

Land at Meadow Road
Reading
RG1 8GE

Environmental Noise Impact Assessment

Date: 01 July 2025

Client:

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For Information

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1.0 INTRODUCTION

- 1.1 The proposed development entails the demolition of existing buildings and develop flexible employment floorspace totalling circa 4,300m² gross external area (GEA) of modern, flexible Class (i) office, (ii) research and development, (iii) industrial process and B8 Storage and Distribution uses, offering employment floorspace in a range of sizes that meets modern market requirements.
- 1.2 Quantum Acoustics has been commissioned to prepare this Noise Impact Assessment to accompany a planning application for the development at Meadow Road, Reading, RG1 8LB.

2.0 SITE DESCRIPTION

- 2.1 The proposed development is located within the jurisdiction of Reading Borough Council (RBC).
- 2.2 The site is located on the eastern edge of the Richfield Avenue Employment Area, as designated by RBC. It forms part of a broader industrial and employment zone within Reading town centre.
- 2.3 The site is bordered by sensitive residential uses to the north and east, with recently developed residential properties, including four-storey flats, facing the site to the south along Meadow Road and at the corner of Meadow Road and Milford Road. To the east, existing industrial and employment uses are located adjacent to the site and will remain operational throughout the site's development.



- 2.4 The site contains two existing buildings: both existing buildings are occupied with talbot house and the surrounding area of hardstanding currently used as a bus depot while the other building is divided into two units for commercial use. Both structures are outdated and fall short of the standards expected in the modern employment market, including current EPC ratings and sustainability features sought by prospective occupiers.

3.0 PROPOSED DEVELOPMENT

3.1 The proposed site covers approximately 0.89 hectares and currently accommodates two existing employment buildings with footprints of around 2,100m² and 1,000m² respectively. The development proposes the demolition of these buildings and the construction of four new buildings comprising 11 units of varying sizes, designed to accommodate a range of modern employment uses including B2 and E(g) office space, research and development, industrial processes, and B8 storage and distribution, in line with current market demands.

3.2 The layout is shown below:



4.0 PLANNING CONTEXT AND DESIGN GUIDANCE

4.1 The following Planning Policy Context and design guidance is relevant to the development:

National Planning Policy

- Noise Policy Statement for England (2010);
- National Planning Policy Framework (2024); and
- Planning Practice Guidance – Noise (2019).

Local Planning Policy

- Reading Borough Local Plan: EN16: Pollution and Water Resources (Adopted November 2019)

Design Guidance

- BS 4142: 2014: A1+: 2019 “Methods for rating and assessing commercial and industrial sound”.

4.2 More detailed commentary of the legislation, planning policy and guidance relevant to this report is presented in Appendix B of this report. Set out below is a brief explanation of key national and local planning policies, which provide the key policy framework for determining whether the development delivers the Government’s overarching policy requirement for sustainable development.

National Planning Policy Framework

4.3 The overarching aim of the planning regime is to promote sustainable development, whilst ensuring the compatibility of land uses. With regard to noise, the National Planning Policy Framework sets out two primary policies which seek to (a) ensure that new noise sensitive development is adequately protected from noise & that the impact of noise from new noise generating land uses on existing residential uses is minimised and (b) that existing commercial/industrial uses and community facilities do not have unreasonable restrictions imposed on them by new noise sensitive development:

Paragraph 198

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- a) *mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- b) *identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and*
- c) *limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.*

Paragraph 200:

“Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.”

Noise Policy Statement for England

- 4.4 With regard to ‘adverse’ impacts and ‘significant adverse’ impacts, the NPPF directs the reader to the advice contained in DEFRA’s *“Noise Policy Statement for England”* (NPSE). This Policy Statement introduces the concept of a *“Significant Observed Adverse Effect Level”* (SOAEL), *“Lowest Observed Adverse Effect Level”* (LOAEL) and *“No Observed Effect Level”* (NOEL). These are concepts aligned with toxicology outcomes derived from guidance given by the World Health Organisation.

- **NOEL – No Observed Effect Level**

This is the level below which no effect can be detected and below which there is no detectable effect on health and quality of life due to noise.

- **LOAEL – Lowest Observable Adverse Effect Level**

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

- **SOAEL – Significant Observed Adverse Effect Level**

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

Planning Practice Guidance

4.5 The application of national planning is amplified in the government's "Planning Practice Guidance" (PPG). This seeks to help clarify understanding the perception of noise effects, outcomes and actions that should be taken to align decision making with the NPPF. In line with the NPPF concept of basing decision making on the identification of "significant" or "other" impacts on health and quality of life, the PPG aligns its guidance with the NPSE.

4.6 The table below summarises this guidance.

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level (NOEL)			
Not present	No effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level (NOAEL)			
Present and not intrusive	Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level (LOAEL)			
Present and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, 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.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level (SOAEL)			
Present and disruptive	The noise causes a material change in behaviour and/or attitude, 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 and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable hard, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

Local Planning Policy

- 4.7 Reading Borough Council's document "Reading Borough Local Plan" (Adopted November 2019) states the following regarding noise.

"EN16: POLLUTION AND WATER RESOURCES

Development will only be permitted where it would not be damaging to the environment and sensitive receptors through land, noise or light pollution; where it would result in no deterioration in, or ideally enhance, ground and surface water quality; and where adequate water resources, sewerage and wastewater treatment infrastructure will be in place to support the proposed development prior to occupation.

Proposals for development that are sensitive to the effects of noise or light pollution will only be permitted in areas where they will not be subject to high levels of such pollution, unless adequate mitigation measures are provided to minimise the impact of such pollution.

..."

"EN17: NOISE GENERATING EQUIPMENT

Where noise generating equipment is proposed, the noise source specific level (plant noise level) should be at least 10dBA below the existing background level as measured at the nearest noise sensitive receptor."

This policy prevents harmful development, mitigates the impact of potentially polluting developments and ensures that developments and receptors that are sensitive to pollution are separated from sources of such pollution.

As part of the pre-application process, comments have been received from Rebecca Moon, Environmental Health Officer at Reading Borough Council, on 12 November 2024. In terms of noise, Ms. Moon is concerned about noise from mechanical plant and noise generated from commercial activities and states that in both instances the noise should be assessed in accordance with BS4142:2014+A1:2019 and the criteria will be:

- The specific noise level should not exceed a level that is 10 dBA below the existing background noise level.
- The rating level should not exceed the background noise level.

In terms of commercial activity noise, it is noted that the above criteria are considered a starting point and not fixed.

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

- 4.8 BS 4142 provides a rating and assessment methodology for assessing the potential adverse impact of commercial and commercial noise sources on neighbouring dwellings.
- 4.9 The assessment procedure initially compares the ‘Rating Level’ of the source with the ‘Background Noise Level’ when the source is not present. The ‘Rating Level’ (L_{Ar}) referred to is the specific noise level of the noise source under investigation (in terms of the L_{Aeq} noise index), to which corrections are applied if the noise has certain audible characteristics. The table below summarises the corrections to be applied based on a subjective assessment of noise source characteristics.

Character Correction				
Feature / Perception	Tonality	Impulsivity	Intermittency	Other acoustic characteristics
Just Perceptible	+2dB	+3dB	When the specific sound has identifiable On/Off conditions that are readily distinctive. +3dB	+3dB
Clearly Perceptible	+4dB	+6dB		
Highly Perceptible	+6dB	+9dB		

- 4.10 The ‘Background Noise Level’ (L_{A90}) represents the “typical” noise level that is exceeded for 90% of the stated measurement period. For assessment purposes, the background noise level needs to be determined without the noise source under investigation operating.
- 4.11 The time of operation needs to be considered. During the day (07.00 to 19.00 hours) and evening (19.00 to 23.00 hours) a one-hour measurement period is considered appropriate. During the night (normally taken to be 23.00 – 07.00 hours) a 15-minute time period is normally used.
- 4.12 The following guidance is then offered based on the outcome of this initial assessment:
- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
 - A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
 - The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact.

Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

4.13 Aligning the above guidance with national planning policy objectives:

- An assessment level 10 dB(A) above the background level might be considered to be a “Significant Observed Adverse Effect Level” (SOAEL).
- An assessment level that does not exceed the background level might be considered to be a “Lowest Observed Adverse Effect Level” (LOAEL).

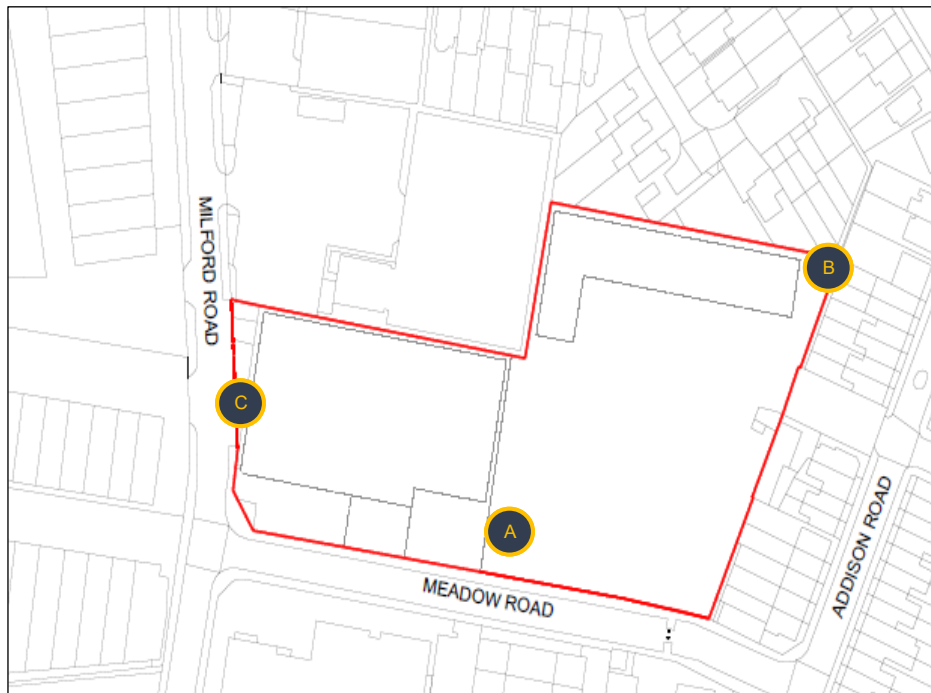
4.14 Notwithstanding the above, BS 4142 importantly notes that any initial estimate of a noise impact should be modified to account for its “context”. Such considerations include:

- The absolute level of the sound - the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low. Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.
- Where residual sound levels are very high, the residual sound might itself result in adverse impacts or significant adverse impacts, and the margin by which the rating level exceeds the background might simply be an indication of the extent to which the specific sound source is likely to make those impacts worse.
- The character and level of the residual sound compared to the character and level of the specific sound.
- The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions.

5.0 EXISTING BASELINE NOISE LEVELS

General

- 5.1 Noise monitoring at the site was undertaken over a 2-day period from 23 to 24 April 2025.
- 5.2 Noise levels were monitored at three locations, shown in the figure below.



- 5.3 The location of the measurement locations is described in the table below.

Location	Description
A	Close to the southern boundary approximately 15m from Meadow Road. The microphone was located at a height of approximately 1.5m above local ground level by means of a standard photographic tripod in free – field conditions. The position was chosen to be representative of the existing residential receptors along Meadow Road.
B	In the north-eastern corner of the site. The microphone was located at a height of approximately 2.2m above local ground level by means of a beam pole attached to the rear boundary fence, with the microphone located approximately 0.5m above the fence, in free – field conditions. The position was chosen to be representative of the existing residential receptors along Addison Road to the east and Denbeigh Place to the north.
C	On the western boundary approximately 5m from Milford Road. The microphone was located at a height of approximately 1.5m above local ground level by means of a standard photographic tripod. The position was chosen to be representative of the existing office and industrial receptors along Milford Road.

Instrumentation

- 5.4 Details of the equipment used for the survey are summarised in the table below.

Measurement Instrumentation			
Position	Manufacturer	Type	Serial Number
A	Svantek	971A	147600
B	Svantek	971A	127617
C	Svantek	971A	124674

- 5.5 All instruments hold current laboratory calibration certificates (available on request).
- 5.6 A field calibration check on all equipment was made at the start of the survey and a further calibration check made on completion. No significant drift in the calibration of any instrument was observed.

Procedure

- 5.7 The noise monitoring equipment was configured to record the L_{A90} , L_{Aeq} , and $L_{Amax,fast}$ sound pressure levels over consecutive 15-minute periods. The equipment was also configured to undertake higher resolution logging to assist with the identification of noise events.

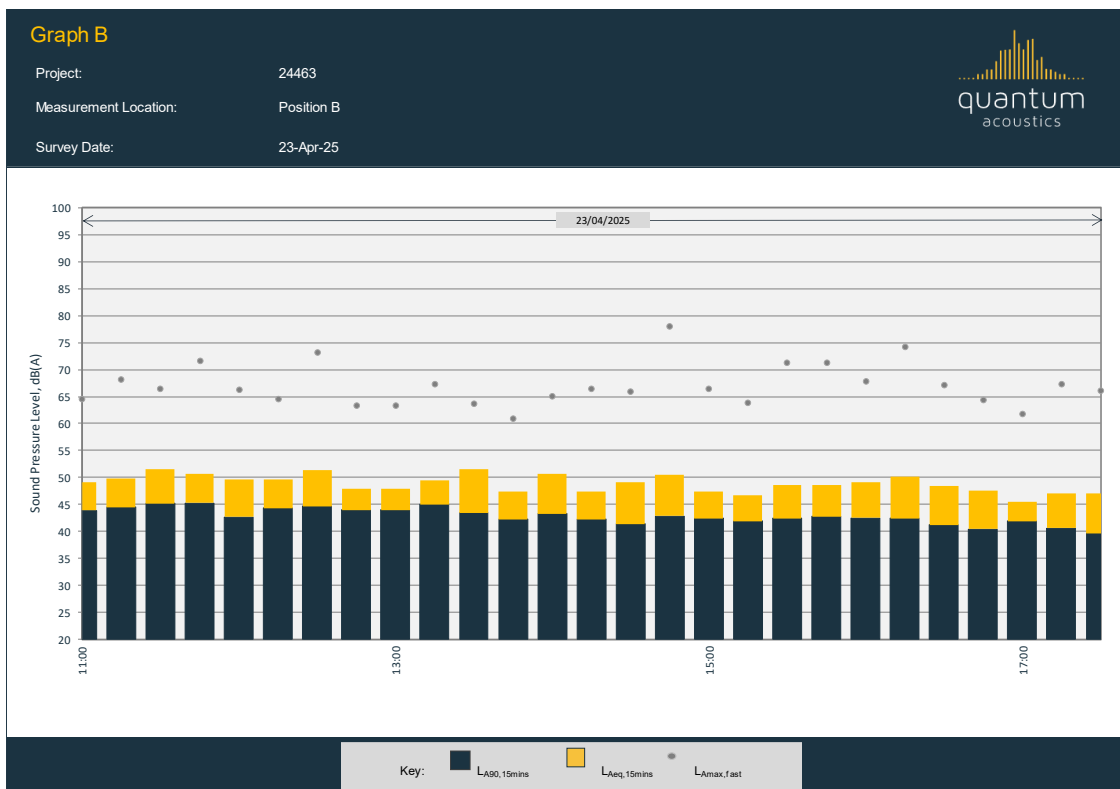
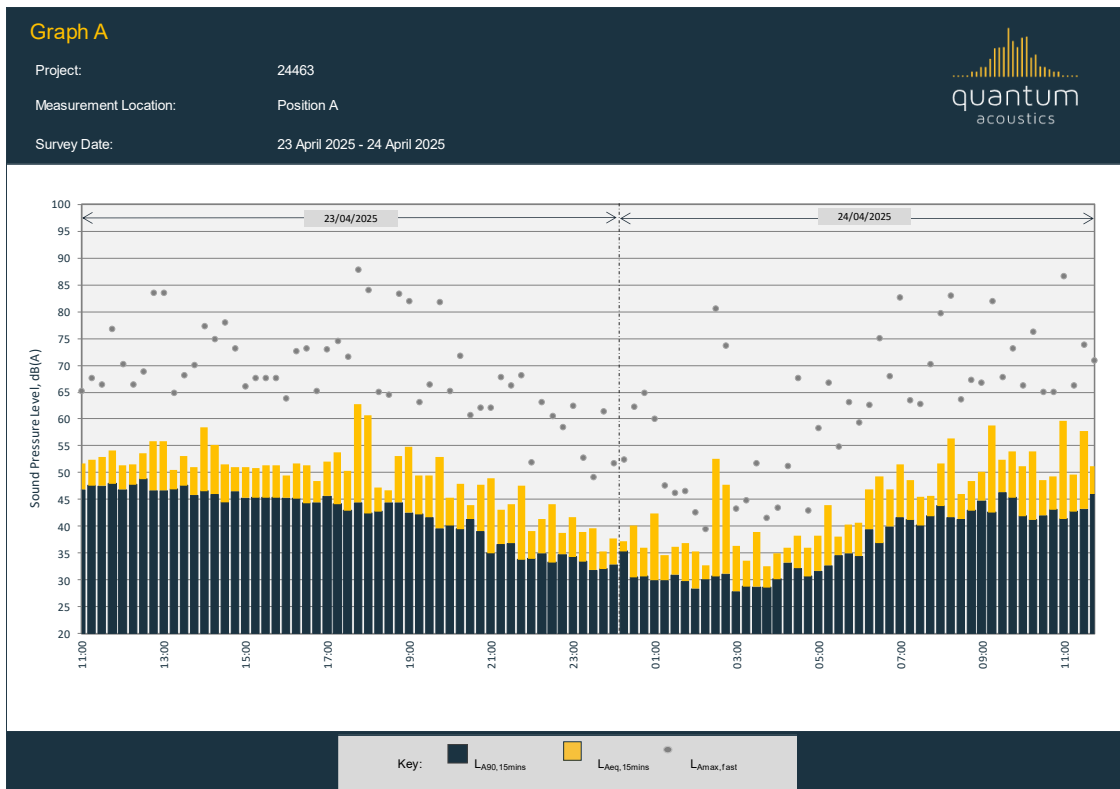
Weather

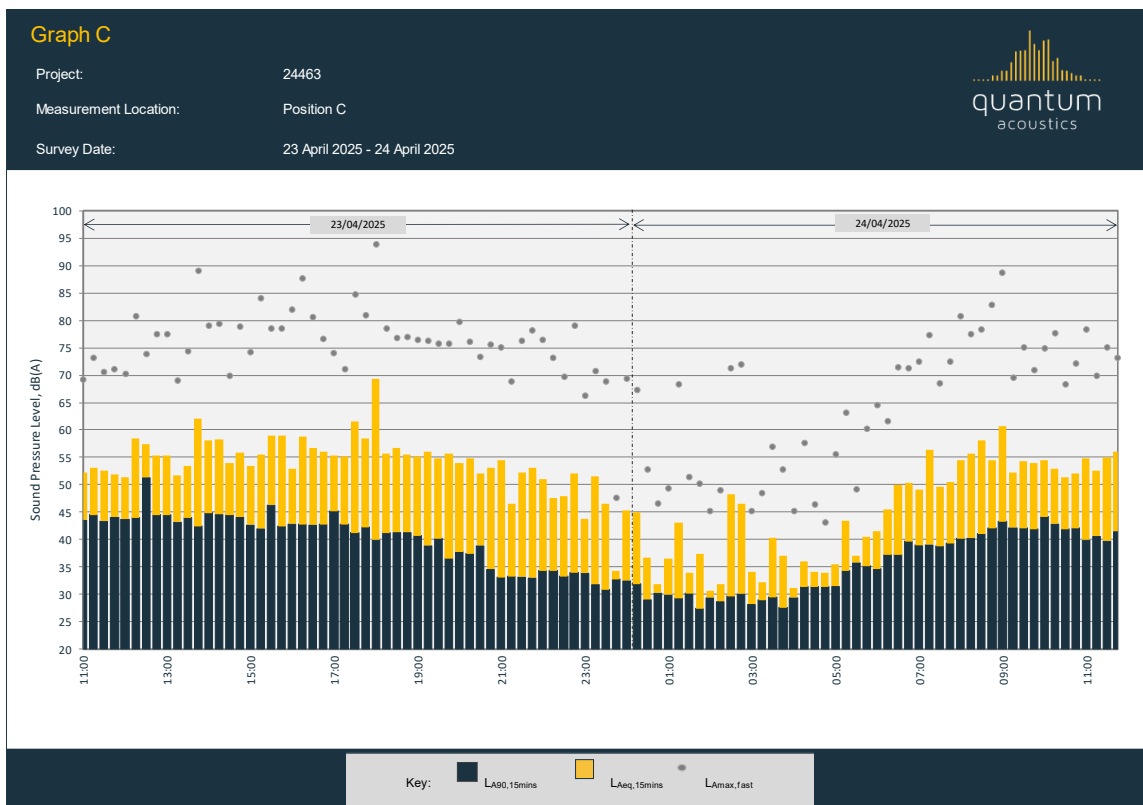
- 5.8 Whilst weather conditions during the survey were not actively measured, weather conditions at the time of equipment installation and removal were fine and dry, with light winds. Publicly available historic weather data for the survey periods indicates the following typical conditions:

23 April 2025	24 April 2025
Temperature: 8 to 14°C Pressure: 1009 – 1017 hPa Humidity: 69% - 92% Average wind speed: 10 km/h Average wind direction: E Precipitation: 0mm	Temperature: 8 to 14°C Pressure: 1020 – 1023 hPa Humidity range: 66% - 92% Average wind speed: 10 km/h Average wind direction: NE Precipitation: 0mm

Results

5.9 The results of the noise monitoring are summarised on the graphs presented below.





- 5.10 Position B has only measured data into the early evening period due to data storage constraints. It is considered that sufficient data has been collected to be able to infer evening and night-time period noise levels from other measurement positions.
- 5.11 The measurements data has been processed to calculate the daytime $L_{Aeq,12\text{ hour}}$, evening $L_{Aeq,4\text{ hour}}$ and night-time $L_{Aeq,8\text{ hour}}$ noise levels. These values are presented in the table below.

Position A	Daytime $L_{Aeq,12\text{ hour}}$ (dB) (07:00 – 19:00)	Evening $L_{Aeq,4\text{ hour}}$ (dB) (19:00 – 23:00)	Night-time $L_{Aeq,8\text{ hour}}$ (dB) (23:00 – 07:00)
23-24/04/2025	54	47	44
Position B	Daytime $L_{Aeq,12\text{ hour}}$ (dB) (07:00 – 19:00)	Evening $L_{Aeq,4\text{ hour}}$ (dB) (19:00 – 23:00)	Night-time $L_{Aeq,8\text{ hour}}$ (dB) (23:00 – 07:00)
23-24/04/2025	49	42 ¹	39 ¹
Position C	Daytime $L_{Aeq,12\text{ hour}}$ (dB) (07:00 – 19:00)	Evening $L_{Aeq,4\text{ hour}}$ (dB) (19:00 – 23:00)	Night-time $L_{Aeq,8\text{ hour}}$ (dB) (23:00 – 07:00)
23-24/04/2025	59	53	44

Note: (1) estimated based on the difference between daytime L_{Aeq} noise levels between Position A and Position B. This assumes the primary noise source was road traffic noise on Meadow Road, which accords with subjective impressions on site when the road was in use.

- 5.12 BS 4142 requires assessments to be based on background noise levels “typical” of the proposed operational hours of the industrial/commercial use for impacts on residential receptors.
- 5.13 The closest measurement to the nearby receptors are residential dwellings located on Meadow Road by Position A and Addison Road and Denbeigh Place by Position B. An analysis of the $L_{A90,15min}$ sound levels for the daytime, evening, and night periods has been undertaken for this position.
- 5.14 Below presents a summary of the measured data at Positions A and B respectively.

Position A Period	Mean	Median	Mode
Daytime $L_{A90,12hour}$ (dB) (07:00 – 19:00)	45	45	45
Evening $L_{A90,4hour}$ (dB) (19:00 – 23:00)	37	37	40
Night-time $L_{A90,8hour}$ (dB) (23:00 – 07:00)	32	32	31

Position B Period	Mean	Median	Mode
Daytime $L_{A90,12hour}$ (dB) (07:00 – 19:00)	43	43	42
Evening $L_{A90,4hour}$ (dB) (19:00 – 23:00)	35 ¹	35 ¹	37 ¹
Night-time $L_{A90,8hour}$ (dB) (23:00 – 07:00)	30 ¹	30 ¹	28 ¹

Note: (1) estimated based on the difference between daytime L_{A90} noise levels between Position A and Position B. This assumes the primary noise source was road traffic noise on Meadow Road, which accords with subjective impressions on site when the road was in use.

Discussion

- 5.15 The ambient noise climate was dominated by local and distant road traffic noise. At Positions A and B, noise from a distant school playground was audible as was occasional on-site noise from the existing site use comprising vehicle movements and the cleaning of cars.

6.0 PLANT NOISE EMISSION CRITERIA

- 6.1 To comply with the aforementioned guidance including the Local Authority's requirements, and on the basis of the noise survey results, the following environmental plant noise emission criteria are proposed to be achieved at 1 metre from the noise sensitive residential window:

Receptor	Plant Noise Emission Limits (Specific Noise Level) L_{Aeq} dB re 2×10^{-5} Pa		
	Daytime (07:00 – 19:00)	Evening (19:00 – 23:00)	Night-time (23:00 – 07:00)
Meadow Road	35	27	21
Addison Road	33	25	20
Denbeigh Close	33	25	20
Receptor	Plant Noise Emission Limits (Rating Level) L_{Ar} dB re 2×10^{-5} Pa		
	Daytime (07:00 – 19:00)	Evening (19:00 – 23:00)	Night-time (23:00 – 07:00)
Meadow Road	45	37	31
Addison Road	43	35	30
Denbeigh Close	43	35	30

- 6.2 We also recommend that noise levels at 1m from openable windows of nearby offices do not exceed 55 dB L_{Aeq} .
- 6.3 The above criteria apply to cumulative noise level of all plant operating simultaneously, under normal operating conditions.
- 6.4 Relaxations of the above criteria may be acceptable for emergency plant, however they must be considered on a case-by-case basis.

7.0 INHERENT NOISE MITIGATION MEASURES

Reversing Bepers

- 7.1 Noise disturbance from reversing alarms, especially at night, is a common issue for residential areas near warehouses or busy loading zones. In the UK, the most common type of reversing alarm on modern vehicles, especially for commercial and industrial fleets, is now the broadband sound alarm (also known as a white noise alarm). Traditional tonal alarms (the high-pitched "beep-beep" sound) were widely used in the past, but many companies and vehicle operators have shifted to broadband alarms because they are safer and quieter, especially in noise-sensitive environments. Many broadband alarms now include self-adjusting volume control that matches the sound level to the surrounding environment. This is especially beneficial for night operations when ambient noise is low, as the alarm will automatically reduce in volume. Modern broadband alarms with self-adjusting volume are far quieter and less disturbing than traditional alarms and can significantly reduce night-time noise pollution while maintaining safety. The use of such alarms at night could be imposed as a planning condition.

External Loading and Unloading

- 7.2 We have assumed that loading and unloading of goods at night is either undertaken internally or manually via a docking station fitted with acoustic buffers that create an acoustic seal around the rear of the vehicle. We have assumed forklifts are not used externally at night. This could be imposed as a planning condition.

External Doors and Roller Shutters

- 7.3 We have assumed that external doors and roller shutters are kept closed at night, to reduce noise disturbance. This could be imposed as a planning condition.

8.0 ROAD TRAFFIC NOISE

- 8.1 The proposed scheme will change traffic on the local road network. To assess the potential environmental noise impact of these traffic volume changes, the traffic consultants Stunt Consulting have provided information relating to operational traffic flows. The traffic data supplied is shown below:

Proposed Vehicle Movements			Daytime		Night-time	
			07:00-23:00		23:00-07:00	
			Total (16-hours)	Peak Hour	Total (8-hours)	Peak Hour
Arrivals	HGV	10	9	1	1	0
	Cars & LGV	111	99	23	12	2
Departures	HGV	11	10	2	1	0
	Cars & LGV	122	109	9	13	2
Combined	HGV	21	19	3	2	0
Two-Way Movements	Cars & LGV	255	227	32	28	4

- 8.3 These vehicles would access the site via Milford Road and Meadow Road. Given existing and historical uses along these roads, these vehicles would not be expected to have any significant impact on the total number of vehicle movements on these roads i.e. less than 10%.
- 8.4 The Highways England published Design Manual for Roads and Bridges guidance (Highways England Design Manual for Roads and Bridges: LA111 - Noise and Vibration; Revision 2 (May 2020)), sets out the requirements for assessing and reporting the effects of noise from highway projects.
- 8.5 With regard to the operational noise from roads, DMRB provides guidance in terms of the magnitude of noise level change for the short-term and long-term as a result of new or altered highway, with the long term change being relevant to this development as detailed below:

Magnitude of Change - Long Term	
Long term magnitude	Long term noise change (dB L _{A10,18hr} or L _{night})
Major	Greater than or equal to 10.0
Moderate	5.0 to 9.9
Minor	3.0 to 4.9
Negligible	Less than 3.0

- 8.6 Based on the above, any long term change in traffic noise levels (following completion of the development relative to current baseline noise levels) would be less than 0.1 dB L_{A10,18hour}.
- 8.7 It is therefore concluded that road traffic generated by the proposed development would not have a significant adverse noise impact on existing dwellings in the vicinity of the site.

9.0 OPERATIONAL NOISE

- 9.1 The proposed scheme will consist of a variety of industrial and warehouse units with ancillary offices, associated car parking, service area and landscaping. The proposed scheme is for uses within B2 and B8 planning classification uses.
- 9.2 The specific operational noise levels of future tenants are not known at this time. It is assumed that future tenants will use reasonable endeavours to control internal operation noise levels in line with the lower exposure limit of 80 dB $L_{AEP,d}$ as prescribed in the 'The Control of Noise at Work Regulations 2005' to protect employees working within the building from the risk of noise induced hearing loss.
- 9.3 The external envelope of the proposed units comprises insulated cladding and roller shutter doors located on façades facing away from residential properties. As such, noise breakout from internal activities is not considered to be an issue.
- 9.4 To the south are residential dwellings located on Meadow Road at approximately 45m from the nearest loading bay, properties on Addison Road are generally shielded from operational noise by the proposed building layout, however there is one loading bay at approximately 30m from the nearest residential property that is not shielded by the building layout. Properties on Denbeigh Close are all fully shielded by the proposed building layout and at a closest distance of 30m.
- 9.5 The external activities from the units facing Milford Road (units 10 and 11) are likely to be dominated by Heavy Goods Vehicles (HGVs) arriving and departing and the loading/unloading of the HGVs. The other units (units 1-9) are likely to be served by LGVs only.
- 9.6 Source noise levels for the HGV and LGV movements and unloading has been extracted from "in- house" database for typical loading activities at approximately 5m, as summarised in the table below:

Activity	Approximate Duration of Activity (s)	Measured Noise Level $L_{Aeq,T}$ @ approximately 5m
HGV Operations		
HGV entering service yard	15	71
Lorry reversing to within 3m of loading bay + air brake	30	70
Driver exiting cab, opening trailer doors	60	66
Driver returning to cab, reversing onto loading dock, air brake, engine off	30	70
Operation of dock leveller	15	59
Loading/unloading activity	2400	66
Driver returning to cab, engine starting, HGV pulling forward, air brake, closing doors	60	70
HGV departing service yard	20	70
LGV/Van Operations		
LGV entering service yard	15	70
Van reversing to loading bay	20	69
Driver exiting cab, opening doors	60	66
Loading/unloading activity (handballing)	1200	60
Driver returning to cab, engine starting, LGV pulling forward, brake, closing doors	60	69
LGV departing service yard	20	69

9.7 The BS 4142 assessment methodology utilises a 1-hour assessment period for the daytime. The data provided by the transport consultants indicate a total of 19 HGV movements (total arriving and departing) and 227 cars and LGVs during the daytime, of which approximately half are assumed to be LGVs.

- Average of 1.2 HGV movements per hour (serving units 10 and 11) and it is assumed that the lorries would be loaded or unloaded again within the hour. Accordingly, this would be a total of approximately 2 minutes of manoeuvring and 40 minutes loading of HGVs per hour.
- Average of 10 LGV movements per hour (serving units 1-9), and it is assumed that the lorries would be loaded or unloaded again within the hour. Accordingly, this would be a total of approximately 20 minutes of manoeuvring and 200 minutes loading of LGVs per hour. Split over

9 units, this reduces to an average of 2.2 minutes of manoeuvring and 22 minutes loading of LGVs per hour at the bays closest to each receptor.

9.8 At night, the BS 4142 assessment methodology utilises a 15-minute assessment period. The information from the transport consultants indicate a total of 2 HGV movements (total arriving and departing) and 28 cars and LGVs during the whole 8 hour night-time period.

- Worst-case 1 HGV movement in any 15 minute period (serving units 10 and 11) with a worst-case 50% of that time taken for loading/unloading expected. Accordingly, this would be a total of approximately 2 minutes of manoeuvring and 7.5 minutes loading of HGVs per hour.
- Typically, 1 LGV movement in any 15 minute (serving units 1-9), with a worst-case 50% of that time taken for loading/unloading expected. Accordingly, this would be a total of approximately 2 minutes of manoeuvring and 7.5 minutes loading of LGVs per hour. As a worst-case, this will be assumed to be at the closest unit to the identified receptors.

9.9 Using the above information, the receptor noise levels have been predicted to surrounding receptors. In addition to on-time and distance corrections, a screening correction of -10 dB has been taken due to screening from boundary fences to the Addison Road receptors and -15 dB due to screening from the intervening buildings to the Denbeigh Close receptors. The assessment noise levels from each activity are identified in the table below.

Receptor	Activity	Measured Noise Level @ 5m (dB)	Daytime 07:00-23:00		Night-time 23:00-07:00	
			% on-time	Predicted Receptor Noise Level $L_{Aeq,1hr}$ (dB)	% on-time	Predicted Receptor Noise Level $L_{Aeq,15min}$ (dB)
Meadow Road	HGV Manoeuvring	70	3%	36	13%	42
	Loading/Unloading Activities	66	67%	45	50%	44
	Total	-	-	46	-	46
Addison Road	HGV Manoeuvring	69	4%	29	13%	36
	Loading/Unloading Activities	60	37%	30	50%	31
	Total	-	-	33	-	36

Receptor	Activity	Measured Noise Level @ 5m (dB)	Daytime		Night-time	
			07:00-23:00		23:00-07:00	
			% on-time	Predicted Receptor Noise Level $L_{Aeq,1hr}$ (dB)	% on-time	Predicted Receptor Noise Level $L_{Aeq,15min}$ (dB)
Denbeigh Close	HGV Manoeuvring	69	4%	24	13%	30
	Loading/Unloading Activities	60	37%	25	50%	26
	Total	-	-	28	-	31

9.10 The results of the daytime BS4142 assessment are presented in the table below.

Property	Predicted $L_{Aeq,1hour}$ dB	Character Corrections (dB)	Rating Level L_{Ar} (dB)	Prevailing Background Level, L_{A90} dB	Excess of Rating Level Over Typical Background Noise Level	Initial Assessment Outcome
Meadow Road	46	+3 (Impulsivity)	49	45	+4	Around a potential <i>adverse impact</i>
Addison Road	33	+3 (Impulsivity)	36	43	-7	Below a <i>low impact</i>
Denbeigh Close	28	+3 (Impulsivity)	31	43	-12	Below a <i>low impact</i>

9.11 The results of the night-time BS4142 assessment are presented in the table below.

Property	Predicted $L_{Aeq,15min}$ dB	Character Corrections (dB)	Rating Level L_{Ar} (dB)	Prevailing Background Level, L_{A90} dB	Excess of Rating Level Over Typical Background Noise Level	Initial Assessment Outcome
Meadow Road	46	+3 (Impulsivity)	49	31	+18	Potential <i>significant adverse impact</i>
Addison Road	36	+3 (Impulsivity)	39	30	+9	Around a potential <i>significant adverse impact</i>
Denbeigh Close	31	+3 (Impulsivity)	34	30	+4	Around a potential <i>adverse impact</i>

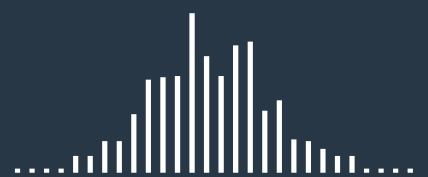
- 9.12 It can be identified from the above tables that the activity noise will not achieve the numerical requirements of Reading Borough Council. However, as this is activity noise and not plant noise and therefore not constant, context is extremely important to determine the likely level of impact.
- 9.13 The predicted noise levels for the Meadow Road receptors closest to Units 9 and 10 will be around the level of the typical background noise level during the daytime, primarily driven by unloading noise, and above the typical night-time noise level during the very worst-case 15 minute period by 15 dB. However, it is noted that due to the very low number of movements those noise levels would only ever occur once or twice during any night-time period and are not excessively high in terms of an absolute noise level. Whilst the predicted activity noise levels are higher than the prevailing background noise level at night, the average ambient noise level is significantly higher at that part of Meadow Road, close to Milford Road and is around the same level as the predicted activity noise levels. The character of the activity noise is likely to be similar to the prevailing noise level given the industrial and commercial character of the Milford Road businesses. Accordingly, the impact of the proposed activities on Meadow Road receptors is not expected to be significant.
- 9.14 The predicted noise levels for the Addison Road and Denbeigh Close receptors are significantly below the level of the typical background noise level during the daytime and above the typical night-time noise level during the very worst-case 15 minute period by 6 dB and a marginal 1 dB respectively. However, it is noted that due to the low number of movements those noise levels would not occur often during any night-time period and are not high in terms of an absolute noise level. Whilst the predicted activity noise levels are higher than the prevailing background noise level at night, they are below the average ambient noise level. The character of the activity noise is likely to be similar to the prevailing noise level given the industrial and commercial character of the existing businesses in the vicinity businesses. Accordingly, the impact of the proposed activities on the Addison Road and Denbeigh Close receptors is not expected to be significant.
- 9.15 Noise levels at offices on Milford Road are likely to be similar to those predicted for the residential receptors at Meadow Road for Units 9 and 10. This is significantly below the identified 55 dB L_{Aeq} criterion and is therefore likely to be acceptable.
- 9.16 On the basis of the above, together with the noise mitigation measures outlined in Section 6, we do not anticipate an adverse environmental noise impact due to operational noise.

10.0 NOISE FROM FIXED BUILDING SERVICES

- 10.1 At this stage of the planning process, detailed information relating to proposed building services and/or process plant or equipment that may be installed by future tenants is not available. As such, it is not possible to provide a detailed assessment of potential noise impacts.
- 10.2 From a practical point of view, the potential impact of any plant or equipment on nearby dwellings can be effectively controlled by locating plant and equipment installations, wherever possible, away from the existing dwellings.
- 10.3 Plant noise emission criteria to achieve the requirements of the Local Authority (RBC) have been provided in Section 6.
- 10.4 In most situations, conventional noise control engineering (e.g. use of attenuators, acoustic enclosures, etc.) can be used to reduce noise from process and fixed plant installations should noise reduction be required.
- 10.5 Planning control over the potential noise impact of any future plant/equipment installation can be retained by the Local Planning Authority through the use of an operative planning condition (e.g. specifying plant noise emission limits) and/or condition which requires the submission of plant/equipment details and attendant noise control provisions for approval by the LPA.
- 10.6 BREEAM Pol 05 requirements are for the plant noise level to be at least 5 dB below the existing background noise levels when assessed in accordance with BS 4142:2014. Achievement of RBC's criteria for plant noise will achieve this requirement as it is more stringent, assuming that character corrections do not add up to greater than +5, which is unlikely for fixed plant.

11.0 CONCLUSIONS

- 11.1 Quantum Acoustics have undertaken an environmental noise survey to establish the existing ambient and background noise levels.
- 11.2 The proposed scheme comprises a variety of industrial and warehouse units with ancillary offices, associated car parking, service area and landscaping. The proposed development is for uses within B2 and B8 planning use classification. The scheme will replace existing units/uses with similar planning use classifications.
- 11.3 The potential change in road traffic volumes would have a “negligible” change in traffic noise levels. Therefore, there would be no adverse impact on existing dwellings in the vicinity due to road traffic noise.
- 11.4 In terms of operational noise, the impacts have been assessed and noise impacts from HGV and LGV manoeuvring and loading/unloading activities have been identified to be not significant during the daytime and unlikely to be significant at night due to the likely frequency of intensive use, absolute noise levels and the prevailing context of the area.
- 11.5 Environmental plant noise emissions will be controlled in accordance with the Local Authority’s requirements, BREEAM Pol 05, UK guidance on noise and planning. At the time of writing, the plant selections have not yet been made. In the meantime, we advise we foresee no difficulty in achieving appropriate plant noise criteria. Compliance with appropriate plant noise emission criteria will ensure the proposed plant has no significant adverse noise impact on existing dwellings in the vicinity.
- 11.6 It is therefore concluded that the proposed development complies fully with noise related national and local planning policy and any mitigation can, if considered necessary, be enforced by means of appropriate planning conditions.



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