



**WHITESTONE**  
solar farm

# **WHITESTONE SOLAR FARM**

## **Volume 6: Environmental Statement**

### **6.20 Appendix 14.3: Construction Noise and Vibration Assessment**

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## ENVIRONMENTAL STATEMENT

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**Glossary**

Term	Meaning
<i>A-weighting</i>	Frequency weighting applied to measured sound in order to account for the relative loudness perceived by the human ear.
<i>Cable Corridors</i>	Corridors within which the high voltage cables would be constructed.
<i>Decibel (dB)</i>	The logarithmically scaled measurement unit of sound.
<i>Environmental Statement (ES)</i>	The Environmental Statement which presents the environmental information relating to the Proposed Development. The ES has been prepared to present information for formal consultation in accordance with current EIA regulation.
<i>L<sub>Aeq,T</sub></i>	A-weighted equivalent continuous sound level over a given time period. It is the sound level of a steady sound that has the same energy as a fluctuating sound over the same time period.
<i>Peak Particle Velocity (PPV)</i>	A measure of the magnitude of vibration, representing the greatest instantaneous particle velocity in a given time period. Measured in mm/s.
<i>The Applicant</i>	Whitestone Net Zero Ltd.
<i>The Application</i>	The Application submitted to the Secretary of State for a Development Consent Order.
<i>The Proposed Development</i>	The proposed Whitestone Solar Farm.

**Acronyms**

Acronym	Meaning
<i>BESS</i>	Battery Energy Storage System
<i>BNL</i>	Basic Noise Level
<i>CC</i>	Cable Corridors
<i>CCC</i>	Construction of the Cable Corridors
<i>CEMP</i>	Construction Environmental Management Plan
<i>CRTN</i>	Calculation of Road Traffic Noise
<i>DMRB</i>	Design Manual for Roads and Bridges
<i>ES</i>	Environmental Statement
<i>HV</i>	High Voltage
<i>LOAEL</i>	Lowest Observed Adverse Effect Level
<i>NAC</i>	Noise Advisory Council
<i>oCEMP</i>	Outline Construction Environmental Management Plan
<i>PPV</i>	Peak Particle Velocity
<i>SEL</i>	Sound Exposure Level
<i>SOAEL</i>	Significance Observed Adverse Effect Level

**Units**

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Units	Meaning
<i>dB</i>	Decibel
<i>m</i>	Metre
<i>mm</i>	Millimetre
<i>s</i>	Second

## 14.3 Construction Noise and Vibration Assessment

### Introduction

- 14.3.1 This Appendix supports **Environmental Statement (ES) Volume 2, Chapter 14: Noise and Vibration [EN0110020/APP/6.14]** which presents the findings of an assessment of the likely significant effects of Noise and Vibration as a result of the Proposed Development. **ES Volume 2, Chapter 14: Noise and Vibration [EN0110020/APP/6.14]** defines significance in terms of magnitude of impact, observed adverse effect level, and context.
- 14.3.2 This Appendix presents the assessment methodology in determination of the magnitude of impact for construction noise and vibration and construction traffic noise from the Proposed Development.
- 14.3.3 This Appendix presents the calculated construction noise and vibration, along with the associated magnitudes of impact for each relevant assessment location (presented in Table 14.2.1 of **ES Volume 3, Appendix 14.2: Baseline Conditions [EN0110020/APP/6.20]**) as a result of the Proposed Development. Calculations make use of criteria derived from the results of baseline noise monitoring that was conducted between 31st July and 28th August 2025 and between 20th January and 4th February 2026.

### Study Area

- 14.3.4 The Study Area is defined based on the type of noise and vibration generated by the Proposed Development during the construction and decommissioning phases in relation to distances from noise sensitive receptors at which noise and vibration has the potential to cause impacts. This includes:
- An area extending 300m from noise generating activities during the construction and decommissioning phases;
  - An area extending 100m from vibration generating activities during the construction and decommissioning phases; and
  - An area extending 50m from construction and decommissioning traffic routes.
- 14.3.5 **ES Volume 3, Figures 14.1 – 14.3: Noise Monitoring Locations [EN0110020/APP/6.19]** presents assessment locations which have been chosen to represent noise sensitive receptors within the Study Areas.

### Assessment Criteria

#### Construction Noise

- 14.3.6 The assessment of noise from on-site construction activities has been carried out with reference to the criteria set out in BS 5228:2009+A1:2014, Code of Practice for Noise and Vibration Control on Construction and Open Sites, Part 1, Noise (BS 5228-1).
- 14.3.7 **Table 14.3.1** presents assessment categories and associated noise level, as proposed in Table E.1 of BS 5228-1 with reference to the ABC method.

14.3.1 The ambient baseline façade level for the given period (daytime, evenings and weekends, and night-time) is rounded to the nearest 5dB and compared against the thresholds set out in **Table 14.3.1** to produce construction noise criteria. The process for selecting the criteria is summarised below:

- Category A thresholds are used when baseline ambient noise levels (rounded to the nearest 5dB) are less than the Category A values;
- Category B thresholds are used when baseline ambient noise levels (rounded to the nearest 5dB) are the same as the same Category A values;
- Category C thresholds are used when baseline ambient noise levels (rounded to the nearest 5dB) are higher than Category A values; and
- Where the baseline ambient noise levels exceed the Category C values, then a potential Significant effect is indicated if the total  $L_{Aeq,T}$  noise level for the period increases by more than 3dB due to construction noise.

**Table 14.3.1: Construction Noise Assessment Categories**

Period		Assessment Category ( $L_{Aeq,T}$ ) [dB]		
		A	B	C
Daytime	T=12hr, Weekdays, 07:00-19:00; T=6hr, Saturday, 07:00-13:00	65dB	70dB	75dB
Evenings and weekends	T=4hr, Weekdays 19:00–23:00; T=10hr, Saturdays 13:00-23:00; T=16hr, Sundays 07:00-23:00	55dB	60dB	65dB
Night-time	T=8hr, Every day 23:00-07:00	45dB	50dB	55dB

14.3.2 The adopted assessment categories and associated noise levels are presented along with the calculation results in a later section of this Appendix, in **Table 14.3.8**.

14.3.3 The noise level associated with the relevant assessment category is adopted as the threshold of Lowest Observed Adverse Effect Level (LOAEL). The noise levels associated with Category C are adopted as the threshold of Significant Observed Adverse Effect Level (SOAEL).

14.3.4 **Table 14.3.2** presents the adopted construction noise magnitudes of impact in terms of LOAEL and SOAEL.

**Table 14.3.2: Construction and Decommissioning Noise Magnitude of Impact**

Magnitude of Impact	Effect Level
Negligible	5dB or more below LOAEL
Minor	Up to 5dB below LOAEL
Moderate	Above LOAEL but below SOAEL
Major	Above SOAEL

## Construction Vibration

- 14.3.5 Vibration impacts associated with on-site construction activity have been assessed with reference to the criteria set out in BS 5228:2009+A1:2014, Code of Practice for Noise and Vibration Control on Construction and Open Sites, Part 2, Vibration (BS 5228-2).
- 14.3.6 The primary cause of community concern relating to vibration during construction generally relates to building damage from sources of vibration. BS 5228-2 indicates that the threshold of human perception to vibration is between approximately 0.15 and 0.3mm/s peak particle velocity (PPV).
- 14.3.7 Vibration at a criterion of 1.0mm/s PPV level is described in BS 5228-2 as being likely to cause complaint, but that it can be tolerated if prior warning and explanation has been given to residents. This value is adopted as LOAEL for the assessment of construction vibration from the Proposed Development.
- 14.3.8 Vibration is likely to be intolerable for any more than a very brief exposure to 10mm/s. This value is adopted as SOAEL for the assessment of construction vibration from the Proposed Development.
- 14.3.9 **Table 14.3.3** presents the adopted construction vibration magnitudes of impact in terms of LOAEL and SOAEL.

**Table 14.3.3: Construction and Decommissioning Vibration Magnitude of Impact**

Magnitude of Impact	Effect Level
Negligible	Below 0.3mm/s
Minor	Above 0.3mm/s but below 1.0mm/s (LOAEL)
Moderate	Above 1.0mm/s (LOAEL) but below 10mm/s (SOAEL)
Major	Above 10mm/s (SOAEL)

## Construction Traffic Noise

- 14.3.10 Potential impact of noise from off-site construction traffic has been assessed with reference to the construction traffic noise assessment method and criteria given in the Design Manual for Roads and Bridges (DMRB) LA111.
- 14.3.11 For roads with low existing traffic flows, the absolute level of noise will be considered. DMRB proposes a value of 55dB LA<sub>10,18h</sub> as the LOAEL for daytime traffic noise. This value is adopted as LOAEL for the assessment of construction traffic noise from the Proposed Development.
- 14.3.12 DMRB LA111 does not seek to propose a SOAEL for construction traffic noise, however it states that construction traffic noise shall constitute a potential Significant effect where the magnitude of impact is either Moderate or Major. **Table 14.3.4** presents the adopted construction traffic magnitudes of impact.

**Table 14.3.4: Construction and Decommissioning Traffic Noise Magnitude of Impact**

Magnitude of Impact	Increase in Basic Noise Level (BNL) of Closest Public Road Used for Construction Traffic
Negligible	Less than 1.0dB
Minor	Greater than or equal to 1.0dB but less than 3.0dB
Moderate	Greater than or equal to 3.0dB but less than 5.0dB
Major	Greater than or equal to 5.0dB

## Assessment Methodology

### Construction Noise and Vibration

- 14.3.13 Construction noise predictions have been carried out using the methodology set out in BS 5228-1:2009+A1:2014 section E.3.2 Example method 1 – The ABC method.
- 14.3.14 The following construction activities have been identified for the construction of the Proposed Development:
- On-site traffic movements;
  - Construction of compounds;
  - Highways alterations and construction of site tracks;
  - Cut and fill earthworks;
  - Solar installation;
  - Substation installation;
  - Battery Energy Storage System (BESS) installation; and
  - High voltage (HV) cabling (cable trenching, cable jointing works, and trenchless crossings).
- 14.3.15 The final list of plant and equipment will be determined as part of the Construction Environmental Management Plan (CEMP). An **outline Construction Environmental Management Plan (oCEMP) [EN0110020/APP/5.9]** has been submitted with this Application. For this assessment, an indicative list of plant and equipment has been used, as presented in **Table 14.3.5**.

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**Table 14.3.5: Indicative Unmitigated Construction Plant**

Category	Plant	BS 5228-1 Reference	Number of Plant Items	Percentage On-Time [%]	Screening [dB]	Sound Power Level [dB]
Construction of compounds	Lorry	C2.34	2	10	0	101
	Lorry with lifting boom	C4.53	1	10	0	95
	Tracked excavator	C2.24	2	70	0	102
	Telescopic handler	C2.35	1	80	0	98
	Dumper	C4.4	2	80	0	106
	Roller	C2.38	1	30	0	96
	Diesel generator	C4.86	1	70	5	86
	Road sweeper	C4.90	1	30	0	99
	Tractor (towing water bowser)	C6.38	1	40	0	107
Solar installation	Mini piling rig	C3.17	2	60	0	105
	Tracked excavator	C5.18	1	20	0	101
	Lorry	C2.34	1	25	0	98
	Telescopic handler	C2.35	1	60	0	92
	Makita - 1.5kg Impact Wrench	M2.1	4	50	0	91
Cut and fill earthworks	Tracked excavator	C1.12	1	80	0	109
	Dump truck (tipping fill)	C2.30	1	80	0	106
	Dozer	C5.12	1	80	0	104
	Roller	C2.38	1	50	0	98
BESS installation	Tracked excavator	C5.18	1	20	0	101
	Vibratory roller	C5.20	1	20	0	96
	Lorry	C2.34	1	20	0	98
	Wheeled mobile crane	C4.43	1	20	0	88

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Category	Plant	BS 5228-1 Reference	Number of Plant Items	Percentage On-Time [%]	Screening [dB]	Sound Power Level [dB]
	Telescopic handler	C2.35	2	80	0	101
	Lorry with lifting boom	C4.53	1	20	0	98
HV cabling (cable trenching)	Tracked excavator	C4.65	1	70	0	97
	Vibratory roller <sup>1</sup>	C5.20	1	20	0	96
	Lorry	C9.25	2	20	0	106
	Tracked excavator	C2.25	1	50	0	94
	Mobile telescopic crane	C4.39	1	20	0	98
	Lorry with lifting boom	C4.53	1	20	0	98
	Lump hammer	C1.19	2	40	0	96
HV cabling (cable jointing works)	Tracked excavator	C2.3	3	90	0	110
	Lorry	C2.34	2	10	0	101
	Dumper	C4.4	1	100	0	104
	Dumper	C4.6	1	90	0	107
	Tracked excavator	C2.21	1	80	0	98
	Tractor (towing equipment)	C4.74	1	75	0	107
	Rolling (rolling fill)	C2.37	1	60	0	105
	Dozer	C2.13	1	100	0	106
	Diesel generator	C4.84	2	100	0	105
	Roller	C2.38	2	90	0	104
	Tipper lorry	C8.20	4	80	0	112
HV cabling (trenchless crossing)	Tracked excavator	C2.15	2	80	0	106
	Tracked excavator	C2.21	1	75	0	98
	Lorry	C2.34	2	10	0	101
	Roller	C2.38	1	30	0	96

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Category	Plant	BS 5228-1 Reference	Number of Plant Items	Percentage On-Time [%]	Screening [dB]	Sound Power Level [dB]
	Dumper	C4.4	1	60	0	102
	Rolling (rolling fill)	C2.37	1	60	0	105
	Tracked drilling rig with hydraulic drifter	C3.15	1	20	5	98
	Diesel generator for submersible pump	C8.23	1	20	0	83
	Diesel surface water pump	C8.22	1	20	0	92
	Tractor (towing water bowser)	C6.38	1	40	0	107
	Wheeled backhoe loader	C2.8	1	30	0	91
	Diesel generator	C4.85	2	30	0	92
	Angle grinder (grinding steel)	C4.93	1	30	0	103
	Air Compressor & Blasting Equipment	M5.1	1	30	0	101
Substation installation	Tracked excavator	C5.18	1	20	0	101
	Vibratory roller	C5.20	1	20	0	96
	Lorry	C2.34	1	10	0	98
	Lorry with lifting boom	C4.53	1	20	0	98
	Tracked excavator	C2.19	2	60	0	107
	Dumper	C4.4	3	60	0	108
	Concrete mixer truck (discharging) & concrete pump (pumping)	C4.28	1	50	0	100
	Lorry	C2.34	1	20	0	101
	Concrete pump	C3.26	1	20	0	96
	Concrete mixer truck	C4.20	2	20	0	104

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Category	Plant	BS 5228-1 Reference	Number of Plant Items	Percentage On-Time [%]	Screening [dB]	Sound Power Level [dB]
Highways alterations and construction of site tracks	Tracked excavator	C5.18	1	30	0	101
	Bulldozer	C5.15	1	30	0	104
	Lorry	C11.17	1	20	0	96
	Vibratory roller	C5.20	1	30	0	96

<sup>1</sup> The roller is not required for backfill in areas of soft ground

- 14.3.16 The construction phase is expected to span approximately 24 to 36 months. While the exact timeline would depend on various factors, including the submission and determination of the Application, the current plan is to commence construction in 2027 and conclude in 2029. However, it should be noted that the construction works would be phased across the Proposed Development, so it is unlikely for one area to be undergoing construction for a continuous 24 to 36 months.
- 14.3.17 Construction hours will be between 0700hrs and 1900hrs Monday to Friday, 0700hrs to 1300hrs on Saturdays, and no working on Sundays or bank holidays. Exceptions to this may be required for trenchless crossings or for time sensitive construction activities such as concrete pouring. The relevant local planning authorities will be consulted in relation to exceptional circumstances.
- 14.3.18 A preliminary construction program has been used for the assessment of construction noise in the daytime. Many daytime activities are likely to be concurrent; however it is unlikely that all activities would be concurrent for any period of time. This assessment has considered three potential worst-case concurrent construction periods using the construction program as a guide. These periods do not include the assessment of noise from the construction of the Cable Corridors (CCC) (see 14.3.20), but do include HV cabling works within the main site areas and boundaries.
- Construction period 1 (CP01): On-site traffic movements, construction of compounds, installation of internal tracks, cut and fill earthworks, substation installation, and BESS installation;
  - Construction period 2 (CP02): On-site traffic movements, installation of internal tracks, cut and fill earthworks, solar installation, BESS installation, and HV cabling (cable trenching, cable jointing works, and trenchless crossings); and
  - Construction period 3 (CP03): On-site traffic movements, cut and fill earthworks, solar installation, substation installation, BESS installation, and HV cabling (cable trenching, cable jointing works, and trenchless crossings).
- 14.3.19 These construction periods are likely to occur for at least a month each. The assessment of daytime construction noise is carried out on the basis of a worst-case exposure during that month. Not all impacts are expected to be experienced for the full duration of the assessed month. Where relevant, this clarified in determining of the significance of effect, presented in **ES Volume 2, Chapter 14: Noise and Vibration [EN0110020/APP/6.14]**.
- 14.3.20 Noise and vibration from CCC has been assessed separately. While the precise method of construction is not known within the works plan area (open trench or trenchless), a reasonable worst case approach has been adopted to consider the impacts of either option in any location. Noise level calculations from CCC have accounted for predicted airborne noise emissions from plant above the surface of the earth, and predicted groundborne noise emissions from drilling activities using the empirical calculation method proposed in BS 5228-2 and presented in **Table 14.3.6**

**Table 14.3.6 Calculation Method for Predicted Noise Emission of Cable Construction**

Activity	Equation	Source Terms
Tunnelling (groundborne noise)	$L_p = 127 - 54 \log r$	$r$ is the slope distance from tunnel grown to receptor

- 14.3.21 Activities associated with trenchless crossings and time sensitive construction activities such as concrete pouring may be carried out during the evening and

night-time in exceptional circumstances. Noise and vibration impacts of these activities have been assessed during these periods, assuming that they could occur concurrently. Any work outside of the core hours would be agreed with the relevant local planning authority prior to carrying out certain activities. It is likely that the only source of airborne noise for trenchless crossing activities during the evening and night-time periods would be the drilling rig referenced in **Table 14.3.5**. It is expected that no open trench activities would occur during the evening or night-time periods.

14.3.22 Construction noise has been calculated for assessment locations within the construction noise Study Area using the methods described in BS 5228-1. Noise levels are compared against LOAEL and SOAEL (**Table 14.3.2**) to determine the magnitude of impact.

14.3.23 Construction vibration is calculated for assessment locations within the construction vibration Study Area using the methods described in BS 5228-2. **Table 14.3.7** presents the relevant calculation methods for vibratory piling, vibratory compaction, and tunnelling, which are relevant to plant presented in **Table 14.3.5**.

**Table 14.3.7: Construction Vibration Calculation Method**

Activity	Equation	Source Terms
Vibratory piling	$v_{res} = \frac{k_v}{x^\delta}$	$k_v = 126$ $x$ is the distance from source to receptor $\delta = 1.3$
Vibratory compaction	$v_{res} = k_s \sqrt{n_d} \left[ \frac{A}{x + L_d} \right]^{1.5}$	$k_s = 143$ $n_d = 2$ $A = 1.72$ $x$ is the distance from source to receptor $L_d = 0.75$
Tunnelling (groundborne vibration)	$v_{res} \leq \frac{180}{x^{1.3}}$	$x$ is the distance from source to receptor

14.3.24 Vibration levels are compared against LOAEL (1.0mm/s) and SOAEL (10mm/s) to determined magnitude of impact.

### Construction Traffic Noise

14.3.25 Table 8-3 in **ES Volume 3, Appendix 13.2: Transport Statement [EN0110020/APP/6.20]** presents the baseline traffic data with and without peak construction traffic. It takes a substantial increase in traffic to result in a perceivable increase in traffic noise (a 25% increase for a change of approximately 1dB). Therefore, this assessment only includes road links with an increase of 5% or more.

14.3.26 Construction traffic noise has initially been calculated using the methodology set out in Calculation of Road Traffic Noise (CRTN). In some cases, the flow of traffic on a given road link falls below the accepted lower limit of validity for CRTN of 1,000 vehicles per day. In these cases, the recognised Noise Advisory Council

(NAC) method<sup>1</sup> for calculation of sound exposure level (SEL) has been adopted and aggregated across the daytime period.

- 14.3.27 Traffic noise levels have been calculated with and without construction traffic for affected road links. The resultant levels have been compared to determine the potential increase in construction traffic noise. Additional site-specific context has been considered in the final designation of impact.

### **Magnitude of Impact**

- 14.3.28 Calculation of noise and vibration levels have been carried out in line with the assumptions, exclusions, and limitations stated in Section 14.4 of **ES Volume 2, Chapter 14: Noise and Vibration [EN0110020/APP/6.14]** and include embedded mitigation presented in Section 14.6 of **ES Volume 2, Chapter 14: Noise and Vibration [EN0110020/APP/6.14]**.

### **Construction Noise**

- 14.3.29 Table 14.2.5 of **ES Volume 3, Appendix 14.2: Baseline Conditions [EN0110020/APP/6.20]** presents the derivation of ABC categories for each assessment location.
- 14.3.30 **Table 14.3.8** presents assessment locations, daytime ABC categories, predicted daytime mitigated construction noise levels during indicative construction periods (CP01, CP02, and CP03) and CCC, and the associated magnitudes of impact (determined using **Table 14.3.2**).

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**Table 14.3.8: Modelled Daytime Construction Noise Levels and Magnitude of Impact**

AL ID	Daytime ABC Category	Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>				Magnitude of Impact <sup>1</sup>			
		CP01	CP02	CP03	CCC	CP01	CP02	CP03	CCC
AL001	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL002	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL003	65 (A)	58	58	59	N/A	Negligible	Negligible	Negligible	N/A
AL004 is outside of the construction noise Study Area and therefore excluded from the assessment.									
AL005	65 (A)	59	61	61	N/A	Negligible	Minor	Minor	N/A
AL006	65 (A)	59	62	62	57	Negligible	Minor	Minor	Negligible
AL007	65 (A)	62	65	65	67	Minor	Minor	Minor	Moderate
AL008 and AL009 are outside of the construction noise Study Area and therefore excluded from the assessment.									
AL010	65 (A)	59	61	61	N/A	Negligible	Minor	Minor	N/A
AL011	65 (A)	58	63	63	57	Negligible	Minor	Minor	Negligible
AL012	65 (A)	59	62	62	N/A	Negligible	Minor	Minor	N/A
AL013	65 (A)	60	63	63	63	Negligible	Minor	Minor	Minor
AL014	65 (A)	70	75	75	70	Moderate	Moderate	Moderate	Moderate
AL015	65 (A)	70	71	71	N/A	Moderate	Moderate	Moderate	N/A
AL016 and AL017 are outside of the construction noise Study Area and therefore excluded from the assessment.									
AL018	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL019	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL020 is outside of the construction noise Study Area and therefore excluded from the assessment.									
AL021	65 (A)	59	64	64	66	Negligible	Minor	Minor	Moderate
AL022	65 (A)	59	63	63	63	Negligible	Minor	Minor	Minor
AL023	65 (A)	59	62	62	56	Negligible	Minor	Minor	Negligible

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AL ID	Daytime ABC Category	Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>				Magnitude of Impact <sup>1</sup>			
		CP01	CP02	CP03	CCC	CP01	CP02	CP03	CCC
AL024	65 (A)	58	59	59	N/A	Negligible	Negligible	Negligible	N/A
AL025	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL026	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL027	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL028	65 (A)	59	69	69	67	Negligible	Moderate	Moderate	Moderate
AL029	65 (A)	57	62	62	70	Negligible	Minor	Minor	Moderate
AL030 is outside of the construction noise Study Area and therefore excluded from the assessment.									
AL031	65 (A)	56	61	61	61	Negligible	Minor	Minor	Minor
AL032	70 (B)	60	71	71	67	Negligible	Moderate	Moderate	Minor
AL033	70 (B)	59	62	62	65	Negligible	Negligible	Negligible	Negligible
AL034	65 (A)	57	61	61	N/A	Negligible	Minor	Minor	N/A
AL035	65 (A)	61	62	63	N/A	Minor	Minor	Minor	N/A
AL036 is outside of the construction noise Study Area and therefore excluded from the assessment.									
AL037	65 (A)	60	64	64	55	Negligible	Minor	Minor	Negligible
AL038	65 (A)	60	61	62	N/A	Negligible	Minor	Minor	N/A
AL039	65 (A)	68	67	68	N/A	Moderate	Moderate	Moderate	N/A
AL040	65 (A)	57	62	63	N/A	Negligible	Minor	Minor	N/A
AL041	70 (B)	N/A	N/A	N/A	58	N/A	N/A	N/A	Negligible
AL042	65 (A)	75	75	75	N/A	Moderate	Moderate	Moderate	N/A
AL043	65 (A)	59	59	59	N/A	Negligible	Negligible	Negligible	N/A
AL044 is outside of the construction noise Study Area and therefore excluded from the assessment.									
AL045	65 (A)	59	59	59	N/A	Negligible	Negligible	Negligible	N/A
AL046	65 (A)	59	59	59	N/A	Negligible	Negligible	Negligible	N/A

## ENVIRONMENTAL STATEMENT

AL ID	Daytime ABC Category	Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>				Magnitude of Impact <sup>1</sup>			
		CP01	CP02	CP03	CCC	CP01	CP02	CP03	CCC
AL047	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL048	70 (B)	74	74	74	N/A	Moderate	Moderate	Moderate	N/A
AL049	70 (B)	68	75	75	71	Minor	Moderate	Moderate	Moderate
AL050	70 (B)	71	73	73	74	Moderate	Moderate	Moderate	Moderate
AL051	70 (B)	63	66	66	63	Negligible	Minor	Minor	Negligible
AL052	70 (B)	60	64	65	58	Negligible	Negligible	Negligible	Negligible
AL053	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL054	65 (A)	59	61	61	57	Negligible	Minor	Minor	Negligible
AL055 and AL056 are outside of the construction noise Study Area and therefore excluded from the assessment.									
AL057	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL058	65 (A)	74	74	74	N/A	Moderate	Moderate	Moderate	N/A
AL059	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL060	65 (A)	59	59	59	N/A	Negligible	Negligible	Negligible	N/A
AL061 to AL064 are outside of the construction noise Study Area and therefore excluded from the assessment.									
AL065	70 (B)	60	71	71	70	Negligible	Moderate	Moderate	Minor
AL066	70 (B)	60	63	64	60	Negligible	Negligible	Negligible	Negligible
AL067	70 (B)	N/A	N/A	N/A	63	N/A	N/A	N/A	Negligible
AL068	70 (B)	70	71	71	73	Minor	Moderate	Moderate	Moderate
AL069	70 (B)	63	64	64	63	Negligible	Negligible	Negligible	Negligible
AL070 to AL077 are outside of the construction noise Study Area and therefore excluded from the assessment.									
AL078	65 (A)	59	61	61	70	Negligible	Minor	Minor	Moderate
AL079	65 (A)	59	61	61	N/A	Negligible	Minor	Minor	N/A
AL080 and AL081 are outside of the construction noise Study Area and therefore excluded from the assessment.									

## ENVIRONMENTAL STATEMENT

AL ID	Daytime ABC Category	Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>				Magnitude of Impact <sup>1</sup>			
		CP01	CP02	CP03	CCC	CP01	CP02	CP03	CCC
AL082	65 (A)	59	59	60	N/A	Negligible	Negligible	Negligible	N/A
AL083	65 (A)	56	56	57	N/A	Negligible	Negligible	Negligible	N/A
AL084	65 (A)	60	60	61	N/A	Negligible	Negligible	Minor	N/A
AL085	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL086	65 (A)	68	68	68	N/A	Moderate	Moderate	Moderate	N/A
AL087	65 (A)	59	59	59	N/A	Negligible	Negligible	Negligible	N/A
AL088	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL089 and AL090 are outside of the construction noise Study Area and therefore excluded from the assessment.									
AL091	65 (A)	58	59	59	56	Negligible	Negligible	Negligible	Negligible
AL092	65 (A)	59	61	61	64	Negligible	Minor	Minor	Minor
AL093	65 (A)	59	61	61	59	Negligible	Minor	Minor	Negligible
AL094	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL095	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL096	65 (A)	55	57	57	N/A	Negligible	Negligible	Negligible	N/A
AL097 is outside of the construction noise Study Area and therefore excluded from the assessment.									
AL098	65 (A)	60	61	62	N/A	Negligible	Minor	Minor	N/A
AL099	65 (A)	59	60	60	N/A	Negligible	Negligible	Negligible	N/A
AL100	70 (B)	59	64	64	56	Negligible	Negligible	Negligible	Negligible
AL101	65 (A)	59	68	68	66	Negligible	Moderate	Moderate	Moderate
AL102	65 (A)	59	61	61	N/A	Negligible	Minor	Minor	N/A
AL103	65 (A)	67	67	67	70	Moderate	Moderate	Moderate	Moderate
AL104 to AL110 are outside of the construction noise Study Area and therefore excluded from the assessment.									
AL111	65 (A)	N/A	N/A	N/A	55	N/A	N/A	N/A	Negligible

## ENVIRONMENTAL STATEMENT

AL ID	Daytime ABC Category	Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>				Magnitude of Impact <sup>1</sup>			
		CP01	CP02	CP03	CCC	CP01	CP02	CP03	CCC
AL112 to AL114 are outside of the construction noise Study Area and therefore excluded from the assessment.									
AL115	70 (B)	N/A	N/A	N/A	63	N/A	N/A	N/A	Negligible
AL116	70 (B)	N/A	N/A	N/A	68	N/A	N/A	N/A	Minor
AL117	65 (A)	N/A	N/A	N/A	65	N/A	N/A	N/A	Minor
AL118	70 (B)	N/A	N/A	N/A	73	N/A	N/A	N/A	Moderate
AL119	65 (A)	N/A	N/A	N/A	73	N/A	N/A	N/A	Moderate
AL120	65 (A)	N/A	N/A	N/A	72	N/A	N/A	N/A	Moderate
AL121	65 (A)	N/A	N/A	N/A	61	N/A	N/A	N/A	Minor
AL122	70 (B)	N/A	N/A	N/A	84	N/A	N/A	N/A	Major
AL123	70 (B)	N/A	N/A	N/A	84	N/A	N/A	N/A	Major
AL124	70 (B)	N/A	N/A	N/A	84	N/A	N/A	N/A	Major
AL125	65 (A)	N/A	N/A	N/A	79	N/A	N/A	N/A	Major
AL126	65 (A)	N/A	N/A	N/A	84	N/A	N/A	N/A	Major
AL127	65 (A)	N/A	N/A	N/A	67	N/A	N/A	N/A	Moderate
AL128	65 (A)	N/A	N/A	N/A	70	N/A	N/A	N/A	Moderate
AL129	65 (A)	N/A	N/A	N/A	65	N/A	N/A	N/A	Minor
AL130	65 (A)	N/A	N/A	N/A	70	N/A	N/A	N/A	Moderate
AL131	70 (B)	N/A	N/A	N/A	72	N/A	N/A	N/A	Moderate
AL132	70 (B)	N/A	N/A	N/A	67	N/A	N/A	N/A	Minor
AL133	70 (B)	N/A	N/A	N/A	73	N/A	N/A	N/A	Moderate
AL134	70 (B)	N/A	N/A	N/A	68	N/A	N/A	N/A	Minor
AL135	65 (A)	N/A	N/A	N/A	63	N/A	N/A	N/A	Minor
AL136	65 (A)	67	67	67	70	Negligible	Negligible	Negligible	Moderate

## ENVIRONMENTAL STATEMENT

AL ID	Daytime ABC Category	Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>				Magnitude of Impact <sup>1</sup>			
		CP01	CP02	CP03	CCC	CP01	CP02	CP03	CCC
AL137	65 (A)	N/A	N/A	N/A	64	N/A	N/A	N/A	Minor
AL138	65 (A)	74	74	74	71	Negligible	Negligible	Negligible	Moderate
AL139	65 (A)	63	63	63	64	Negligible	Negligible	Negligible	Minor
AL140	65 (A)	N/A	N/A	N/A	59	N/A	N/A	N/A	Negligible
AL141	65 (A)	N/A	N/A	N/A	62	N/A	N/A	N/A	Minor
AL142	65 (A)	N/A	N/A	N/A	63	N/A	N/A	N/A	Minor
AL143	65 (A)	N/A	N/A	N/A	67	N/A	N/A	N/A	Moderate
AL144	70 (B)	N/A	N/A	N/A	84	N/A	N/A	N/A	Major
AL145	65 (A)	68	68	68	68	Negligible	Negligible	Negligible	Moderate
AL146	65 (A)	74	74	74	70	Negligible	Negligible	Negligible	Moderate

<sup>1</sup>: "N/A" refers to receptor being outside of the Study Area for given noise and vibration producing activity.

- 14.3.31 Table 14.10 of **ES Volume 2, Chapter 14: Noise and Vibration [EN0110020/APP/6.14]** summarises the quantity of impacts for assessment locations on the basis of the worst-case.
- 14.3.32 **Table 14.3.9** presents assessment locations, evening and night-time ABC categories, predicted worst-case evening and night-time mitigated construction noise levels for on-site (all construction periods) and CCC, and the associated magnitudes of impact (determined using **Table 14.3.2**).

**ENVIRONMENTAL STATEMENT**

**Table 14.3.9: Modelled Evening and Night-Time Construction Noise Levels and Magnitude of Impact**

AL ID	ABC Category		Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>		Magnitude of Impact			
	Evening	Night	On-Site Noise (All Periods)	CCC	Site Noise (All Periods)		CCC	
					Evening	Night	Evening	Night
AL001	55 (A)	55 (C)	24	N/A	Negligible	Negligible	N/A	N/A
AL002	55 (A)	55 (C)	24	N/A	Negligible	Negligible	N/A	N/A
AL003	55 (A)	55 (C)	24	N/A	Negligible	Negligible	N/A	N/A
AL004 is outside of the construction noise Study Area and therefore excluded from the assessment.								
AL005	65 (C)	55 (C)	24	N/A	Negligible	Negligible	N/A	N/A
AL006	65 (C)	55 (C)	25	42	Negligible	Negligible	Negligible	Negligible
AL007	55 (A)	50 (B)	25	51	Negligible	Negligible	Minor	Moderate
AL008 and AL009 are outside of the construction noise Study Area and therefore excluded from the assessment.								
AL010	55 (A)	50 (B)	23	N/A	Negligible	Negligible	N/A	N/A
AL011	65 (C)	55 (C)	23	42	Negligible	Negligible	Negligible	Negligible
AL012	65 (C)	55 (C)	26	N/A	Negligible	Negligible	N/A	N/A
AL013	55 (A)	50 (B)	26	47	Negligible	Negligible	Negligible	Minor
AL014	55 (A)	45 (A)	28	43	Negligible	Negligible	Negligible	Negligible
AL015	55 (A)	45 (A)	29	N/A	Negligible	Negligible	N/A	N/A
AL016 and AL017 are outside of the construction noise Study Area and therefore excluded from the assessment.								
AL018	55 (A)	50 (B)	28	N/A	Negligible	Negligible	N/A	N/A
AL019	65 (C)	55 (C)	28	N/A	Negligible	Negligible	N/A	N/A
AL020 is outside of the construction noise Study Area and therefore excluded from the assessment.								
AL021	60 (B)	55 (C)	32	51	Negligible	Negligible	Negligible	Minor
AL022	60 (B)	55 (C)	32	48	Negligible	Negligible	Negligible	Negligible

## ENVIRONMENTAL STATEMENT

AL ID	ABC Category		Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>		Magnitude of Impact			
			On-Site Noise (All Periods)	CCC	Site Noise (All Periods)		CCC	
	Evening	Night			Evening	Night	Evening	Night
AL023	55 (A)	55 (C)	32	41	Negligible	Negligible	Negligible	Negligible
AL024	55 (A)	50 (B)	33	N/A	Negligible	Negligible	N/A	N/A
AL025	55 (A)	50 (B)	34	N/A	Negligible	Negligible	N/A	N/A
AL026	55 (A)	50 (B)	36	N/A	Negligible	Negligible	N/A	N/A
AL027	55 (A)	50 (B)	38	N/A	Negligible	Negligible	N/A	N/A
AL028	55 (A)	55 (C)	40	52	Negligible	Negligible	Minor	Minor
AL029	60 (B)	55 (C)	42	52	Negligible	Negligible	Negligible	Minor
AL030 is outside of the construction noise Study Area and therefore excluded from the assessment.								
AL031	55 (A)	55 (C)	31	46	Negligible	Negligible	Negligible	Negligible
AL032	65 (C)	55 (C)	48	52	Negligible	Negligible	Negligible	Minor
AL033	65 (C)	55 (C)	46	50	Negligible	Negligible	Negligible	Negligible
AL034	55 (A)	55 (C)	51	N/A	Minor	Minor	N/A	N/A
AL035	55 (A)	50 (B)	53	N/A	Minor	Moderate	N/A	N/A
AL036 is outside of the construction noise Study Area and therefore excluded from the assessment.								
AL037	60 (B)	55 (C)	53	40	Negligible	Minor	Negligible	Negligible
AL038	55 (A)	50 (B)	52	N/A	Minor	Moderate	N/A	N/A
AL039	60 (B)	55 (C)	43	N/A	Negligible	Negligible	N/A	N/A
AL040	60 (B)	55 (C)	49	N/A	Negligible	Negligible	N/A	N/A
AL041	65 (C)	55 (C)	N/A	43	N/A	N/A	Negligible	Negligible
AL042	60 (B)	55 (C)	39	N/A	Negligible	Negligible	N/A	N/A
AL043	60 (B)	55 (C)	37	N/A	Negligible	Negligible	N/A	N/A

## ENVIRONMENTAL STATEMENT

AL ID	ABC Category		Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>		Magnitude of Impact			
			On-Site Noise (All Periods)	CCC	Site Noise (All Periods)		CCC	
	Evening	Night			Evening	Night	Evening	Night
AL044 is outside of the construction noise Study Area and therefore excluded from the assessment.								
AL045	60 (B)	55 (C)	36	N/A	Negligible	Negligible	N/A	N/A
AL046	60 (B)	55 (C)	36	N/A	Negligible	Negligible	N/A	N/A
AL047	60 (B)	55 (C)	37	N/A	Negligible	Negligible	N/A	N/A
AL048	65 (C)	55 (C)	38	N/A	Negligible	Negligible	N/A	N/A
AL049	65 (C)	55 (C)	42	52	Negligible	Negligible	Negligible	Minor
AL050	65 (C)	55 (C)	42	52	Negligible	Negligible	Negligible	Minor
AL051	65 (C)	55 (C)	45	51	Negligible	Negligible	Negligible	Minor
AL052	65 (C)	55 (C)	48	43	Negligible	Negligible	Negligible	Negligible
AL053	55 (A)	55 (C)	39	N/A	Negligible	Negligible	N/A	N/A
AL054	65 (C)	55 (C)	25	42	Negligible	Negligible	Negligible	Negligible
AL055 and AL056 are outside of the construction noise Study Area and therefore excluded from the assessment.								
AL057	55 (A)	55 (C)	38	N/A	Negligible	Negligible	N/A	N/A
AL058	55 (A)	55 (C)	38	N/A	Negligible	Negligible	N/A	N/A
AL059	55 (A)	55 (C)	38	N/A	Negligible	Negligible	N/A	N/A
AL060	55 (A)	55 (C)	35	N/A	Negligible	Negligible	N/A	N/A
AL061 to AL064 are outside of the construction noise Study Area and therefore excluded from the assessment.								
AL065	65 (C)	55 (C)	54	52	Negligible	Minor	Negligible	Minor
AL066	65 (C)	55 (C)	54	45	Negligible	Minor	Negligible	Negligible
AL067	65 (C)	55 (C)	N/A	48	N/A	N/A	Negligible	Negligible
AL068	65 (C)	55 (C)	N/A	58	N/A	N/A	Negligible	Major

## ENVIRONMENTAL STATEMENT

AL ID	ABC Category		Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>		Magnitude of Impact			
			On-Site Noise (All Periods)	CCC	Site Noise (All Periods)		CCC	
	Evening	Night			Evening	Night	Evening	Night
AL069	65 (C)	55 (C)	38	42	Negligible	Negligible	Negligible	Negligible
AL070 to AL077 are outside of the construction noise Study Area and therefore excluded from the assessment.								
AL078	55 (A)	50 (B)	39	52	Negligible	Negligible	Minor	Moderate
AL079	55 (A)	50 (B)	43	N/A	Negligible	Negligible	N/A	N/A
AL080 and AL081 are outside of the construction noise Study Area and therefore excluded from the assessment.								
AL082	55 (A)	50 (B)	41	N/A	Negligible	Negligible	N/A	N/A
AL083	55 (A)	50 (B)	39	N/A	Negligible	Negligible	N/A	N/A
AL084	55 (A)	50 (B)	45	N/A	Negligible	Negligible	N/A	N/A
AL085	55 (A)	50 (B)	45	N/A	Negligible	Negligible	N/A	N/A
AL086	55 (A)	50 (B)	39	N/A	Negligible	Negligible	N/A	N/A
AL087	55 (A)	50 (B)	39	N/A	Negligible	Negligible	N/A	N/A
AL088	55 (A)	50 (B)	42	N/A	Negligible	Negligible	N/A	N/A
AL089 and AL090 are outside of the construction noise Study Area and therefore excluded from the assessment.								
AL091	55 (A)	45 (A)	33	41	Negligible	Negligible	Negligible	Minor
AL092	55 (A)	55 (C)	38	49	Negligible	Negligible	Negligible	Negligible
AL093	55 (A)	55 (C)	39	44	Negligible	Negligible	Negligible	Negligible
AL094	55 (A)	55 (C)	39	N/A	Negligible	Negligible	N/A	N/A
AL095	55 (A)	55 (C)	38	N/A	Negligible	Negligible	N/A	N/A
AL096	55 (A)	55 (C)	36	N/A	Negligible	Negligible	N/A	N/A
AL097 are outside of the construction noise Study Area and therefore excluded from the assessment.								
AL098	55 (A)	50 (B)	53	N/A	Minor	Moderate	N/A	N/A

## ENVIRONMENTAL STATEMENT

AL ID	ABC Category		Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>		Magnitude of Impact			
			On-Site Noise (All Periods)	CCC	Site Noise (All Periods)		CCC	
	Evening	Night			Evening	Night	Evening	Night
AL099	55 (A)	55 (C)	40	N/A	Negligible	Negligible	N/A	N/A
AL100	65 (C)	55 (C)	31	41	Negligible	Negligible	Negligible	Negligible
AL101	55 (A)	45 (A)	33	51	Negligible	Negligible	Minor	Moderate
AL102	55 (A)	45 (A)	33	N/A	Negligible	Negligible	N/A	N/A
AL103	55 (A)	45 (A)	N/A	52	N/A	N/A	Minor	Moderate
AL104 to AL110 are outside of the construction noise Study Area and therefore excluded from the assessment.								
AL111	55 (A)	55 (C)	N/A	40	N/A	N/A	Negligible	Negligible
AL112 to AL114 are outside of the construction noise Study Area and therefore excluded from the assessment.								
AL115	65 (C)	55 (C)	N/A	48	N/A	N/A	Negligible	Negligible
AL116	65 (C)	55 (C)	N/A	52	N/A	N/A	Negligible	Minor
AL117	55 (A)	45 (A)	N/A	49	N/A	N/A	Negligible	Moderate
AL118	65 (C)	55 (C)	N/A	53	N/A	N/A	Negligible	Minor
AL119	55 (A)	45 (A)	N/A	54	N/A	N/A	Minor	Moderate
AL120	55 (A)	45 (A)	N/A	52	N/A	N/A	Minor	Moderate
AL121	55 (A)	45 (A)	N/A	46	N/A	N/A	Negligible	Moderate
AL122	65 (C)	55 (C)	N/A	52	N/A	N/A	Negligible	Minor
AL123	65 (C)	55 (C)	N/A	52	N/A	N/A	Negligible	Minor
AL124	65 (C)	55 (C)	N/A	52	N/A	N/A	Negligible	Minor
AL125	55 (A)	45 (A)	N/A	52	N/A	N/A	Minor	Moderate
AL126	55 (A)	45 (A)	N/A	52	N/A	N/A	Minor	Moderate
AL127	55 (A)	45 (A)	N/A	52	N/A	N/A	Minor	Moderate

## ENVIRONMENTAL STATEMENT

AL ID	ABC Category		Modelled Construction Façade Noise Level, $L_{Aeq,T}$ dB <sup>1</sup>		Magnitude of Impact			
			On-Site Noise (All Periods)	CCC	Site Noise (All Periods)		CCC	
	Evening	Night			Evening	Night	Evening	Night
AL128	55 (A)	45 (A)	N/A	52	N/A	N/A	Minor	Moderate
AL129	55 (A)	45 (A)	N/A	50	N/A	N/A	Negligible	Moderate
AL130	55 (A)	45 (A)	N/A	52	N/A	N/A	Minor	Moderate
AL131	65 (C)	55 (C)	N/A	52	N/A	N/A	Negligible	Minor
AL132	65 (C)	55 (C)	N/A	52	N/A	N/A	Negligible	Minor
AL133	65 (C)	55 (C)	N/A	53	N/A	N/A	Negligible	Minor
AL134	65 (C)	55 (C)	N/A	52	N/A	N/A	Negligible	Minor
AL135	60 (B)	55 (C)	N/A	48	N/A	N/A	Negligible	Negligible
AL136	55 (A)	45 (A)	N/A	52	N/A	N/A	Minor	Moderate
AL137	55 (A)	45 (A)	N/A	49	N/A	N/A	Negligible	Moderate
AL138	55 (A)	45 (A)	N/A	50	N/A	N/A	Negligible	Moderate
AL139	55 (A)	45 (A)	N/A	43	N/A	N/A	Negligible	Minor
AL140	55 (A)	45 (A)	N/A	44	N/A	N/A	Negligible	Minor
AL141	55 (A)	45 (A)	N/A	47	N/A	N/A	Negligible	Moderate
AL142	65 (C)	55 (C)	N/A	48	N/A	N/A	Negligible	Negligible
AL143	65 (C)	55 (C)	N/A	52	N/A	N/A	Negligible	Minor
AL144	65 (C)	55 (C)	N/A	52	N/A	N/A	Negligible	Minor
AL145	55 (A)	45 (A)	N/A	39	N/A	N/A	Negligible	Negligible
AL146	55 (A)	45 (A)	N/A	39	N/A	N/A	Negligible	Negligible

<sup>1</sup>. "N/A" refers to receptor being outside of the Study Area for given noise and vibration producing activity.

14.3.33 Table 14.10 of **ES Volume 2, Chapter 14: Noise and Vibration [EN0110020/APP/6.14]** summarises the worst-case impacts presented in **Table 14.3.9**.

### **Construction Vibration**

14.3.34 **Table 14.3.10** presents the worst-case construction vibration levels for all assessment locations within the construction vibration Study Area. Magnitudes of impact have also been derived based on the criteria set out in **Table 14.3.3**.

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**Table 14.3.10: Modelled Construction Vibration Levels and Magnitude of Impact**

AL ID	Modelled Construction Vibration Level, PPVmm/s <sup>1</sup>			Magnitude of Impact		
	On-Site Vibratory Piling	On-Site Vibratory Compaction	CCC Drilling	On-Site Vibratory Piling	On-Site Vibratory Compaction	CCC Drilling
AL001	0.0	0.5	N/A	Negligible	Minor	N/A
AL002	0.0	0.8	N/A	Negligible	Minor	N/A
AL003 and AL004 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL005	0.0	2.0	N/A	Negligible	Moderate	N/A
AL006	0.4	4.8	N/A	Minor	Moderate	N/A
AL007 to AL011 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL012	0.0	1.4	N/A	Negligible	Moderate	N/A
AL013 is outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL014	0.0	4.0	N/A	Negligible	Moderate	N/A
AL015	0.0	4.8	N/A	Negligible	Moderate	N/A
AL016 to AL020 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL021	0.0	4.0	N/A	Negligible	Moderate	N/A
AL022	0.0	3.6	N/A	Negligible	Moderate	N/A
AL023	0.0	0.9	N/A	Negligible	Minor	N/A
AL024 and AL025 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL026	0.7	3.1	N/A	Minor	Moderate	N/A
AL027	0.0	0.5	N/A	Negligible	Minor	N/A
AL028	0.4	0.8	0.6	Minor	Minor	Minor
AL029	N/A	N/A	1.4	N/A	N/A	Moderate
AL030 to AL031 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL032	0.0	1.4	0.9	Negligible	Moderate	Minor

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AL033 and AL034 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL035	0.0	1.1	N/A	Negligible	Moderate	N/A
AL036 is outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL037	0.0	0.7	N/A	Negligible	Minor	N/A
AL038	0.0	0.6	N/A	Negligible	Minor	N/A
AL039	0.5	2.3	N/A	Minor	Moderate	N/A
AL040 and AL041 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL042	0.0	4.8	N/A	Negligible	Moderate	N/A
AL043 to AL046 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL047	0.0	4.8	N/A	Negligible	Moderate	N/A
AL048	0.0	4.8	N/A	Negligible	Moderate	N/A
AL049	1.9	4.8	1.2	Moderate	Moderate	Moderate
AL050	0.0	1.4	1.7	Negligible	Moderate	Moderate
AL051 is outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL052	0.0	4.8	N/A	Negligible	Moderate	N/A
AL053	0.0	0.8	N/A	Negligible	Minor	N/A
AL054 to AL056 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL057	0.6	2.0	N/A	Minor	Moderate	N/A
AL058	1.3	4.8	N/A	Moderate	Moderate	N/A
AL059 to AL064 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL065	0.0	1.7	1.5	Negligible	Moderate	Moderate
AL066 and AL067 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL068	N/A	N/A	1.5	N/A	N/A	Moderate
AL069 to AL077 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL078	N/A	N/A	1.4	N/A	N/A	Moderate

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AL079 to AL081 are outside of the construction vibration Study Area and therefore excluded from the initial assessment.						
AL082	0.0	0.5	N/A	Negligible	Minor	N/A
AL083 is outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL084	2.6	4.8	N/A	Moderate	Moderate	N/A
AL085	0.0	4.2	N/A	Negligible	Moderate	N/A
AL086	0.0	3.3	N/A	Negligible	Moderate	N/A
AL087 is outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL088	0.0	4.8	N/A	Negligible	Moderate	N/A
AL089 to AL091 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL092	0.6	2.3	N/A	Minor	Moderate	N/A
AL093	0.5	2.9	N/A	Minor	Moderate	N/A
AL094 to AL098 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL099	0.4	4.8	N/A	Minor	Moderate	N/A
AL100	0.4	2.0	N/A	Minor	Moderate	N/A
AL101	0.0	0.5	N/A	Negligible	Minor	N/A
AL102 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL103	N/A	N/A	0.7	N/A	N/A	Minor
AL104 to AL115 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL116	N/A	N/A	1.0	N/A	N/A	Minor
AL117 is outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL118	N/A	N/A	2.1	N/A	N/A	Moderate
AL119	N/A	N/A	2.6	N/A	N/A	Moderate
AL120	N/A	N/A	1.3	N/A	N/A	Moderate
AL121 is outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL122	N/A	N/A	9.0	N/A	N/A	Moderate

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AL123	N/A	N/A	9.0	N/A	N/A	Moderate
AL124	N/A	N/A	9.0	N/A	N/A	Moderate
AL125	N/A	N/A	4.9	N/A	N/A	Moderate
AL126	N/A	N/A	9.0	N/A	N/A	Moderate
AL127	N/A	N/A	0.5	N/A	N/A	Minor
AL128	N/A	N/A	1.5	N/A	N/A	Moderate
AL129 is outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL130	N/A	N/A	1.3	N/A	N/A	Moderate
AL131	N/A	N/A	1.9	N/A	N/A	Moderate
AL132	N/A	N/A	0.5	N/A	N/A	Minor
AL133	N/A	N/A	2.2	N/A	N/A	Moderate
AL134	N/A	N/A	1.1	N/A	N/A	Moderate
AL135 is outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL136	N/A	N/A	0.5	N/A	N/A	Minor
AL137 to AL142 are outside of the construction vibration Study Area and therefore excluded from the assessment.						
AL143	N/A	N/A	0.5	N/A	N/A	Minor
AL144	N/A	N/A	9.0	N/A	N/A	Moderate
AL145 and AL146 are outside of the construction vibration Study Area and therefore excluded from the assessment.						

<sup>1</sup>. "N/A" refers to receptor being outside of the Study Area for given noise and vibration producing activity.

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**Table 14.3.11: Modelled Construction Traffic Noise Levels and Magnitude of Impact**

ATC No.	Road Link	Low Traffic Flow (< 1,000 Vehicles per Day)	Calculated Baseline Noise Level Without Construction Traffic, Unit <sup>1</sup> dB	Calculated Baseline Noise Level with Construction Traffic, Unit <sup>1</sup> dB	Change in Baseline Noise Level	Magnitude of Impact
27	Gulthwaite Common Lane	Yes	57.2	57.6	0.4	Negligible
28	Reservoir Road	Yes	57.0	57.2	0.2	Negligible
36	Long Road	No	65.0	65.8	0.8	Negligible
41	Pocket Handkerchief Lane	No	62.9	64.2	1.3	Negligible
68	Loverose Way	Yes	53.8	54.7	0.9	Negligible
72	Slacks Lane	Yes	33.7	42.2	8.5	Moderate
76	Hawk Hill Lane (West)	No	61.0	61.5	0.5	Negligible

<sup>1</sup> L<sub>Aeq,T</sub> or L<sub>A10</sub> depending on whether there is a low traffic flow (< 1,000 vehicles per day)

### Reference List

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<sup>1</sup> A Guide to Measurement and Prediction of the Equivalent Continuous Sound Level Leq – Commissioned by the Noise Advisory Council (NAC), 1978



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