



**STEPHENSON
HALLIDAY**

Planning, Landscape & Environment
an **RSK** company

MAES Y DROELL QUARRY EXTRACTION OF INDUSTRIAL SAND

Environmental Statement
Volume II

Chapter 06:Noise

Silica Sand Mold Limited

Prepared by Noise Consultants

Chapter 06: Noise

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6 NOISE

6.1 Introduction

6.1.1 This Chapter provides a summary of the assessment of noise effects as detailed in **ES Volume III, Appendix 6.1: Noise and Vibration Report**.

6.1.2 A competent specialist firm, Logika Group, has undertaken the assessment.

6.2 Methodology

6.2.1 The preparation of the baseline noise assessment included the collection of data undertaken at locations considered representative of the nearest dwellings to the Proposed Development boundary. The assessment has been undertaken by Noise Consultants, part of the Logika Group, in accordance with BS 5228-1:2009 + A1:2014, *Code of practice for noise and vibration control on construction and open sites – Part 1: Noise*, which sets out guidance on the prediction and assessment of construction and operational noise.

Study Area

Operational and Construction Noise

6.2.2 To assess the noise effects of the Proposed Development during both construction and operational phases, the study area of 300 m was adopted.

Construction Traffic Noise

6.2.3 In relation to off-site construction traffic, the study area is defined as a 50 m corridor from the kerb line of public roads where construction-related increases in traffic could result in a rise in Basic Noise Level (BNL) of 1 dB or more, in accordance with the approach set out in the Design Manual for Roads and Bridges (DMRB), LA 111: Noise and vibration.

Receptor Groups

6.2.4 Nine noise-sensitive receptors (NSRs) were identified within the construction and operational noise assessment study areas. NSRs closest to the Proposed Development have been identified using aerial photography, GIS datasets and site visits. All sensitive receptors are dwellings.

Table 6-1: Noise Sensitive Receptor

Receptor ID	Receptor	Study Area
R1	Ty Isa	Construction & Operational Noise
R2	Y Fron	Construction & Operational Noise
R3	Property 3 – Ffordd Cae Newydd	Construction & Operational Noise
R4	Property 4 – Graianrhyd Road	Construction & Operational Noise
R5	Maes Y Droell Farm	Construction & Operational Noise
R6	Castell	Construction & Operational Noise
R7	Property 7 – Ffordd Cae Newydd	Construction & Operational Noise

R8	Property 8 – Ffordd Cae Newydd	Construction & Operational Noise
R9	Property 9 – B5430	Construction & Operational Noise

Baseline Noise Survey

- 6.2.5 A baseline noise survey was undertaken to establish existing ambient noise levels across the Site and at the nearest noise-sensitive receptors (NSRs). Noise monitoring was carried out at four locations across the Site, selected to be representative of the nearest NSRs.
- 6.2.6 The survey captured noise levels during both daytime (07:00–23:00) and night-time (23:00–07:00) periods. Monitoring was conducted over an eight-day period, including a weekend, from Wednesday 21st May to Wednesday 28th May 2025.
- 6.2.7 The locations of the monitoring positions and identified NSRs are shown on **Plate 6-1**, with a summary of the baseline results provided in **Table 6-2**.

Plate 6-1: Monitoring Locations and NSRs

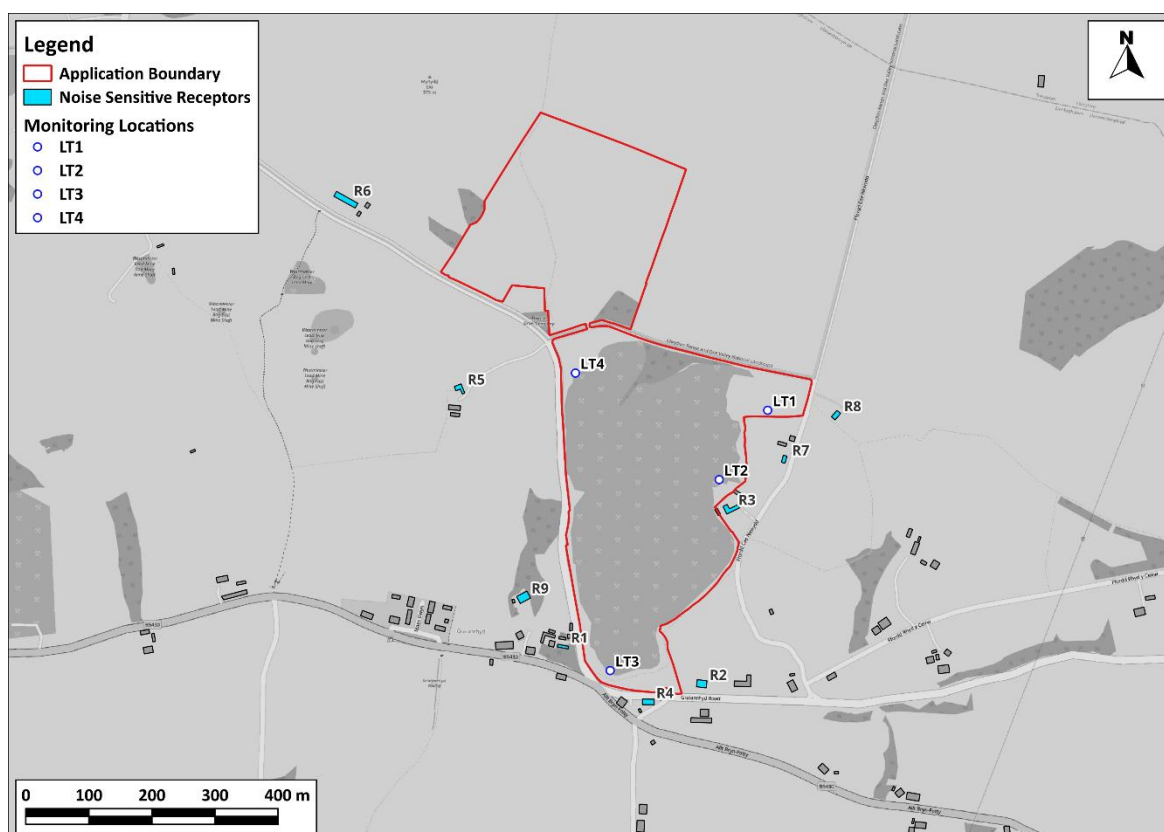


Table 6-2: Baseline Results Summary

Measurement Location	Date and Time	Period	$L_{Aeq,T}$ (dB)	Mean $L_{A90,15mins}$ (dB)	Mode $L_{A90,15mins}$ (dB)
LT1	21/05/2025 13:00 – 28/05/2025 13:00	Daytime (07:00–19:00)	44	34	31
		Evening	42	29	29

Measurement Location	Date and Time	Period	L _{Aeq,T} (dB)	Mean L _{A90,15mins} (dB)	Mode L _{A90,15mins} (dB)
		(19:00 – 23:00)			
		Night-time (23:00-07:00)	45	30	18*
LT2	21/05/2025 13:00 – 28/05/2025 13:00	Daytime (07:00-19:00)	46	34	26
		Evening (19:00 – 23:00)	43	29	23
		Night-time (23:00-07:00)	45	30	16*
LT3	21/05/2025 13:00 – 28/05/2025 13:00	Daytime (07:00-19:00)	52	39	34
		Evening (19:00 – 23:00)	51	34	33
		Night-time (23:00-07:00)	48	33	17*
LT4		Daytime (07:00-19:00)	46	35	29
		Evening (19:00 – 23:00)	45	30	30
		Night-time (23:00-07:00)	43	31	16*

Note

* The modal noise level at the noise floor of the monitoring equipment is therefore unreliable.

Future Baseline

- 6.2.8 The Site is located in a rural area with no significant nearby noise sources. As a result, future noise levels are not expected to change significantly from those recorded during the baseline survey.

6.3 Assessment Methodology

Scope of Assessment

- 6.3.1 The scope of the assessment has been informed by the EIA scoping process. The noise assessment considers noise associated with the on-site construction of the Proposed Development, on-site plant and equipment during operation, restoration activities, and operational road traffic.

6.4 Significance Criteria

Sensitivity of the Receptor

- 6.4.1 Typical Sensitivity Categories for Noise are identified into three categories. These are set out below in **Table 6-3**. All sensitive receptors in this case are dwellings and are treated as High Sensitivity.

Table 6-3: Criteria for Assessing the Noise Sensitive Receptors

Sensitivity	Descriptor	Examples of receptor
High	Receptors where people or operations are particularly susceptible to noise	Residential, including private gardens where appropriate. Quiet outdoor areas used for recreation Conference facilities Theatres/Auditoria/Studios.
Medium	Receptors moderately sensitive to noise, where it may cause some distraction or disturbance	Offices Bars/Cafes/Restaurants where external noise may be intrusive. Sports grounds when spectator noise is not a normal part of the event and where quiet conditions are necessary (e.g. tennis, golf, bowls).
Low	Receptors where distraction or disturbance from noise is minimal	Buildings not occupied during working hours Factories and working environments with existing high noise levels Sports grounds when spectator noise is a normal part of the event Night Clubs.

Magnitude of impact

Construction Noise

- 6.4.2 Construction noise has been assessed for the proposed removal of the existing building on the Site. The assessment of noise from on-site construction activities has been carried out in accordance with the criteria set out in BS 5228-1:2009+A1:2014. Construction activities likely to be required for the construction of the Proposed Development have been considered, along with noise levels for typical items of construction plant and equipment that may be required.

Table 6-4: Magnitude of Impact Categories – On-Site Construction Activities

Magnitude of Impact	Construction Noise
Negligible	< 65 dBA
Minor	65 – 70 dBA
Moderate	70 – 75 dBA
Major	≥ 75 dBA

- 6.4.3 Where a magnitude of impact is found to be Negligible or Minor due to construction noise, the effects are considered to be ‘not significant’ in the context of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (as amended) (hereafter referred to as the ‘EIA Regulations 2017’).

- 6.4.4 Where a magnitude of impact of Moderate or Major are shown to occur, the effects are considered to be 'significant adverse' in the context of the EIA Regulations.

Operational Road Traffic

- 6.4.5 Operational road traffic noise has been assessed by comparing the baseline traffic along the local road network to the increase as a result of additional traffic generated by the Proposed Development, predicted using Calculation of Road Traffic Noise (CRTN, 1988) methodology. The calculations provide a basic noise level (BNL) from road traffic 10 m from the roadside.
- 6.4.6 CRTN is unreliable for traffic flows below 50 veh/h (1,000 veh/18-hour day), so lower flows have been assessed using the BS5228 haul road method.
- 6.4.7 This provides LAeq,12h, aligned with site hours (07:00–19:00), which is time-corrected to LAeq,16h and converted to LA10,18h (per TRL guidance) to derive a BNL for comparison with LA111.
- 6.4.8 Impacts are based on changes in noise levels, with significance (Negligible to Major) defined using LA111 short-term criteria.

Table 6-5: Magnitude of Impact Categories – Operational Road Traffic

Magnitude of Impact	Operational Traffic Noise
Negligible	< 1 dB
Minor	1 – 2.9 dB
Moderate	3 – 4.9 dB
Major	≥ 5 dB

- 6.4.9 Where a magnitude of impact is found to be Negligible or Minor due to operational road traffic, the effects are considered to be 'not significant' in the context of the EIA Regulations.
- 6.4.10 Where a magnitude of impact of Moderate or Major are shown to occur, the effects are considered to be 'significant adverse' in the context of the EIA Regulations.

Operational Noise

- 6.4.11 The assessment of noise from the operation of the Proposed Development was carried out with reference to the criteria set out in Minerals Technical Advice Note (Wales) 1: Aggregates (MTAN1, 2024) and Minerals Planning Guidance: The Control of Noise at Surface Mineral Workings (MGP11, 1993). The criteria adopted for the assessment are set out in **Table 6-6** below.

Table 6-6: Magnitude of Impact Categories – Operational Noise

Magnitude of Impact	Operational Noise Level (LAeq,1h)
Negligible	< Background Noise Level, LA90, T and < 55 dBA
Minor	0 – 10 dB Above Background Noise Level, LA90, T and < 55 dBA
Moderate	> 10 dB Above Background Noise Level, LA90, T and < 55 dBA
Major	> 10 dB Above Background Noise Level, LA90, T

and > 55 dBA

- 6.4.12 Where operational noise results in a Negligible or Minor impact, effects are not considered significant.
- 6.4.13 Moderate impacts require further judgement, taking account of factors such as magnitude, change, intermittency, baseline conditions, mitigation effectiveness (including BPM), and duration.
- 6.4.14 Major impacts are considered significant adverse effects under the EIA Regulations.

Magnitude of Change

- 6.4.15 The magnitude of impact for each receptor is considered against its sensitivity to determine the significance of effect.

Table 6-7: Significance of Effects Matrix

Sensitivity/Value of Receptor	Magnitude of Effect				
	High	Medium	Low	Very Low	Negligible
High	Major	Major	Moderate	Minor	Negligible
Medium	Major	Moderate	Minor	Negligible	Negligible
Low	Moderate	Minor	Negligible	Negligible	Negligible
Very Low	Minor	Negligible	Negligible	Negligible	Negligible

Table 6-8: Noise Assessment – Summary Assessment Matrix

Receptor	Description of Impact	Sensitivity/Value of Receptor	Magnitude of Impact	Significance of effects	Proposed mitigation measures	Residual Effect after Mitigation
On-Site Construction Activities						
All NSR	Construction-related activity, including site clearance works, demolition of existing buildings, haul road excavation and processing area excavation	High	Negligible	Not significant	None proposed	Not Applicable
Operational Road Traffic						
All NSR Significant effect on two receptors, not significant elsewhere	HGVs exporting minerals and importing materials, staff and contractor vehicles, and internal haulage movements	High	Moderate	Significant adverse	Operator to agree HGV Traffic Management Plan	Significant adverse
Operational Phase (All phases)						
All NSR	Operational phases comprise sequential stages of extraction, processing, backfilling and progressive restoration across different parts of the Site.	High	Moderate	Significant adverse	Specific noise mitigation measures include 4 m high noise barriers / bunding along the western and eastern site boundary during all operational phases 4 m high noise barrier/bunding along the western boundary of the processing area during Phase 4. These will be secured by the planning condition	Predicted noise levels at all receptors during all operational phases are expected to result in a magnitude of impact of either 'Negligible' or 'Minor'. Noise effects during the operational phase are therefore deemed 'not significant' in the context of the EIA regulations.

6.5 Assessment of Direct Impacts of the Proposed Development

- 6.5.1 The assessment has predicted operational noise from each operational phase at the NSRs.

Construction Noise

- 6.5.2 The assessment has concluded that the predicted noise levels at all receptors during each construction activity are expected to result in a magnitude of impacts of 'Negligible'. Therefore, noise effects during the construction phase are considered 'not significant' in the context of the EIA regulations.

Operational Road Traffic

- 6.5.3 The assessment indicates a 'Minor' increase at Road Link 4 and a 'Moderate' increase at Road Link 2. Traffic noise effects are 'not significant' within 50 m of Links 1, 3 and 4, but 'significant adverse' within 50 m of Link 2. Two receptors within this distance are expected to experience a 'Moderate' impact, considered 'significant adverse' under the EIA Regulations.
- 6.5.4 It should, however, as set out in paragraph 1.5.8 of **Volume III, Appendix 6.1: Noise and Vibration Report** be noted that although the assessment has indicated that a 4 dB change is expected along road link 2 due to operational road traffic, which indicates a 'Moderate' impact, the assessment is based on peak operational traffic flows and typical operational traffic flows are expected to be lower than those presented in the assessment. Typical operational traffic flows are likely to result in 'Minor' impacts which would be deemed 'not significant' in the context of the EIA regulations; however, the assessment is based on peak traffic flows as a worst-case.

Operational Noise

- 6.5.5 Noise impacts during the operational phases demonstrate that noise levels at R3 (Property 3 – Ffordd Cae Newydd) during Phase 2, Phase 3 and Phase 4 operations are expected to result in a magnitude of impact of 'Moderate'.
- 6.5.6 It is also shown that the predicted noise level at R5 (Maes-Y-Droell Farm) during Phase 1, Phase 2 and Phase 4 are expected to result in a magnitude of impact of 'Moderate'.
- 6.5.7 Nine noise-sensitive receptors (NSRs) were identified within the construction and operational noise assessment study areas. The NSRs closest to the Proposed Development have been identified using aerial photography, GIS datasets and site visits. All sensitive receptors are dwellings.

6.6 Further Mitigation

Construction Noise

- 6.6.1 No mitigation is required.

Operational Road Traffic

- 6.6.2 Operational road traffic will be managed via an HGV Traffic Management Plan, which will be secured by a planning condition.

Operational Phase

- 6.6.3 An assessment has been undertaken with the inclusion of 4 m earth bunds and / or acoustic fences along the western and eastern site boundaries. These would be formed from excavated material and retained throughout all operational phases.
- 6.6.4 For phase 4, additional mitigation is proposed that includes a further 4 m bund or barrier along the western boundary of the processing area, constructed from on-site material and retained for the duration of this phase.
- 6.6.5 All mitigation measures would be secured through planning conditions and implemented at each phase of development.

Residual effects

Construction Noise

- 6.6.6 Noise effects as a result of noise during the construction phase are considered 'not significant' in the context of the EIA regulations.

Operational Road Traffic

- 6.6.7 The effects of operational traffic noise at receptors within 50 m of road links 1, 3 and 4 are deemed 'not significant' in the context of the EIA regulations. The effects of operational traffic noise at receptors within 50 m of road link 2 (Unnamed Road - Southern Site) are deemed 'significant adverse' in the context of the EIA regulations.

Operational phase

- 6.6.8 The predicted noise levels at all receptors during all operational phases are expected to result in a magnitude of impact of either 'Negligible' or 'Minor' following the implementation of noise mitigation in the form of 4 m earth bunds or barriers. Therefore, noise effects during the operational phase are deemed 'not significant' in the context of the EIA regulations.

Cumulative Effects

- 6.6.9 There are no other planned developments within the vicinity of the Site that would have an impact on predicted noise levels in the vicinity of the Site. Graig Limestone Quarry is some 850m from the Site at its nearest point. Given the relatively localised extent of noise impacts arising from the Proposed Development, no measurable cumulative noise impacts from the operation of both quarries is likely.

6.7 Summary

- 6.7.1 In conclusion, the assessment has presented a worst-case scenario; the results of the noise assessment have concluded that the predicted noise levels during the construction phase would result in a magnitude of impact of 'Negligible'.

- 6.7.2 Operational phase road traffic there is a perceived significant effect at receptors within 50m of road link 2 (Unnamed Road - Southern Site), which is deemed 'significant adverse' in the context of the EIA regulations. However, this is based on typical peak operational traffic flow. In reality, typical operational traffic flows are expected to be lower than those presented in the assessment.
- 6.7.3 During the operational phase with embedded mitigation, the noise effects during the operational phase are deemed 'not significant' in the context of the EIA regulations.