrated in the field with a Casella CEL-120/1 calibrator (serial number: 2621477) with a reference level of 94 dB at 1000 Hz, immediately before and after each measurement with no significant drift in calibration level noted. The calibrator was last calibrated in the laboratory in June 2022.

4.3.3 Copies of all the calibration certificates can be provided upon request.

4.4 NOISE MONITORING CONDITIONS

4.4.1 Noise measurement at NM1 was made at approximately 1.8 metres above ground level. The monitor was attached to a stair rail leading to the portable cabin, however this cabin entrance was permanently locked and was not in use. The monitoring position is not strictly free field as there will be some partial reflections from the

corner of the portable site cabin that the monitor was attached to. A windshield was fitted for all measurements.

- 4.4.2 Weather conditions during the survey on 18 and 19 January 2023 were appropriate for noise monitoring and were cold and dry with no discernible wind. Monitoring ceased at 10:01 on 19 January.
- 4.4.3 Full details of the monitoring and notes on the noise sources identified are presented on field monitoring records in Appendix 2.

SECTION 5 ENVIRONMENTAL MONITORING RESULTS – EXISTING BASELINE

5.1 QUALITATIVE DESCRIPTION OF NOISE CLIMATE

- 5.1.1 Ordinarily, the primary noise source affecting the site is from road traffic on Plant Hill Road 120 m to the north and distant traffic noise from the Manchester ring road (M60) located 1 km to the northeast. Due to Jurby Avenue being a cul-de-sac, there is usually very little traffic using the road. Occasional birdsong of seagulls, magpies and crows was noted throughout the day. The Co-op academy school (140 m to the north of the site) finishes at 15:00 which led to an increase in traffic on Plant Hill Road and a slight increase in pedestrians along Jurby Avenue.
 - 5.1.2 A temporary contractors' compound was present on the northeast of the site (comprising site cabins, storage cabins and welfare facilities) to service construction works off-site. The off-site construction works were not audible from the subject site. An IDOM officer was present on site from 07:40 on 19th January to observe the usage of the compound and to assess the potential impact on the noise climate. There was no audible fixed plant within the compound (*e.g.* no generator noise). The noise climate at this time was influenced by activities in the construction compound including vehicles, voices and banging as container doors were closed. The majority of construction workers left site by 08:20. Discussion with the compound occupiers confirmed that this early morning period is when the majority of the activity occurs at the compound.
 - 5.1.3 An IDOM officer was also present on site from 15:00 to 15:30 on 18th January to cover the end of the school day. There was no notable change in noise level from normal daytime noise, despite local schools finishing. Some school children walked past the site but there was no notable change in noise level. The loudest noises during this period continued to be from construction vans occasionally pulling up at the compound to use the skip and workers talking on site.
 - 5.1.4 The field monitoring records are presented in Appendix 2.
- ### 5.2 ACOUSTIC MEASUREMENT RESULTS
- 5.2.1 The results of the noise monitoring are summarised in Table 3 below and the sound level meter data is presented in Appendix 3.

Table 3: Summary of Noise Monitoring data

	DURATION	L _{Aeq,15min} (dB)		L _{AFmax,1min} (dB)		L _{A90,15min} (dB)
		RANGE	LOG AVERAGE	RANGE	11th loudest	RANGE
DAY	12h30m	43 - 65	52	-	-	37.5 - 46
NIGHT (ALL DATA)	8h	39 - 52	43	39 - 86	59	37.5 - 43
NIGHT (EDITED)	7h45m	39 - 46	42	39 - 68	56	37.5 - 43
*excluding 06:45 to 07:00 due to likely influence from arrival of contractors at construction compound						

5.2.2 Measured noise levels are presented graphically in Appendix 4.

5.2.3 Based on review of the noise data, together with evidence from site observations and discussion with contractors, it is considered reasonable to omit night-time data from 06:45 to 07:00 from the dataset as this is likely impacted by the arrival of construction workers to the compound and this will unduly skew the night-time data. Consideration was made to removing the 07:00 to 08:30 period from the daytime dataset due to influence from construction compound noise, however this does not make any substantial difference to the summary values provided above. All daytime data has been retained to ensure a precautionary approach. It is however acknowledged that the daytime noise data is likely to overestimate the typical noise level as a result of the addition of noise from the construction compound.

SECTION 6 ASSESSMENT OF ENVIRONMENTAL NOISE RESULTS

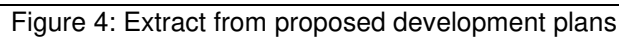
6.1 INTRODUCTION

6.1.1 The proposed development of the site will introduce sensitive residential receptors to an environment which is impacted by road traffic noise.

6.1.2 As set out in Section 3.5, it is considered that satisfactory internal sound levels will be achieved provided the aural environment in habitable rooms meets the BS 8233 design range, so that there are no significant adverse effects from noise. In addition, it is considered that the steady sound level should not exceed 50 dB L_{Aeq,T} in external amenity areas.

6.2 OUTDOOR AMENITY AREAS

6.2.1 The proposed development plan provides two communal gardens for the extra care apartments, one designated 'quiet garden' in the north-western section of the site and a communal garden in the south-western section of the site as shown in the drawing extract below.



6.2.3 Given that long duration measurement likely overestimates the noise climate and given that the proposed garden areas are set back from the Jurby Avenue turning circle, it is considered that noise levels in external garden amenity areas are likely to be within the acceptable range without further mitigation.

6.3.1 Table 4 illustrates the night-time acoustic insulation performance requirements required in order to meet BS8233 benchmark standards for bedrooms.

Table 4: Night-time acoustic reduction requirements for bedrooms

POSITION	PERIOD	REPRESENTATIVE EXTERNAL NOISE LEVEL (dB)	INTERNAL TARGET CRITERIA (dB)	SOUND REDUCTION REQUIRED (dB)
NM1	Night time ($L_{Aeq, 8\text{hour}}$)	42	30	12
	Night time (L_{AFmax})	56	45	11

* Note: this table does not take into account building screening effects

6.3.2 The representative L_{AFmax} at night has been based on the 11th loudest $L_{AFmax, 1\text{min}}$ event from the night-time period, excluding data from 06:45 to 07:00 which was likely influenced by arrivals at the construction compound.

6.3.3 For all facades, the acoustic performance of standard double-glazed units is considered to provide sufficient noise attenuation to ensure suitable internal noise levels in bedrooms at night. Internal noise criteria will also be achieved if the windows are partially open for ventilation purposes whereby 13 dB noise attenuation would apply from outdoors to indoors.

6.4 DAYTIME STANDARDS IN LIVING ROOMS

6.4.1 Table 5 sets out the daytime acoustic insulation performance requirements for the glazing units in living rooms based on measured L_{Aeq} data.

Table 5: Daytime acoustic reduction requirements for living rooms based on log average noise L_{Aeq}

POSITION	PERIOD	REPRESENTATIVE EXTERNAL NOISE LEVEL (dB)	INTERNAL TARGET CRITERIA (dB)	SOUND REDUCTION REQUIRED (dB)
NM1	Day time ($L_{Aeq, 8\text{hour}}$)	52	35	17

* Note: this table does not take into account building screening effects

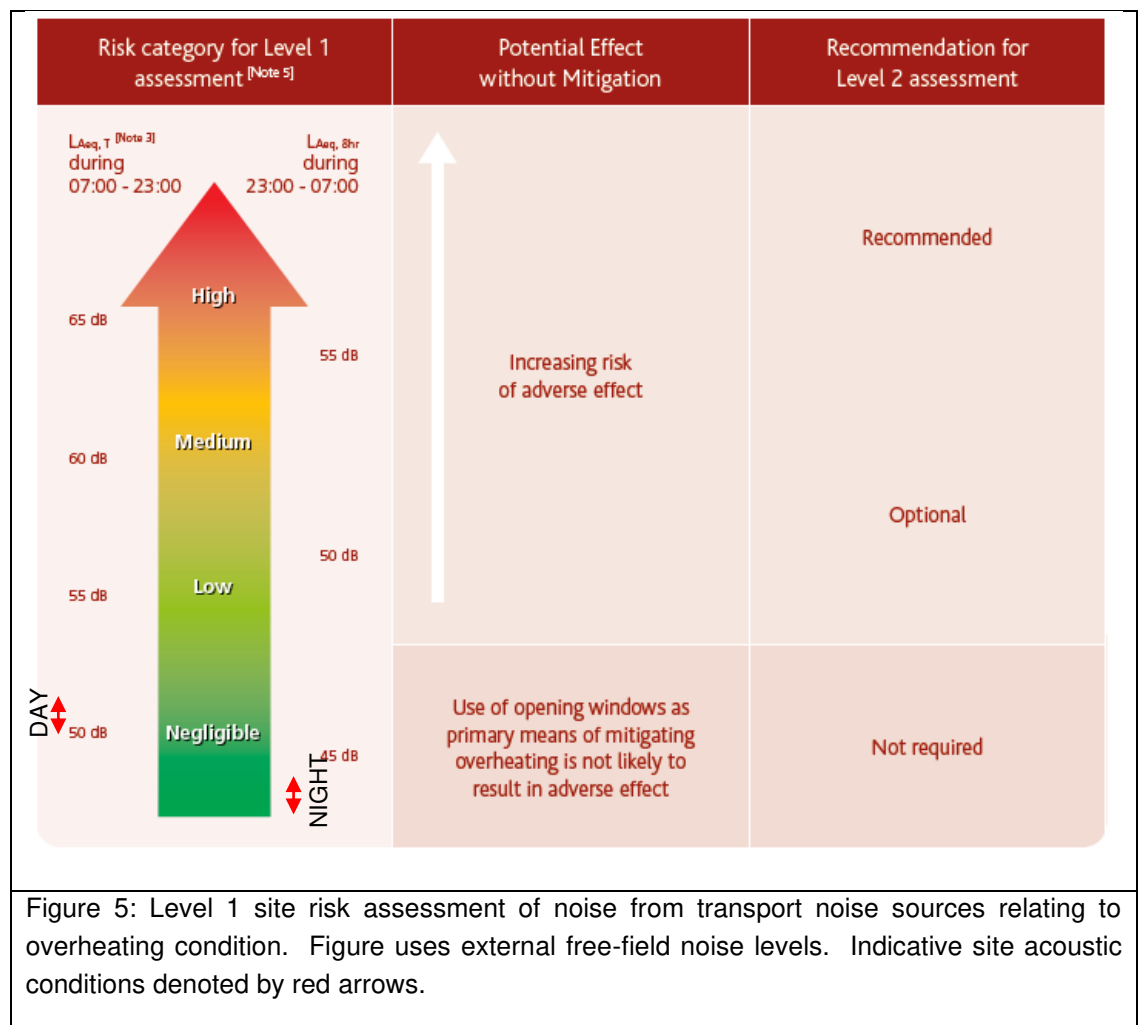
6.4.2 The acoustic performance of closed standard double glazed units is considered to provide sufficient noise attenuation to ensure suitable internal noise levels during the daytime. If the windows were partially open, then internal noise criteria may be slightly exceeded for those facades closest to the noise sources.

6.4.3 The design of the ventilation strategy and assessment of summer overheating risk must take account of these acoustic constraints.

6.4.4 Where facades assume an ordinarily 'closed window' for acoustic mitigation purposes, windows may still be openable for rapid or purge ventilation or for residents' choice but should not remain open for prolonged periods of time. Where trickle vents are included within the glazing, providing passive background

ventilation, these should be acoustically treated so as not to form an acoustic weak point. Alternatively, mechanical means of background ventilation may be used.

- 6.4.5 With regard to noise impact during the overheating condition, an assessment of the potential risk from overheating has been carried out in line with the *Acoustics Ventilation and Overheating: Residential Design Guide*.³ The assessment has also been undertaken in support of an assessment of overheating and ventilation, which is required to be undertaken in accordance with Approved Document O⁴.
- 6.4.6 A preliminary level one assessment for the site has been undertaken in Figure 5 below. The assessment uses representative external free-field noise levels and assumes a partially open window is used to mitigate overheating. The assessment confirms that the use of open windows as a primary means of mitigating overheating is not likely to result in adverse effect.



³ AVO Acoustics Ventilation and Overheating: Residential Design Guide, Dated: January 2020

⁴ Approved Document O (Overheating) Requirement O1: Overheating mitigation, Regulations 40B. 2021 edition.

SECTION 7 CONCLUSIONS

7.1 EXTERNAL AMENITY SPACE – COMMUNAL GARDENS

- 7.1.1 Noise levels in external garden amenity areas are considered to be within the acceptable range without further mitigation.

7.2 GLAZING

- 7.2.1 This report assumes that the glazing and any trickle ventilators form the weak point of the façade (see also paragraph 3.5.5). The acoustic performance of standard double glazed units is considered to provide sufficient noise attenuation to ensure suitable internal noise levels in all living rooms and bedrooms.

7.3 NIGHT-TIME STANDARDS IN BEDROOMS

- 7.3.1 Night-time internal noise criteria will be achieved with partially open double glazed windows, thereby allowing for natural ventilation.

7.4 DAYTIME STANDARDS IN LIVING ROOMS

- 7.4.1 Closed standard double glazing will also be suitable in living areas, but with some constraints for the ventilation strategy.

7.5 VENTILATION STRATEGY

- 7.5.1 The design of the ventilation strategy and assessment of summer overheating risk must take acoustic constraints into account.
- 7.5.2 Where facades assume an ordinarily 'closed window' for acoustic mitigation purposes, windows may still be openable for rapid or purge ventilation or for residents' choice but should not remain open for prolonged periods of time. Where trickle vents are included within the glazing to provide passive background ventilation, these should be specified so as not to form an acoustic weak point. Alternatively, mechanical means of background ventilation may be used. The use of open windows as a primary means of mitigating temporary overheating is not likely to result in adverse effect.

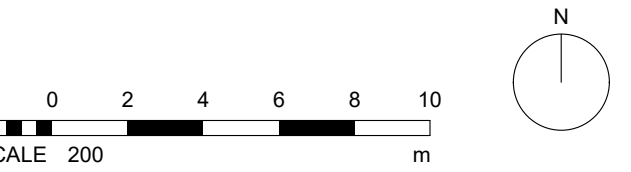
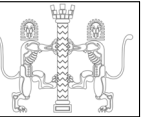
7.6 CONCLUSIONS

- 7.6.1 Noise measurement survey has been carried out to determine the impact of environmental noise on the proposed residential development.
- 7.6.2 A mitigation scheme has been presented in line with current planning practice guidance to ensure that noise, whilst noticeable, will not be intrusive and benchmark noise standards will be met.

APPENDIX 1 ▪ Drawings

Notes

Jennings Design Associates take no responsibility for any dimensions obtained by scaling from this drawing. If no dimension is shown the recipient must ascertain the dimension specifically from the Architect or by site measurement. Supplying this drawing in digital form is solely for convenience and no reliance may be placed on digital data. All data must be checked against hard copy. Dimensions must be checked on site. Any discrepancies must be reported to the Architect immediately. This drawing is copyright of Jennings Design Associates



Rev	Description	Date	By
P01	Scheme revised to accommodate existing drainage route	27/07/2022	SD

Revision Schedule

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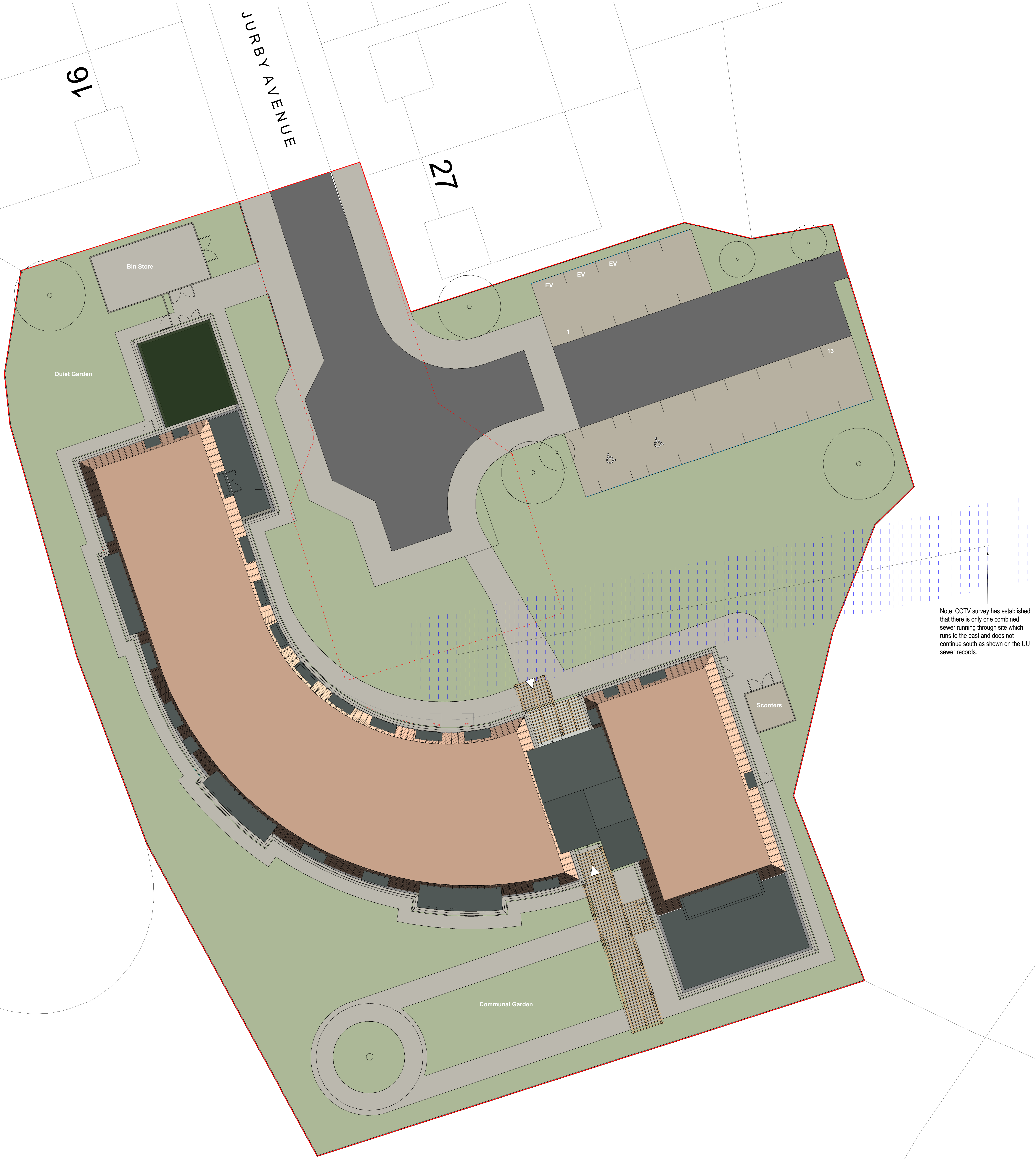
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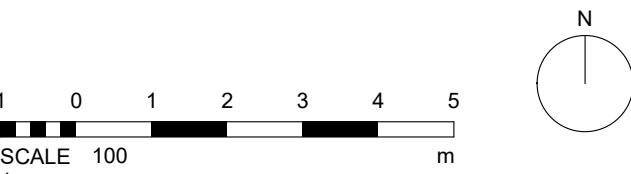
Client Irwell Valley Homes			
Project Jurby Avenue, Blackley			
Model Status: WIP		Project Status: Planning	
Scale: 1 : 200	@ Paper size @A1	Date: 07/01/2022	Drawn by: SD
Project Number 1226		Drawing Number Z1	
Description Existing Site Plan		Checked By: TK	

Notes

Jenings Design Associates take no responsibility for any dimensions obtained by scaling from this drawing. If no dimension is shown the recipient must measure the dimension themselves from the Architect or by site measurement. Supplying this drawing in digital form is solely for convenience and no reliance may be placed on digital data. All data must be checked against hard copy. Dimensions must be checked on site. Any discrepancies must be reported to the Architect immediately. This drawing is copyright of Jennings Design Associates



Note: CCTV survey has established that there is only one combined sewer running through site which runs to the east and does not continue south as shown on the UU sewer records.



PSD	Refer internal layout alterations prior to planning submission	20/09/2022	SD
PSD	Schema revised to accommodate existing drainage route	21/07/2022	SD
PSD	Scale bar & North arrow added to proposed plan	10/11/2022	PSD
Rev	Description	Date	By

Revision Schedule

jda architects

info@jda-architects.com
www.jda-architects.com

manchester: 0161 338 5011
liverpool: 0151 695 2112

Client				Irwell Valley Homes			
Project				Jurby Avenue, Blackley			
Project Status		Project Status		Project Status		Project Status	
WIP		Planning		Planning		Planning	
Scale	1:100	By Name	@AG	Date	13/12/2021	Drawn by	TK
Project Number / Drawing Number				1226 JDA Z1 00 A DR 0003			
Proposed Site Plan				PSD			

APPENDIX 2 ▪ Field Monitoring Records

ENVIRONMENTAL NOISE FIELD MONITORING RECORD

SITE NAME	Jurby Avenue	PROJECT NUMBER	22522a	DATE	18/01/2022	RECORDED BY	Harry Foster & Andrew Harris
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INSTRUMENTATION	TYPE	SERIAL NUMBER	DOLC	FIELD CALIBRATION			
SOUND LEVEL METER	Casella CEL-63X	4278102	Jun-22	CALIBRATION LEVEL: 94 dB			
MICROPHONE	Casella CEL-251	818	Jun-22	CALIBRATION CHANGE AT START	0.1	CALIBRATION CHANGE AT END	-0.2
PREAMPLIFIER	Casella CEL-495	5352	Jun-22				
CALIBRATOR	Casella CEL-120/1	2621477	Jun-22				

MONITORING LOCATION (>3.5 m from reflecting surface OR apply façade correction post processing)	NM1	MICROPHONE HEIGHT ABOVE GROUND LEVEL (m) (1.2-1.5 m)	1.8	BATTERY LEVEL AT START (V)		BATTERY LEVEL AT END (V)	
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Start Time	13:45:00	End Time	10:01:00
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WEATHER OBSERVATIONS

Partly cloud, light breeze, sunny spells, cold/frosty

NOISE CLIMATE (GENERAL)

Occasional road traffic on Jurby Avenue - mostly cars turning around or Emmanuel Whittaker vans turning up at their compound on the site.
Background road traffic from Plant Hill Road and constant noise of the M60 ring road.
Regular aeroplane whirling noises overhead
Occasional birdsong - mainly magpies, crows and seagulls.

NOISE CLIMATE (SITE)

On site noise is mainly from the Emmanuel Whittaker (EW) currently using the site as a storage compound/cabin office for their nearby site. Lots of banging doors, cars/vans arriving, people talking loudly. Other on site noise is occasional birdsong. 18/01/2023 -

15:00 to 15:30 to cover the end of the school day.

- No notable change in noise from normal daytime noise despite local schools finishing
- Some schoolchildren walked past the site but no notable change in noise level
- Loudest noises continued to be from vans pulling up at the site to use the skip and workers talking on site

19/01/2023 - Detailed noise recording was done by HDF on the 19th of Jan from 7:40-10am:

7:40 - general chatter from EW compound (inside their cabin but you can stil hear chatting and laughter from the outside).

7:46 - loud laughing from EW compound

7:48 - van door slams shut

7:49 - EW van arrives and lots of loud chatting as majority of workers leave the compound cabin and go to their vans to leave the site.

7:50 - Mutiple van engines start and idle, van doors shutting/sliding.7:54 - aeroplane overhead

7:56 - car and van arrive at the end of Jurby Avenue (JA)

7:57 - door slamming and EW workers chatting

7:58 - Continued chatting outside, doors shutting, engines idling and van reverse beeper.

8:00 - General chatting outside, idling engines, door slams, engine start ups

8:02 - Car leaves the site, no more idling engines, still general chatter and door movements

8:04 - Compound doors shutting/knocking, general chatter

8:05 - engine starts, door slams8:06 - EW van arrives, door slams and chatter

8:08 - Door shutting and chatter

8:11 - engine starts, door shuts and car drives away from the site - still general chatter within the compound cabins

8:13 - sports car revving engine in the distance

8:14 - cars turning around further up JA (at the halfway T-junction)

8:15 - car horns and sports car revving in the distance

8:18 - majority of EW workers leaving the site, loading vans with materials collected from the storage containers on site, knocking and banging of container doors shutting, van doors sliding and shutting and loud chatter.

APPENDIX 3 ▪ Sound Level Meter Data

ALL DATA

ENDDATETIME	STARTDATETIME	LAFMAX	LAFMAXTIME	LAEQ	LAF10	LAF90
18/01/2023 13:59	18/01/2023 13:44	63.6	18/01/2023 13:44	49.8	53.0	44.0
18/01/2023 14:14	18/01/2023 13:59	85.7	18/01/2023 14:12	59.1	52.5	44.0
18/01/2023 14:29	18/01/2023 14:14	70.4	18/01/2023 14:14	49.6	51.5	44.0
18/01/2023 14:44	18/01/2023 14:29	64.4	18/01/2023 14:30	48.6	50.5	45.0
18/01/2023 14:59	18/01/2023 14:44	72.4	18/01/2023 14:51	51.7	53.5	44.5
18/01/2023 15:14	18/01/2023 14:59	75.0	18/01/2023 15:06	52.1	52.0	45.0
18/01/2023 15:29	18/01/2023 15:14	74.5	18/01/2023 15:19	48.2	50.0	44.5
18/01/2023 15:44	18/01/2023 15:29	78.5	18/01/2023 15:38	53.2	54.5	46.0
18/01/2023 15:59	18/01/2023 15:44	95.2	18/01/2023 15:47	65.1	56.5	45.5
18/01/2023 16:14	18/01/2023 15:59	79.7	18/01/2023 16:03	51.8	52.0	44.5
18/01/2023 16:29	18/01/2023 16:14	66.1	18/01/2023 16:26	47.0	48.5	45.0
18/01/2023 16:44	18/01/2023 16:29	71.5	18/01/2023 16:31	49.4	49.0	45.0
18/01/2023 16:59	18/01/2023 16:44	55.0	18/01/2023 16:54	46.7	48.0	45.0
18/01/2023 17:14	18/01/2023 16:59	53.3	18/01/2023 17:02	46.0	47.0	44.5
18/01/2023 17:29	18/01/2023 17:14	49.2	18/01/2023 17:25	45.3	46.5	44.0
18/01/2023 17:44	18/01/2023 17:29	68.4	18/01/2023 17:38	48.1	47.0	44.5
18/01/2023 17:59	18/01/2023 17:44	64.8	18/01/2023 17:55	48.3	51.0	44.0
18/01/2023 18:14	18/01/2023 17:59	65.0	18/01/2023 18:04	47.0	47.0	43.0
18/01/2023 18:29	18/01/2023 18:14	70.1	18/01/2023 18:27	49.5	48.0	42.0
18/01/2023 18:44	18/01/2023 18:29	69.0	18/01/2023 18:33	47.8	47.0	43.5
18/01/2023 18:59	18/01/2023 18:44	64.9	18/01/2023 18:53	47.7	47.0	44.5
18/01/2023 19:14	18/01/2023 18:59	57.7	18/01/2023 19:12	46.2	47.5	44.5
18/01/2023 19:29	18/01/2023 19:14	72.2	18/01/2023 19:24	45.4	45.5	41.0
18/01/2023 19:44	18/01/2023 19:29	51.3	18/01/2023 19:34	43.6	45.0	41.5
18/01/2023 19:59	18/01/2023 19:44	64.9	18/01/2023 19:46	47.6	48.0	44.0
18/01/2023 20:14	18/01/2023 19:59	68.0	18/01/2023 20:08	49.7	51.0	46.0
18/01/2023 20:29	18/01/2023 20:14	64.1	18/01/2023 20:19	48.7	49.5	44.5
18/01/2023 20:44	18/01/2023 20:29	56.2	18/01/2023 20:30	46.8	48.0	45.5
18/01/2023 20:59	18/01/2023 20:44	62.4	18/01/2023 20:58	47.5	48.5	45.0
18/01/2023 21:14	18/01/2023 20:59	59.5	18/01/2023 21:00	44.9	47.5	41.5
18/01/2023 21:29	18/01/2023 21:14	55.9	18/01/2023 21:26	43.7	46.0	41.0
18/01/2023 21:44	18/01/2023 21:29	51.9	18/01/2023 21:33	43.1	44.5	41.0
18/01/2023 21:59	18/01/2023 21:44	63.2	18/01/2023 21:48	44.7	45.5	41.0
18/01/2023 22:14	18/01/2023 21:59	61.0	18/01/2023 22:01	44.8	45.5	41.5
18/01/2023 22:29	18/01/2023 22:14	60.3	18/01/2023 22:25	44.1	45.5	42.5
18/01/2023 22:44	18/01/2023 22:29	57.7	18/01/2023 22:41	45.3	46.5	43.5
18/01/2023 22:59	18/01/2023 22:44	57.4	18/01/2023 22:48	44.5	46.0	43.0
18/01/2023 23:14	18/01/2023 22:59	52.3	18/01/2023 23:06	44.5	46.0	43.0
18/01/2023 23:29	18/01/2023 23:14	68.1	18/01/2023 23:17	46.4	46.0	42.5
18/01/2023 23:44	18/01/2023 23:29	62.1	18/01/2023 23:42	45.9	46.0	42.5
18/01/2023 23:59	18/01/2023 23:44	60.7	18/01/2023 23:44	44.9	46.0	42.0
19/01/2023 00:00	18/01/2023 23:59	45.5	18/01/2023 23:59	43.5	45.0	42.0
19/01/2023 00:15	19/01/2023 00:00	59.1	19/01/2023 00:02	43.9	45.0	41.5
19/01/2023 00:30	19/01/2023 00:15	48.0	19/01/2023 00:19	43.2	45.0	41.5
19/01/2023 00:45	19/01/2023 00:30	55.7	19/01/2023 00:33	42.3	44.0	40.0
19/01/2023 01:00	19/01/2023 00:45	53.2	19/01/2023 00:50	40.4	42.5	38.5
19/01/2023 01:15	19/01/2023 01:00	53.4	19/01/2023 01:01	41.1	43.0	39.0
19/01/2023 01:30	19/01/2023 01:15	58.1	19/01/2023 01:21	41.9	43.5	40.0
19/01/2023 01:45	19/01/2023 01:30	49.0	19/01/2023 01:37	41.3	42.5	40.0
19/01/2023 02:00	19/01/2023 01:45	63.5	19/01/2023 01:56	44.4	48.0	38.0
19/01/2023 02:15	19/01/2023 02:00	54.6	19/01/2023 02:08	39.5	41.0	37.5
19/01/2023 02:30	19/01/2023 02:15	48.8	19/01/2023 02:25	39.5	41.0	37.5

ALL DATA

ENDDATETIME	STARTDATETIME	LAFMAX	LAFMAXTIME	LAEQ	LAF10	LAF90
19/01/2023 02:45	19/01/2023 02:30	43.6	19/01/2023 02:30	39.0	40.0	37.5
19/01/2023 03:00	19/01/2023 02:45	55.5	19/01/2023 02:53	39.5	41.0	37.5
19/01/2023 03:15	19/01/2023 03:00	50.4	19/01/2023 03:03	40.2	42.0	38.0
19/01/2023 03:30	19/01/2023 03:15	50.7	19/01/2023 03:19	40.1	42.0	38.0
19/01/2023 03:45	19/01/2023 03:30	50.8	19/01/2023 03:38	39.0	40.5	37.5
19/01/2023 04:00	19/01/2023 03:45	48.5	19/01/2023 03:56	39.7	40.5	38.5
19/01/2023 04:15	19/01/2023 04:00	55.9	19/01/2023 04:13	40.5	41.5	38.5
19/01/2023 04:30	19/01/2023 04:15	49.6	19/01/2023 04:23	41.0	42.5	39.5
19/01/2023 04:45	19/01/2023 04:30	48.8	19/01/2023 04:37	41.9	43.0	40.5
19/01/2023 05:00	19/01/2023 04:45	45.6	19/01/2023 04:45	40.7	41.5	39.5
19/01/2023 05:15	19/01/2023 05:00	48.3	19/01/2023 05:01	42.1	44.0	40.0
19/01/2023 05:30	19/01/2023 05:15	50.9	19/01/2023 05:25	42.6	44.0	41.0
19/01/2023 05:45	19/01/2023 05:30	50.6	19/01/2023 05:42	43.2	45.0	41.0
19/01/2023 06:00	19/01/2023 05:45	50.5	19/01/2023 05:59	42.8	44.5	40.5
19/01/2023 06:15	19/01/2023 06:00	47.3	19/01/2023 06:09	41.2	42.5	39.5
19/01/2023 06:30	19/01/2023 06:15	52.4	19/01/2023 06:17	42.8	44.0	41.5
19/01/2023 06:45	19/01/2023 06:30	46.6	19/01/2023 06:35	41.6	43.0	40.5
19/01/2023 07:00	19/01/2023 06:45	86.1	19/01/2023 06:56	52.4	52.0	40.5
19/01/2023 07:15	19/01/2023 07:00	77.8	19/01/2023 07:08	47.0	44.0	39.5
19/01/2023 07:30	19/01/2023 07:15	74.4	19/01/2023 07:21	52.5	54.0	41.0
19/01/2023 07:45	19/01/2023 07:30	78.0	19/01/2023 07:35	54.3	58.0	39.0
19/01/2023 08:00	19/01/2023 07:45	74.1	19/01/2023 07:48	48.8	51.0	37.5
19/01/2023 08:15	19/01/2023 08:00	65.8	19/01/2023 08:06	48.6	55.0	38.5
19/01/2023 08:30	19/01/2023 08:15	83.5	19/01/2023 08:19	53.3	55.0	41.5
19/01/2023 08:45	19/01/2023 08:30	68.6	19/01/2023 08:40	52.0	54.0	43.5
19/01/2023 09:00	19/01/2023 08:45	67.0	19/01/2023 08:58	47.3	46.5	42.0
19/01/2023 09:15	19/01/2023 09:00	73.7	19/01/2023 09:05	53.7	57.5	45.0
19/01/2023 09:30	19/01/2023 09:15	75.6	19/01/2023 09:18	49.4	50.0	45.0
19/01/2023 09:45	19/01/2023 09:30	75.1	19/01/2023 09:39	47.9	50.0	43.5
19/01/2023 10:00	19/01/2023 09:45	71.3	19/01/2023 09:57	50.0	50.0	44.0
19/01/2023 10:01	19/01/2023 10:00	74.2	19/01/2023 10:00	51.1	50.5	44.5

DAYTIME - ALL DATA

ENDDATETIME	STARTDATETIME	LAFMAX	LAFMAXTIME	LAEQ	LAF90
18/01/2023 13:59	18/01/2023 13:44	63.6	18/01/2023 13:44	49.8	44.0
18/01/2023 14:14	18/01/2023 13:59	85.7	18/01/2023 14:12	59.1	44.0
18/01/2023 14:29	18/01/2023 14:14	70.4	18/01/2023 14:14	49.6	44.0
18/01/2023 14:44	18/01/2023 14:29	64.4	18/01/2023 14:30	48.6	45.0
18/01/2023 14:59	18/01/2023 14:44	72.4	18/01/2023 14:51	51.7	44.5
18/01/2023 15:14	18/01/2023 14:59	75.0	18/01/2023 15:06	52.1	45.0
18/01/2023 15:29	18/01/2023 15:14	74.5	18/01/2023 15:19	48.2	44.5
18/01/2023 15:44	18/01/2023 15:29	78.5	18/01/2023 15:38	53.2	46.0
18/01/2023 15:59	18/01/2023 15:44	95.2	18/01/2023 15:47	65.1	45.5
18/01/2023 16:14	18/01/2023 15:59	79.7	18/01/2023 16:03	51.8	44.5
18/01/2023 16:29	18/01/2023 16:14	66.1	18/01/2023 16:26	47.0	45.0
18/01/2023 16:44	18/01/2023 16:29	71.5	18/01/2023 16:31	49.4	45.0
18/01/2023 16:59	18/01/2023 16:44	55.0	18/01/2023 16:54	46.7	45.0
18/01/2023 17:14	18/01/2023 16:59	53.3	18/01/2023 17:02	46.0	44.5
18/01/2023 17:29	18/01/2023 17:14	49.2	18/01/2023 17:25	45.3	44.0
18/01/2023 17:44	18/01/2023 17:29	68.4	18/01/2023 17:38	48.1	44.5
18/01/2023 17:59	18/01/2023 17:44	64.8	18/01/2023 17:55	48.3	44.0
18/01/2023 18:14	18/01/2023 17:59	65.0	18/01/2023 18:04	47.0	43.0
18/01/2023 18:29	18/01/2023 18:14	70.1	18/01/2023 18:27	49.5	42.0
18/01/2023 18:44	18/01/2023 18:29	69.0	18/01/2023 18:33	47.8	43.5
18/01/2023 18:59	18/01/2023 18:44	64.9	18/01/2023 18:53	47.7	44.5
18/01/2023 19:14	18/01/2023 18:59	57.7	18/01/2023 19:12	46.2	44.5
18/01/2023 19:29	18/01/2023 19:14	72.2	18/01/2023 19:24	45.4	41.0
18/01/2023 19:44	18/01/2023 19:29	51.3	18/01/2023 19:34	43.6	41.5
18/01/2023 19:59	18/01/2023 19:44	64.9	18/01/2023 19:46	47.6	44.0
18/01/2023 20:14	18/01/2023 19:59	68.0	18/01/2023 20:08	49.7	46.0
18/01/2023 20:29	18/01/2023 20:14	64.1	18/01/2023 20:19	48.7	44.5
18/01/2023 20:44	18/01/2023 20:29	56.2	18/01/2023 20:30	46.8	45.5
18/01/2023 20:59	18/01/2023 20:44	62.4	18/01/2023 20:58	47.5	45.0
18/01/2023 21:14	18/01/2023 20:59	59.5	18/01/2023 21:00	44.9	41.5
18/01/2023 21:29	18/01/2023 21:14	55.9	18/01/2023 21:26	43.7	41.0
18/01/2023 21:44	18/01/2023 21:29	51.9	18/01/2023 21:33	43.1	41.0
18/01/2023 21:59	18/01/2023 21:44	63.2	18/01/2023 21:48	44.7	41.0
18/01/2023 22:14	18/01/2023 21:59	61.0	18/01/2023 22:01	44.8	41.5
18/01/2023 22:29	18/01/2023 22:14	60.3	18/01/2023 22:25	44.1	42.5
18/01/2023 22:44	18/01/2023 22:29	57.7	18/01/2023 22:41	45.3	43.5
19/01/2023 07:00	19/01/2023 06:45	86.1	19/01/2023 06:56	52.4	40.5
19/01/2023 07:15	19/01/2023 07:00	77.8	19/01/2023 07:08	47.0	39.5
19/01/2023 07:30	19/01/2023 07:15	74.4	19/01/2023 07:21	52.5	41.0
19/01/2023 07:45	19/01/2023 07:30	78.0	19/01/2023 07:35	54.3	39.0
19/01/2023 08:00	19/01/2023 07:45	74.1	19/01/2023 07:48	48.8	37.5
19/01/2023 08:15	19/01/2023 08:00	65.8	19/01/2023 08:06	48.6	38.5
19/01/2023 08:30	19/01/2023 08:15	83.5	19/01/2023 08:19	53.3	41.5
19/01/2023 08:45	19/01/2023 08:30	68.6	19/01/2023 08:40	52.0	43.5
19/01/2023 09:00	19/01/2023 08:45	67.0	19/01/2023 08:58	47.3	42.0
19/01/2023 09:15	19/01/2023 09:00	73.7	19/01/2023 09:05	53.7	45.0
19/01/2023 09:30	19/01/2023 09:15	75.6	19/01/2023 09:18	49.4	45.0
19/01/2023 09:45	19/01/2023 09:30	75.1	19/01/2023 09:39	47.9	43.5
19/01/2023 10:00	19/01/2023 09:45	71.3	19/01/2023 09:57	50.0	44.0
LOG AVERAGE		-		52.2	-
MIN		49.2		43.1	37.5
MAX		95.2		65.1	46.0

NIGHT-TIME - ALL DATA

ENDDATETIME	STARTDATETIME	LAFMAX	LAFMAXTIME	LAEQ	LAF90
18/01/2023 23:14	18/01/2023 22:59	52.3	18/01/2023 23:06	44.5	43.0
18/01/2023 23:29	18/01/2023 23:14	68.1	18/01/2023 23:17	46.4	42.5
18/01/2023 23:44	18/01/2023 23:29	62.1	18/01/2023 23:42	45.9	42.5
18/01/2023 23:59	18/01/2023 23:44	60.7	18/01/2023 23:44	44.9	42.0
19/01/2023 00:15	19/01/2023 00:00	59.1	19/01/2023 00:02	43.9	41.5
19/01/2023 00:30	19/01/2023 00:15	48.0	19/01/2023 00:19	43.2	41.5
19/01/2023 00:45	19/01/2023 00:30	55.7	19/01/2023 00:33	42.3	40.0
19/01/2023 01:00	19/01/2023 00:45	53.2	19/01/2023 00:50	40.4	38.5
19/01/2023 01:15	19/01/2023 01:00	53.4	19/01/2023 01:01	41.1	39.0
19/01/2023 01:30	19/01/2023 01:15	58.1	19/01/2023 01:21	41.9	40.0
19/01/2023 01:45	19/01/2023 01:30	49.0	19/01/2023 01:37	41.3	40.0
19/01/2023 02:00	19/01/2023 01:45	63.5	19/01/2023 01:56	44.4	38.0
19/01/2023 02:15	19/01/2023 02:00	54.6	19/01/2023 02:08	39.5	37.5
19/01/2023 02:30	19/01/2023 02:15	48.8	19/01/2023 02:25	39.5	37.5
19/01/2023 02:45	19/01/2023 02:30	43.6	19/01/2023 02:30	39.0	37.5
19/01/2023 03:00	19/01/2023 02:45	55.5	19/01/2023 02:53	39.5	37.5
19/01/2023 03:15	19/01/2023 03:00	50.4	19/01/2023 03:03	40.2	38.0
19/01/2023 03:30	19/01/2023 03:15	50.7	19/01/2023 03:19	40.1	38.0
19/01/2023 03:45	19/01/2023 03:30	50.8	19/01/2023 03:38	39.0	37.5
19/01/2023 04:00	19/01/2023 03:45	48.5	19/01/2023 03:56	39.7	38.5
19/01/2023 04:15	19/01/2023 04:00	55.9	19/01/2023 04:13	40.5	38.5
19/01/2023 04:30	19/01/2023 04:15	49.6	19/01/2023 04:23	41.0	39.5
19/01/2023 04:45	19/01/2023 04:30	48.8	19/01/2023 04:37	41.9	40.5
19/01/2023 05:00	19/01/2023 04:45	45.6	19/01/2023 04:45	40.7	39.5
19/01/2023 05:15	19/01/2023 05:00	48.3	19/01/2023 05:01	42.1	40.0
19/01/2023 05:30	19/01/2023 05:15	50.9	19/01/2023 05:25	42.6	41.0
19/01/2023 05:45	19/01/2023 05:30	50.6	19/01/2023 05:42	43.2	41.0
19/01/2023 06:00	19/01/2023 05:45	50.5	19/01/2023 05:59	42.8	40.5
19/01/2023 06:15	19/01/2023 06:00	47.3	19/01/2023 06:09	41.2	39.5
19/01/2023 06:30	19/01/2023 06:15	52.4	19/01/2023 06:17	42.8	41.5
19/01/2023 06:45	19/01/2023 06:30	46.6	19/01/2023 06:35	41.6	40.5
19/01/2023 07:00	19/01/2023 06:45	86.1	19/01/2023 06:56	52.4	40.5
LOG AVERAGE		-		43.4	-
MIN		43.6		39.0	37.5
MAX		86.1		52.4	43.0

NIGHT-TIME - EXCLUDING 06:45 - 07:00 LIKLEY COMPOUND NOISE

ENDDATETIME	STARTDATETIME	LAFMAX	LAFMAXTIME	LAEQ	LAF90
18/01/2023 23:14	18/01/2023 22:59	52.3	18/01/2023 23:06	44.5	43.0
18/01/2023 23:29	18/01/2023 23:14	68.1	18/01/2023 23:17	46.4	42.5
18/01/2023 23:44	18/01/2023 23:29	62.1	18/01/2023 23:42	45.9	42.5
18/01/2023 23:59	18/01/2023 23:44	60.7	18/01/2023 23:44	44.9	42.0
19/01/2023 00:15	19/01/2023 00:00	59.1	19/01/2023 00:02	43.9	41.5
19/01/2023 00:30	19/01/2023 00:15	48.0	19/01/2023 00:19	43.2	41.5
19/01/2023 00:45	19/01/2023 00:30	55.7	19/01/2023 00:33	42.3	40.0
19/01/2023 01:00	19/01/2023 00:45	53.2	19/01/2023 00:50	40.4	38.5
19/01/2023 01:15	19/01/2023 01:00	53.4	19/01/2023 01:01	41.1	39.0
19/01/2023 01:30	19/01/2023 01:15	58.1	19/01/2023 01:21	41.9	40.0
19/01/2023 01:45	19/01/2023 01:30	49.0	19/01/2023 01:37	41.3	40.0
19/01/2023 02:00	19/01/2023 01:45	63.5	19/01/2023 01:56	44.4	38.0
19/01/2023 02:15	19/01/2023 02:00	54.6	19/01/2023 02:08	39.5	37.5
19/01/2023 02:30	19/01/2023 02:15	48.8	19/01/2023 02:25	39.5	37.5
19/01/2023 02:45	19/01/2023 02:30	43.6	19/01/2023 02:30	39.0	37.5
19/01/2023 03:00	19/01/2023 02:45	55.5	19/01/2023 02:53	39.5	37.5
19/01/2023 03:15	19/01/2023 03:00	50.4	19/01/2023 03:03	40.2	38.0
19/01/2023 03:30	19/01/2023 03:15	50.7	19/01/2023 03:19	40.1	38.0
19/01/2023 03:45	19/01/2023 03:30	50.8	19/01/2023 03:38	39.0	37.5
19/01/2023 04:00	19/01/2023 03:45	48.5	19/01/2023 03:56	39.7	38.5
19/01/2023 04:15	19/01/2023 04:00	55.9	19/01/2023 04:13	40.5	38.5
19/01/2023 04:30	19/01/2023 04:15	49.6	19/01/2023 04:23	41.0	39.5
19/01/2023 04:45	19/01/2023 04:30	48.8	19/01/2023 04:37	41.9	40.5
19/01/2023 05:00	19/01/2023 04:45	45.6	19/01/2023 04:45	40.7	39.5
19/01/2023 05:15	19/01/2023 05:00	48.3	19/01/2023 05:01	42.1	40.0
19/01/2023 05:30	19/01/2023 05:15	50.9	19/01/2023 05:25	42.6	41.0
19/01/2023 05:45	19/01/2023 05:30	50.6	19/01/2023 05:42	43.2	41.0
19/01/2023 06:00	19/01/2023 05:45	50.5	19/01/2023 05:59	42.8	40.5
19/01/2023 06:15	19/01/2023 06:00	47.3	19/01/2023 06:09	41.2	39.5
19/01/2023 06:30	19/01/2023 06:15	52.4	19/01/2023 06:17	42.8	41.5
19/01/2023 06:45	19/01/2023 06:30	46.6	19/01/2023 06:35	41.6	40.5
LOG AVERAGE		-		42.3	-
MIN		43.6		39.0	37.5
MAX		68.1		46.4	43.0

DAYTIME - 15:00-15:30 & 08:30 - 10:00 (MINIMAL CONSTRUCTION NOISE)

ENDDATETIME	STARTDATETIME	LAFMAX	LAFMAXTIME	LAEQ	LAF90
18/01/2023 15:14	18/01/2023 14:59	75.0	18/01/2023 15:06	52.1	45.0
18/01/2023 15:29	18/01/2023 15:14	74.5	18/01/2023 15:19	48.2	44.5
19/01/2023 08:45	19/01/2023 08:30	68.6	19/01/2023 08:40	52.0	43.5
19/01/2023 09:00	19/01/2023 08:45	67.0	19/01/2023 08:58	47.3	42.0
19/01/2023 09:15	19/01/2023 09:00	73.7	19/01/2023 09:05	53.7	45.0
19/01/2023 09:30	19/01/2023 09:15	75.6	19/01/2023 09:18	49.4	45.0
19/01/2023 09:45	19/01/2023 09:30	75.1	19/01/2023 09:39	47.9	43.5
19/01/2023 10:00	19/01/2023 09:45	71.3	19/01/2023 09:57	50.0	44.0
LOG AVERAGE		-		49.4	-
MIN		67.0		47.3	42.0
MAX		75.6		53.7	45.0

NIGHT - EXCLUDING 06:45-07:00

SAMPLETIME	LAFMAX,1min	
19/01/2023 06:56	86.1	Anomalous
19/01/2023 06:54	68.2	Anomalous
18/01/2023 23:17	68.1	
19/01/2023 06:48	67.7	Anomalous
19/01/2023 01:56	63.5	
19/01/2023 06:53	62.7	Anomalous
18/01/2023 23:41	62.1	
18/01/2023 23:44	60.7	
19/01/2023 06:49	60.2	Anomalous
18/01/2023 23:50	59.5	
18/01/2023 23:43	59.2	
19/01/2023 01:54	59.2	
19/01/2023 00:02	59.1	
19/01/2023 06:58	58.9	Anomalous
19/01/2023 01:21	58.1	
19/01/2023 06:59	57.9	Anomalous
19/01/2023 06:57	56.0	Anomalous
19/01/2023 04:13	55.9	
19/01/2023 00:33	55.7	11th loudest result
19/01/2023 02:53	55.5	
19/01/2023 06:51	55.5	
19/01/2023 06:50	55.1	
19/01/2023 02:08	54.6	
19/01/2023 01:19	53.9	
18/01/2023 23:20	53.7	
19/01/2023 06:52	53.5	
19/01/2023 01:01	53.4	
19/01/2023 00:50	53.2	
18/01/2023 23:58	53.0	
19/01/2023 06:55	52.7	
19/01/2023 01:47	52.5	
19/01/2023 00:12	52.4	
19/01/2023 06:17	52.4	
18/01/2023 23:05	52.3	
18/01/2023 23:12	52.2	
19/01/2023 00:14	52.0	
19/01/2023 01:50	52.0	
19/01/2023 01:55	52.0	
19/01/2023 00:43	51.5	
19/01/2023 01:16	51.1	
19/01/2023 05:25	50.9	
19/01/2023 03:38	50.8	
19/01/2023 03:19	50.7	
19/01/2023 05:40	50.6	
19/01/2023 05:42	50.6	
19/01/2023 05:59	50.5	
18/01/2023 23:40	50.4	
19/01/2023 03:03	50.4	

NIGHT - EXCLUDING 06:45-07:00

SAMPLETIME	LAFMAX,1min
18/01/2023 23:15	50.1
19/01/2023 00:11	50.0
18/01/2023 23:57	49.9
19/01/2023 01:14	49.8
19/01/2023 00:40	49.6
19/01/2023 04:23	49.6
18/01/2023 23:21	49.5
19/01/2023 04:14	49.5
18/01/2023 23:49	49.2
19/01/2023 01:57	49.1
19/01/2023 05:56	49.1
18/01/2023 23:06	49.0
18/01/2023 23:07	49.0
19/01/2023 00:35	49.0
19/01/2023 01:37	49.0
19/01/2023 05:35	49.0
19/01/2023 02:25	48.8
19/01/2023 04:37	48.8
19/01/2023 05:41	48.7
19/01/2023 00:07	48.6
18/01/2023 23:16	48.5
19/01/2023 03:56	48.5
19/01/2023 06:26	48.5
18/01/2023 23:11	48.3
19/01/2023 05:01	48.3
19/01/2023 05:44	48.2
18/01/2023 23:32	48.1
19/01/2023 01:23	48.1
18/01/2023 23:00	48.0
18/01/2023 23:08	48.0
18/01/2023 23:52	48.0
19/01/2023 00:06	48.0
19/01/2023 00:19	48.0
19/01/2023 01:00	48.0
19/01/2023 01:49	48.0
19/01/2023 00:29	47.9
19/01/2023 01:06	47.9
19/01/2023 01:31	47.9
19/01/2023 05:06	47.9
19/01/2023 05:26	47.9
19/01/2023 05:58	47.9
18/01/2023 23:10	47.8
18/01/2023 23:37	47.8
18/01/2023 23:45	47.8
19/01/2023 05:19	47.8
19/01/2023 06:15	47.8
19/01/2023 03:21	47.7
19/01/2023 06:16	47.7

NIGHT - EXCLUDING 06:45-07:00

SAMPLETIME	LAFMAX,1min
18/01/2023 23:36	47.6
19/01/2023 04:03	47.6
19/01/2023 05:54	47.6
19/01/2023 00:18	47.5
19/01/2023 05:43	47.5
18/01/2023 23:01	47.4
18/01/2023 23:19	47.4
18/01/2023 23:46	47.4
18/01/2023 23:53	47.4
19/01/2023 00:44	47.4
19/01/2023 04:22	47.4
19/01/2023 05:45	47.4
18/01/2023 23:31	47.3
19/01/2023 01:17	47.3
19/01/2023 06:09	47.3
18/01/2023 23:18	47.2
19/01/2023 00:17	47.2
19/01/2023 00:41	47.2
19/01/2023 05:38	47.2
19/01/2023 05:51	47.2
18/01/2023 23:13	47.1
18/01/2023 23:14	47.1
18/01/2023 23:38	47.1
19/01/2023 00:08	47.1
19/01/2023 01:24	47.1
19/01/2023 04:05	47.1
19/01/2023 05:05	47.1
19/01/2023 02:48	47.0
19/01/2023 05:39	47.0
18/01/2023 23:54	46.9
19/01/2023 00:03	46.9
19/01/2023 00:09	46.9
19/01/2023 05:24	46.9
19/01/2023 05:36	46.9
19/01/2023 06:27	46.9
19/01/2023 00:16	46.8
19/01/2023 05:12	46.8
19/01/2023 05:18	46.8
18/01/2023 23:56	46.7
19/01/2023 00:01	46.7
19/01/2023 00:20	46.7
19/01/2023 02:07	46.7
19/01/2023 04:18	46.7
18/01/2023 23:09	46.6
18/01/2023 23:34	46.6
19/01/2023 02:22	46.6
19/01/2023 03:11	46.6
19/01/2023 05:46	46.6

NIGHT - EXCLUDING 06:45-07:00

SAMPLETIME	LAFMAX,1min
19/01/2023 05:50	46.6
19/01/2023 06:35	46.6
18/01/2023 23:25	46.5
19/01/2023 00:04	46.5
19/01/2023 00:42	46.5
19/01/2023 03:53	46.5
19/01/2023 04:31	46.5
19/01/2023 05:23	46.5
19/01/2023 05:47	46.5
19/01/2023 00:34	46.4
19/01/2023 00:59	46.4
19/01/2023 01:04	46.4
19/01/2023 03:26	46.4
19/01/2023 05:34	46.4
19/01/2023 05:37	46.4
18/01/2023 23:28	46.3
18/01/2023 23:33	46.3
19/01/2023 00:00	46.3
19/01/2023 00:22	46.3
19/01/2023 02:49	46.3
18/01/2023 23:30	46.2
19/01/2023 00:32	46.2
19/01/2023 01:40	46.2
19/01/2023 01:59	46.2
19/01/2023 03:02	46.2
19/01/2023 03:16	46.2
19/01/2023 05:20	46.2
19/01/2023 06:04	46.2
18/01/2023 23:02	46.1
19/01/2023 01:10	46.1
19/01/2023 01:20	46.1
19/01/2023 01:28	46.1
19/01/2023 03:01	46.1
19/01/2023 05:11	46.1
19/01/2023 05:33	46.1
18/01/2023 23:04	46.0
18/01/2023 23:51	46.0
19/01/2023 01:52	46.0
19/01/2023 05:22	46.0
19/01/2023 00:10	45.9
19/01/2023 01:03	45.9
19/01/2023 01:48	45.9
19/01/2023 02:03	45.9
19/01/2023 05:57	45.9
19/01/2023 06:11	45.9
19/01/2023 06:24	45.9
18/01/2023 23:03	45.8
19/01/2023 00:15	45.8

NIGHT - EXCLUDING 06:45-07:00

SAMPLETIME	LAFMAX,1min
19/01/2023 05:17	45.8
19/01/2023 06:06	45.8
18/01/2023 23:22	45.7
18/01/2023 23:29	45.7
19/01/2023 00:28	45.7
19/01/2023 00:31	45.7
19/01/2023 00:38	45.7
19/01/2023 01:11	45.7
19/01/2023 02:28	45.7
19/01/2023 04:36	45.7
19/01/2023 06:20	45.7
19/01/2023 06:23	45.7
19/01/2023 06:25	45.7
18/01/2023 23:48	45.6
19/01/2023 00:23	45.6
19/01/2023 00:46	45.6
19/01/2023 00:51	45.6
19/01/2023 01:32	45.6
19/01/2023 01:35	45.6
19/01/2023 01:43	45.6
19/01/2023 04:45	45.6
19/01/2023 05:55	45.6
19/01/2023 06:10	45.6
19/01/2023 06:30	45.6
18/01/2023 23:59	45.5
19/01/2023 00:05	45.5
19/01/2023 00:26	45.5
19/01/2023 00:48	45.5
19/01/2023 02:06	45.5
19/01/2023 03:08	45.5
19/01/2023 06:07	45.5
19/01/2023 00:30	45.4
19/01/2023 00:47	45.4
19/01/2023 00:56	45.4
19/01/2023 02:04	45.4
19/01/2023 05:16	45.4
19/01/2023 05:52	45.4
18/01/2023 23:26	45.3
18/01/2023 23:27	45.3
19/01/2023 00:57	45.3
19/01/2023 02:05	45.3
19/01/2023 05:08	45.3
19/01/2023 05:21	45.3
19/01/2023 01:02	45.2
19/01/2023 01:15	45.2
19/01/2023 01:45	45.2
19/01/2023 04:21	45.2
19/01/2023 05:14	45.2

NIGHT - EXCLUDING 06:45-07:00

SAMPLETIME	LAFMAX,1min
19/01/2023 05:53	45.2
19/01/2023 06:18	45.2
19/01/2023 06:19	45.2
19/01/2023 06:21	45.2
19/01/2023 00:13	45.1
19/01/2023 01:36	45.1
19/01/2023 05:28	45.1
19/01/2023 06:28	45.1
18/01/2023 23:24	45.0
18/01/2023 23:35	45.0
18/01/2023 23:39	45.0
19/01/2023 01:39	45.0
19/01/2023 02:14	45.0
19/01/2023 06:01	45.0
19/01/2023 06:03	45.0
19/01/2023 06:43	45.0
19/01/2023 04:42	44.9
19/01/2023 05:07	44.9
19/01/2023 06:29	44.9
19/01/2023 06:31	44.9
19/01/2023 06:33	44.9
18/01/2023 23:23	44.8
19/01/2023 01:25	44.8
19/01/2023 02:51	44.8
19/01/2023 03:14	44.8
19/01/2023 05:30	44.8
18/01/2023 23:42	44.7
19/01/2023 00:27	44.7
19/01/2023 01:26	44.7
19/01/2023 02:55	44.7
19/01/2023 04:11	44.7
19/01/2023 04:32	44.7
19/01/2023 04:38	44.7
19/01/2023 04:46	44.7
19/01/2023 05:10	44.7
19/01/2023 05:13	44.7
19/01/2023 05:49	44.7
19/01/2023 06:13	44.7
19/01/2023 00:21	44.6
19/01/2023 00:54	44.6
19/01/2023 01:05	44.6
19/01/2023 01:22	44.6
19/01/2023 04:15	44.6
19/01/2023 04:27	44.6
19/01/2023 04:39	44.6
19/01/2023 04:44	44.6
19/01/2023 04:41	44.5
19/01/2023 05:15	44.5

NIGHT - EXCLUDING 06:45-07:00

SAMPLETIME	LAFMAX,1min
19/01/2023 00:58	44.4
19/01/2023 01:29	44.4
19/01/2023 01:44	44.4
19/01/2023 02:21	44.4
19/01/2023 04:33	44.4
19/01/2023 06:08	44.4
19/01/2023 00:45	44.3
19/01/2023 00:52	44.3
19/01/2023 02:00	44.3
19/01/2023 02:09	44.3
19/01/2023 04:02	44.3
19/01/2023 04:35	44.3
19/01/2023 05:09	44.3
19/01/2023 06:02	44.3
19/01/2023 00:36	44.2
19/01/2023 05:00	44.2
19/01/2023 06:00	44.2
19/01/2023 06:14	44.2
18/01/2023 23:55	44.1
19/01/2023 00:25	44.1
19/01/2023 01:12	44.1
19/01/2023 01:34	44.1
19/01/2023 03:45	44.1
19/01/2023 03:57	44.1
19/01/2023 04:10	44.1
19/01/2023 04:34	44.1
19/01/2023 05:29	44.1
18/01/2023 23:47	44.0
19/01/2023 02:17	44.0
19/01/2023 00:24	43.9
19/01/2023 01:41	43.9
19/01/2023 02:02	43.9
19/01/2023 03:15	43.9
19/01/2023 03:23	43.9
19/01/2023 03:25	43.9
19/01/2023 03:54	43.9
19/01/2023 04:30	43.9
19/01/2023 04:40	43.9
19/01/2023 06:40	43.9
19/01/2023 03:17	43.8
19/01/2023 04:29	43.8
19/01/2023 04:47	43.8
19/01/2023 05:02	43.8
19/01/2023 05:27	43.8
19/01/2023 05:31	43.8
19/01/2023 05:32	43.8
19/01/2023 02:24	43.7
19/01/2023 02:58	43.7

NIGHT - EXCLUDING 06:45-07:00

SAMPLETIME	LAFMAX,1min
19/01/2023 03:22	43.7
19/01/2023 04:16	43.7
19/01/2023 04:26	43.7
19/01/2023 04:58	43.7
19/01/2023 05:48	43.7
19/01/2023 06:22	43.7
19/01/2023 06:44	43.7
19/01/2023 00:37	43.6
19/01/2023 00:49	43.6
19/01/2023 01:13	43.6
19/01/2023 02:16	43.6
19/01/2023 02:30	43.6
19/01/2023 03:18	43.6
19/01/2023 04:20	43.6
19/01/2023 06:47	43.6
19/01/2023 01:42	43.5
19/01/2023 03:00	43.5
19/01/2023 04:07	43.5
19/01/2023 04:25	43.5
19/01/2023 06:05	43.5
19/01/2023 06:32	43.5
19/01/2023 06:41	43.5
19/01/2023 01:07	43.4
19/01/2023 01:18	43.4
19/01/2023 01:53	43.4
19/01/2023 03:55	43.4
19/01/2023 04:24	43.4
19/01/2023 04:51	43.4
19/01/2023 06:12	43.4
19/01/2023 01:46	43.3
19/01/2023 02:29	43.3
19/01/2023 03:05	43.3
19/01/2023 03:13	43.3
19/01/2023 03:42	43.3
19/01/2023 04:00	43.3
19/01/2023 04:28	43.3
19/01/2023 04:49	43.3
19/01/2023 06:36	43.3
19/01/2023 01:08	43.2
19/01/2023 04:06	43.2
19/01/2023 05:04	43.2
19/01/2023 00:39	43.1
19/01/2023 01:30	43.1
19/01/2023 02:54	43.1
19/01/2023 03:12	43.1
19/01/2023 03:27	43.1
19/01/2023 03:28	43.1
19/01/2023 03:43	43.1

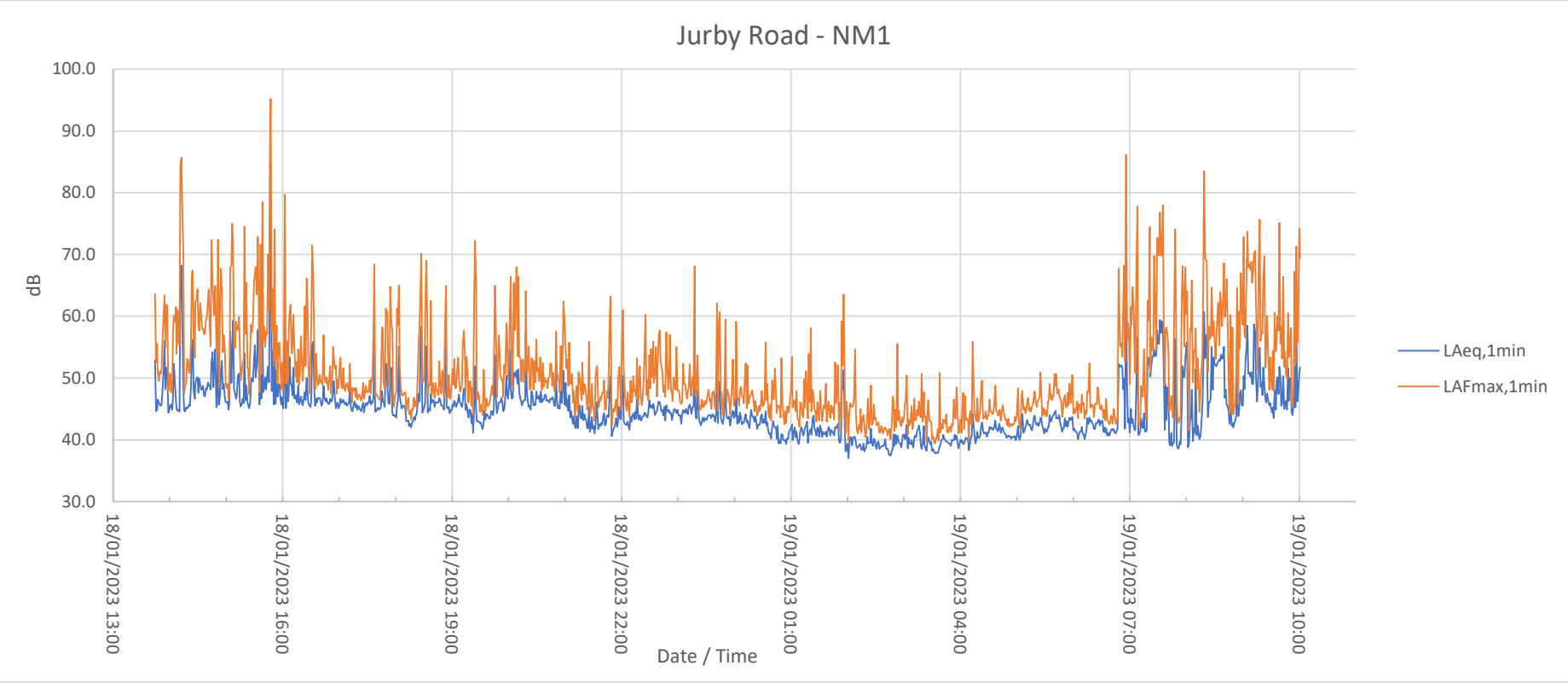
NIGHT - EXCLUDING 06:45-07:00

SAMPLETIME	LAFMAX,1min
19/01/2023 04:08	43.1
19/01/2023 04:43	43.1
19/01/2023 04:48	43.1
19/01/2023 06:34	43.1
19/01/2023 01:33	43.0
19/01/2023 04:17	43.0
19/01/2023 04:59	43.0
19/01/2023 01:27	42.9
19/01/2023 01:38	42.9
19/01/2023 03:20	42.9
19/01/2023 04:19	42.9
19/01/2023 06:37	42.9
19/01/2023 02:33	42.8
19/01/2023 02:59	42.8
19/01/2023 03:07	42.8
19/01/2023 03:29	42.8
19/01/2023 00:55	42.7
19/01/2023 06:39	42.7
19/01/2023 06:45	42.7
19/01/2023 02:27	42.6
19/01/2023 02:32	42.6
19/01/2023 02:56	42.6
19/01/2023 03:40	42.6
19/01/2023 03:44	42.6
19/01/2023 03:51	42.6
19/01/2023 04:53	42.6
19/01/2023 04:56	42.6
19/01/2023 04:57	42.6
19/01/2023 06:42	42.6
19/01/2023 06:46	42.6
19/01/2023 00:53	42.5
19/01/2023 04:12	42.5
19/01/2023 04:54	42.5
19/01/2023 06:38	42.5
19/01/2023 02:26	42.4
19/01/2023 02:12	42.3
19/01/2023 02:18	42.3
19/01/2023 02:31	42.3
19/01/2023 03:06	42.3
19/01/2023 03:52	42.3
19/01/2023 04:50	42.3
19/01/2023 02:36	42.2
19/01/2023 02:47	42.2
19/01/2023 02:57	42.2
19/01/2023 04:55	42.2
19/01/2023 01:09	42.1
19/01/2023 03:10	42.1
19/01/2023 03:48	42.1

NIGHT - EXCLUDING 06:45-07:00

SAMPLETIME	LAFMAX,1min
19/01/2023 03:49	42.1
19/01/2023 04:52	42.1
19/01/2023 02:40	42.0
19/01/2023 02:52	42.0
19/01/2023 05:03	41.9
19/01/2023 02:10	41.8
19/01/2023 02:23	41.8
19/01/2023 03:41	41.8
19/01/2023 02:13	41.7
19/01/2023 02:39	41.7
19/01/2023 02:45	41.7
19/01/2023 03:09	41.7
19/01/2023 03:36	41.7
19/01/2023 04:04	41.7
19/01/2023 02:42	41.6
19/01/2023 02:44	41.6
19/01/2023 02:41	41.5
19/01/2023 01:51	41.4
19/01/2023 02:50	41.4
19/01/2023 02:37	41.3
19/01/2023 03:46	41.3
19/01/2023 03:50	41.3
19/01/2023 03:59	41.3
19/01/2023 03:39	41.2
19/01/2023 03:47	41.2
19/01/2023 04:01	41.2
19/01/2023 02:15	41.1
19/01/2023 02:20	41.1
19/01/2023 02:34	41.1
19/01/2023 02:35	41.1
19/01/2023 01:58	41.0
19/01/2023 02:11	41.0
19/01/2023 02:38	41.0
19/01/2023 03:58	41.0
19/01/2023 03:04	40.8
19/01/2023 02:43	40.7
19/01/2023 03:31	40.6
19/01/2023 02:19	40.4
19/01/2023 03:34	40.3
19/01/2023 03:35	40.2
19/01/2023 02:46	40.1
19/01/2023 03:30	40.1
19/01/2023 04:09	40.0
19/01/2023 02:01	39.8
19/01/2023 03:24	39.8
19/01/2023 03:37	39.8
19/01/2023 03:32	39.7
19/01/2023 03:33	39.4

APPENDIX 4 ▪ Sound Level Graph



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