15 Noise & Vibration

15.1 Introduction

15.1.1 This Chapter of the ES has been produced by RPS Consulting Services Ltd. This chapter presents the assessment of the likely significant noise effects resulting from the Proposed Development comprising:

- up to 430 dwellings;
- vehicular, bus, cycle and pedestrian corridor between Mole Road and northern boundary of site, to connect with the proposed Loddon Garden Village spine road;
- New pedestrian and cycle link between Byway ARB03 (Carter's Hill Lane) and Byway ARB08 (Ellis's Hill);
- Comprehensive strategic landscaping and network of multi-functional green and blue infrastructure,
- biodiversity enhancements to achieve at least a net gain of 10%.
- associated utilities, infrastructure, and engineering works

15.1.2 The assessment has been undertaken based on appropriate information on the Proposed Development provided by the applicant and its project team. RPS is a member of the Association of Noise Consultants (ANC), the representative body for acoustics consultancies, having demonstrated the necessary professional and technical competence. The assessment has been undertaken with integrity, objectivity and honesty in accordance with the Code of Conduct of the Institute of Acoustics (IOA) and ethically, professionally and lawfully in accordance with the Code of Ethics of the ANC.

15.1.3 The technical content of this assessment has been provided by RPS personnel, all of whom are corporate (MIOA) or non-corporate, associate members (AMIOA) of the IOA, the UK's professional body for those working in acoustics, noise and vibration. This chapter has been peer reviewed within the RPS team to ensure that it is technically robust and meets the requirements of the company's Quality Management System.

15.1.4 The chapter details the methodology followed, a review of the baseline conditions in the defined study area, and the results of the assessment to establish whether any likely significant noise and vibration effects would arise. The assessment has been carried out in accordance with legislation and industry applicable guidance, of which further details are provided in Appendix 15.1.

15.1.5 An assessment of site suitability, which assesses the effects of the existing environment on the Proposed Development, is provided in Appendix 15.2.

15.1.6 The following Appendices are to be read in conjunction with this Chapter:

- Appendix 15.1 – Legislation and Guidance
- Appendix 15.2 – Site Suitability Assessment
- Appendix 15.3 – Baseline Sound Survey
- Appendix 15.4 – Traffic Data and Assessment

- Appendix 15.5 – Construction Traffic Data and Assessment

15.2 Assessment methodology

Predicting effects

Scoping Exercise

15.2.1 A Scoping Report was submitted to Wokingham Borough Council (WBC) in December 2024. This included the following with regard to Noise and Vibration:

- Legislation and guidance considered
- Assessment methodology
- Proposed Noise Sensitive Receptors (NSRs) to be considered in the assessment
- Proposed baseline noise monitoring locations
- An overview of the baseline noise environment
- Potential impacts and effects.

15.2.2 The Scoping Report was prepared for the wider Loddon Valley Garden Village development and stated that construction noise and vibration, and operational noise, would be considered as part of the ES. It was proposed that an assessment of operational vibration impacts be scoped out.

15.2.3 The following comments were received on 28 February 2025 from Wokingham Borough Council and have been addressed as required within this assessment, which relates specifically to the Newlands Farm parcel.

> *"Noise and Vibration*
>
> *The ES should include a full noise assessment both for construction and post occupation of the proposed development. This should identify measures to mitigate existing and new residents from noise sources.*
>
> *Vibration should also be understood for construction and post occupation and identify sensitive receptors, existing residents and new occupants. The ES should identify and mitigate the impacts of this and have regard to heritage assets.*
>
> *For a proposal of this size, we would always recommend a noise assessment to inform the design and an air quality assessment as recommended by the IAQM."*

Receptor Sensitivity

15.2.4 The sensitivity of each receptor to noise and vibration has been evaluated based on a review of its relative status against the definitions set out in Table 15.1 below, in line with IEMA guidance.

Table 15.1 Value/sensitivity assessment

Receptor value / sensitivity	Receptor type
High	Receptors where noise/vibration may critically affect their function, e.g. hospital operating theatres. For vibration, receptors with highly sensitive processes such as electron microscopes and some micro-electronic manufacturing equipment.
Medium	Receptors where noise may affect their function, e.g. houses, schools, rest homes and hotels. For vibration, receptors with moderately sensitive processes such as laboratories and some micro-electronic manufacturing equipment.
Low	Receptors where noise minimally affects their function, e.g. offices and shops.
Negligible	Receptors where noise negligibly affects their function, e.g. workshops and factories.

Magnitude of Impact

15.2.5 The magnitude of impact has been determined by considering the estimated change resulting from the Proposed Development compared to the baseline conditions. The magnitude of impact criteria differs depending on the scenario being assessed. The criteria for each scenario are set out in the following paragraphs.

Construction Noise

15.2.6 The full quanta and types of construction plant and activities required for the construction of the Proposed Development will not be known until a construction contractor has been appointed. Therefore, a qualitative assessment of the potential significance of noise and vibration effects on noise sensitive receptors (NSRs) during the construction of the Proposed Development has been undertaken. The assessment follows the guidance contained within BS 5228 1:2009+A1:2014[1] (BS 5228 Part 1) and DMRB LA 111[2].

15.2.7 In the context of the assessment methodology adopted for this ES, the sensitivity of NSRs to noise from construction sites is based on the use and/or activity that takes place at the receptor, and the existing levels of ambient noise. Typically, NSRs are less sensitive to construction noise in areas where existing ambient levels are high.

15.2.8 The magnitude of construction noise impacts is based on their levels relative to baseline conditions and the duration over which the impacts occur. Levels of construction noise at an individual NSR will vary throughout the construction of the Proposed Development and depend upon what activities are being carried out and how close they are to the NSR. Whilst accepting that levels may be higher or lower on individual days, the impact magnitudes described in the following tables are, in general, to be interpreted based on the long-term average noise levels.

[1] British Standards Institution. British Standard 5228-1:2009+A1:2014. Code of practice for noise and vibration control on construction and open sites - Part 1: Noise
[2] Highways England. Design Manual for Roads and Bridges. LA 111 Noise and vibration Rev 2. 2020

15.2.9 DMRB LA 111 provides the following guidance for determining the Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL)[3] for construction noise and for determining the magnitude of impacts. These are summarised in Table 15.2 and Table 15.3.

Table 15.2 Construction Time Period – LOAEL and SOAEL

Time Period	LOAEL	SOAEL
Weekdays (07:00 – 19:00 hours) Saturday (07:00 – 13:00 hours)	Baseline sound levels, $L_{Aeq,T}$	Threshold level determined as per BS 5228 Part 1
Evenings (19:00 – 23:00 hours) Saturdays (13:00 – 23:00 hours) Sundays (07:00 – 23:00 hours)		
Night (23:00 – 07:00 hours)		
Weekdays (07:00 – 19:00 hours) Saturday (07:00 – 13:00 hours)		
Evenings (19:00 – 23:00 hours) Saturdays (13:00 – 23:00 hours) Sundays (07:00 – 23:00 hours)		
Night (23:00 – 07:00 hours)		

Table 15.3 Magnitude of impact – Construction Noise

Magnitude	Description
High	$L_{Aeq,T} \geq$ SOAEL + 5 dB
Medium	SOAEL ≤ $L_{Aeq,T}$ < SOAEL + 5 dB
Low	LOAEL ≤ $L_{Aeq,T}$ < SOAEL
Negligible	$L_{Aeq,T} \leq$ LOAEL

Construction Traffic Noise

15.2.10 A temporary change in noise level may occur due to contributions from construction related traffic during construction of the Proposed Development.

15.2.11 DMRB LA 111 has been used to define the methodology to assess any potential impact of construction related traffic and determine its impact.

15.2.12 The change in the Basic Noise Level (BNL) due to the introduction of additional vehicles onto local highways as part of the construction of the Proposed Development has been calculated using the method outlined in the Calculation of Road Traffic Noise[4] (CRTN) which considers:

- the change in traffic flow due to construction traffic;
- vehicle speed; and

[3] Further information on LOAEL and SOAEL is provided in Appendix 15.1
[4] Department of Transport. Calculation of Road Traffic Noise. HMSO. 1988

- the percentage of Heavy Duty Vehicles (HDVs).

15.2.13 The CRTN methodology is suitable only for traffic flows of over 1,000 vehicles per 18-hour day, hereafter referred to as 'standard roads'.

15.2.14 The 18-hour BNL LA10,18h for 'standard roads' is calculated using the linear equation for Chart 3 of CRTN, reproduced in Equation 1 below. This equation is empirically derived and depends upon the traffic flow Q:

Equation 1: $L_{10,18hr} = 29.1 + 10\log_{10} Q$

15.2.15 This BNL is adjusted by a correction C to account for variations in mean traffic speed (V) and the percentage of HDVs (p) using the empirically derived equation in Chart 4 of CRTN, as given by Equation 2 below.

Equation 2: $C = 33\log_{10}\left(V + 40 + \frac{500}{V}\right) + 10\log_{10}\left(1 + \frac{5p}{V}\right) - 68.8$

15.2.16 Where the traffic flow Q is between 1,000 and 4,000 vehicles per day, this level is subject to further correction K, calculated for an assumed slant distance d' = 10 m, using Equation 3:

Equation 3: $K = -16.6\left(\log_{10}\left(\frac{30}{d'}\right)\right)\left(\log_{10}\left(\frac{Q}{4000}\right)\right)$

15.2.17 The table in Section 14.2 of CRTN presents a range of traffic speeds in km/h to be used for different road classifications, and these have been used as appropriate for the assessment of standard roads presented in this Chapter.

15.2.18 The magnitude of impact presented in **Error! Reference source not found.** below has been applied in this assessment. This presents different levels of impact based on the change in construction traffic Basic Noise Level (BNL) $L_{A10,18h}$.

Table 15.4 Magnitude of impact – Construction Traffic Noise

Magnitude	Increase in BNL of closest public road used for construction traffic (dB)
High	BNL ≥ 5
Medium	3 ≤ BNL < 5
Low	1 ≤ BNL < 3
Negligible	BNL < 1

Construction Vibration

15.2.19 A qualitative assessment of the potential significance of vibration effects on NSRs during the construction of the Proposed Development has been undertaken. The assessment follows the guidance of BS 5228 2:2009+A1:2014[5] (BS 5228 Part 2) and DMRB LA111.

15.2.20 As discussed previously, the full quanta and types of construction plant and activities required for the construction of the Proposed Development will not be known until a construction contractor has been appointed. The magnitude of construction vibration impacts is based on the human response to vibration in buildings, measured as Peak Particle Velocity (PPV). The

[5] British Standards Institution. British Standard 5228-1:2009+A1:2014. Code of practice for noise and vibration control on construction and open sites - Part 2: Vibration

following PPV values, as taken from BS 5228 Part 2[4] has been used to determine the significance of any construction vibration effects within this assessment.

Table 15.5 Magnitude of impact – Construction Traffic Noise

Vibration Level, PPV, mm/s	Effect
PPV ≥ 10	Vibration is likely to be intolerable for any more than a very brief exposure to this level in most building environments
1 ≤ PPV < 10	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents.
0.3 ≤ PPV < 1	Vibration might be just perceptible in residential environments.
PPV < 0.3	Vibration might be just perceptible in the most sensitive situations for most vibration frequences associated with construction. At lower frequencies, people are less sensitive to vibration.

15.2.21 DMRB LA 111 provides the following guidance for determining the LOAEL and SOAEL for construction vibration, with reference to BS 5228 Part 2, to determine the magnitude of impacts. There are summarised in Table 15.6 and Table 15.7.

Table 15.6 Construction Time Period – LOAEL and SOAEL

Time Period	LOAEL	SOAEL
All time periods	0.3 mm/s PPV	1.0 mm/s PPV

Table 15.7 Magnitude of impact – Construction Vibration

Magnitude	Description
High	PPV ≥ 10 mm/s
Medium	SOAEL ≤ PPV < 10 mm/s
Low	LOAEL ≤ PPV < SOAEL
Negligible	PPV ≤ LOAEL

Operational Noise

15.2.22 Once constructed, residential developments do not inherently generate any significant noise other than traffic, unless the development includes other significant sources of noise. Only Operational Traffic Noise has therefore been assessed.

Operational Traffic Noise

15.2.23 Vehicle movements to and from the Proposed Development have the potential to generate additional noise at NSRs located in the immediate vicinity of the local road network.

15.2.24 The methodology within DMRB LA111 has been used to assess any potential impact of operational related traffic noise on NSRs. Traffic data has been provided by the appointed transport consultant within the Project Team, to allow this assessment to be undertaken.

15.2.25 DMRB LA111 considers the traffic noise change in the short term and long term. These terms are calculated as follows:

- Short term: Do Minimum Opening Year (DMOY) compared against Do Something Opening Year (DSOY); and
- Long-term: DMOY compared against Do Something Future Year (DSFY)

15.2.26 This potential noise impact has been considered using the calculated road traffic noise levels, without and with the Proposed Development. The magnitude of any change in noise levels at NSRs has been determined in accordance with the criteria in Table 15.8. This replicates Table 3.54a and 3.54b from DMRB LA111.

Table 15.8 Magnitude of Impact – Operational Traffic

Magnitude	Change in Noise Level	
	Short-term	Long-term
High	> 5 dB	> 10 dB
Medium	3.0 – 4.9 dB	5.0 – 9.9 dB
Low	1.0 – 2.9 dB	3.0 – 4.9 dB
Negligible	0.1 – 0.9 dB	0.1 – 2.9 dB

15.2.27 DMRB LA111 also requires the consideration of LOAELs and SOAELs associated with road traffic noise which are set out in Table 15.9 below.

Table 15.9 Traffic noise LOAEL and SOAEL

Time Period	SOAEL	LOAEL
Daytime	68 dB $L_{A10,18h}$ (façade) 63 dB $L_{Aeq,16h}$ (free-field)	55 dB $L_{A10,18h}$ (façade) 50 dB $L_{Aeq,16h}$ (free-field)
Night	55 dB $L_{night,outside}$ (free-field)	40 dB $L_{night,outside}$ (free-field)

15.2.28 The noise assessment for changes in road traffic on the local road network follows guidance of DMRB LA111. The assessment considers the significance of noise level changes using criteria based on the classification of impact and noise levels with respect to the LOAEL and SOAEL as follows:

- a potential significant adverse effect arises for medium or high impacts (i.e. an increase of 3 dB or more in the short-term or 5 dB or more in the long term) where noise levels are above LOAEL; or for low, medium or high impacts (i.e. an increase of 1 dB or more in the short-term or 3 dB or more in the long term) where noise levels are above SOAEL; and
- in all cases professional judgement is used to determine if a significant adverse effect arises that includes consideration of the sources of noise, the causes of the change in

noise levels, the magnitude of the impact and noise levels relative to LOAEL and SOAEL.

15.2.29 Further discussion of LOAELs and SOAELs is provided in Appendix 15.1.

Significance of Effect

15.2.30 The overall significance of effects, detailed in Table 15.10, has been determined taking into account sensitivity and magnitude of impact, as set out above.

Table 15.10 Level of effect

Receptor Sensitivity	Magnitude of Impact			
	High	**Medium**	**Low**	**Negligible**
High	Substantial	Major	Moderate	Negligible
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

15.2.31 A 'Moderate' or greater effect is considered to result in a significant effect, with 'Minor' or 'Negligible' effects considered not significant.

15.2.32 DMRB LA 111 states the following with regard to durations to be considered in the assessment of significant effects associated with construction:

> *'Construction noise [and vibration] and construction traffic noise [and vibration] shall constitute a significant effect where it is determined that a major or moderate magnitude of impact will occur for a duration exceeding:*
>
> *1) 10 or more days in any 15 consecutive days or nights;*
>
> *2) a total number of days exceeding 40 in any 6 consecutive months'*

15.2.33 Due to the scale of the proposed development, these criteria are assumed to be exceeded for all construction activities.

15.2.34 Further comment is provided in Note C of Table B.1 in Annex B of BS 5228 Part 2 which states the following with regard to construction vibration:

> 'Single or infrequent occurrences of these levels do not necessarily correspond to the stated effect in every case. The values are provided to give an initial indication of potential effects, and where these values are routinely measured or expected then an assessment in accordance with BS 6475-1 or -2, and/or other available guidance, might be appropriate to determine whether the time varying exposure is likely to give rise to any degree of adverse comment.'

15.2.35 In line with BS 5228 Part 2, professional judgement has been used to assess whether a significant effect occurs, based on the occurrence of any vibration generating events, to determine if it is significant in line with EIA terminology.

Geographic Scope

Construction excluding traffic

15.2.36 The geographical scope of the construction noise and vibration assessment has been defined based on guidance within DMRB LA 111. Note 1 of paragraph 3.5 of DMRB LA111 states the following regarding construction NSRs:

> *'A study area of 300 m from the closest construction activity is normally sufficient to encompass noise sensitive receptors.'*

15.2.37 Similarly, Note 1 of paragraph 3.29 of DMRB LA111 states the following regarding construction vibration sensitive receptors:

> *'A study area of 100 m from the closest construction activity with the potential to generate vibration is normally sufficient to encompass vibration sensitive receptors.'*

15.2.38 The NSRs selected for the construction noise and vibration assessments are based on their sensitivity in line with Table 15.1, and proximity to the works. The NSRs are representative of the impact at their location, but also that of neighbouring properties. By selecting the closest NSRs, the predicted impacts are typical of the worst affected receptors. Receptors further away will experience an impact lesser to that reported within this assessment.

Construction traffic

15.2.39 In regard to construction traffic, a study area of 50 m from any existing roads that are predicted to be subject to an increase in traffic noise level of at least 1.0 dB as a result of the construction of the Scheme has been adopted, as required by DMRB LA111.

Operational Noise

15.2.40 There is no available guidance to define the study area associated with all operational noise sources within the scope of this assessment. Therefore, in the absence of such guidance, the study area for the assessment of all operational noises has been defined based on guidance within DMRB LA 111, which is specific to operational road traffic noise. Note 1 of paragraph 3.44 states:

> *'An operational study area defined as the following can be sufficient for most projects, but it can be reduced or extended to ensure it is proportionate to the risk of likely significant effects:*
>
> *1) the area within 600 m of new road links or road links physically changed or bypassed by the project;*
>
> *2) the area within 50 m of other road links with potential to experience a short term BNL change of more than 1.0dB(A) as a result of the project.'*

15.2.41 As stated above, the NSRs have been selected based on their proximity to the noise source, with those closest being indicative of the worst-case impact. Those receptors further away will experience a lesser impact to that reported within this assessment.

Temporal Scope

15.2.42 The construction assessment will consider noise and vibration impacts for the whole duration of the construction works. For operation, traffic noise impacts will be considered at the opening year of the first occupation of the Proposed Development (2028), as well as a future year (2040).

For all other operational noise impacts, these will be considered at the opening year, and assumed to have minimal change during the lifetime of the development.

Consultation

15.2.43 No further consultation in addition to the EIA scoping exercise has been undertaken for this assessment.

Assumptions and Limitations

15.2.44 All sound surveys are limited by the instrumentation used to undertake the measurements. Uncertainty may arise as a result of the internal processes within the sound level meter to measure and process the measured data into the relevant noise indices. However, modern sound level meters are precision instruments. The equipment used for the baseline sound survey were Class 1 instruments according to BS EN 61672-1:2003, with a sampling cycle of 100 ms and a minimum measurement range of A-weighted levels between 20 dB and 100 dB. The uncertainty due to fluctuations in temperature and humidity is ≤ 0.5 dB. The accuracy of the equipment used has been monitored via calibration both prior to and upon completion of the survey at each position

15.2.45 Any influence due to human error has been minimised by ensuring that all sound monitoring equipment was installed safely and securely. All measurements were undertaken at height of 1.2 to 1.5 m above local ground level and 3.5 m from other reflective surfaces to minimise interference from reflected sound waves.

15.2.46 At the time of assessment, specific details on construction of the development were unavailable. Therefore, it was not possible to undertake a quantitative construction noise assessment as part of this ES Chapter. With the implementation of mitigation measures, such as those detailed within a Construction Environmental Management Plan, noise and vibration can be suitably controlled to prevent an adverse impact at sensitive receptors.

15.3 Baseline conditions

Current Baseline

Sound Survey

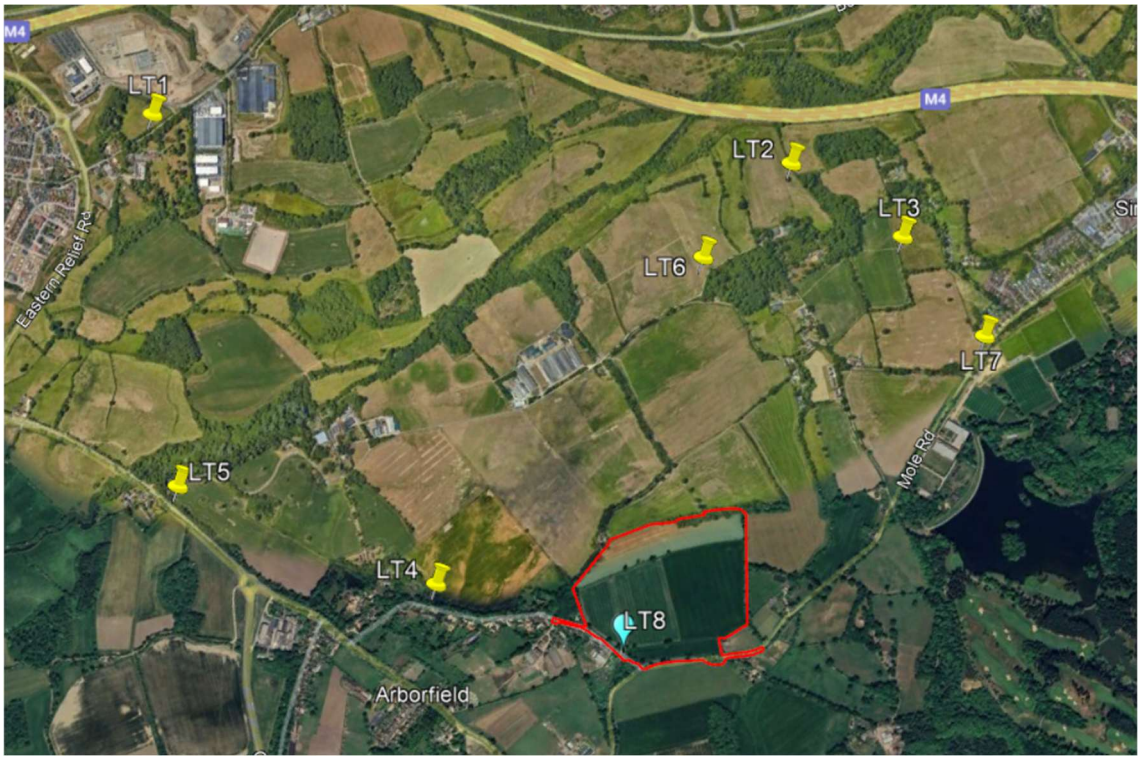
15.3.1 In order to understand the current acoustic environment at both existing and proposed NSRs, a baseline sound survey was undertaken at several locations around the Proposed Development Site.

15.3.2 A long-term unattended sound survey capturing sound levels during the daytime, evening and night-time periods was undertaken at seven locations (LT1 – LT7) between 25th February and 18th March 2025, with a second survey undertaken at an eighth location close to the Site (LT8) between 29th April and 7th May 2025.

15.3.3 The survey at LT8 was intended primarily to collect baseline data to inform a BS4142 assessment of noise emissions from the nearby commercial premises, Oakland Plant Nursery. It was established, however, that this trade-only business is open very infrequently, and only by appointment, with vehicle movements limited to very occasional deliveries (approximately bi-weekly) and there is no noisy plant or other regular source of noise at these premises. It is therefore considered that any noise emitted from these premises is unlikely to result in a significant effect at any of the proposed dwellings.

15.3.4 The measurement locations are presented in Figure 15.1 relative to the indicative redline boundary of the Site.

Figure 15.1 Overview of survey locations



15.3.5 The survey at LT8 was compromised by an equipment failure less than 24 hours after installation. As a result, the data from it is not considered sufficiently representative for the purposes of this assessment and has therefore been discounted. Since its primary purpose was to inform the BS4142 assessment of commercial noise from Oakland Plant Nursery, it does not constitute a significant gap in the data and the assessment remains robust.

15.3.6 There were no significant sources of vibration impacting the nearest noise-sensitive receptors which require consideration. As such, no vibration survey was deemed necessary.

15.3.7 On-site observations and a review of the sound data identified that the acoustic climate is mainly influenced by road traffic noise from the M4, Church Lane, A327 and Mole Road. Other sources of influence include occasional overhead aircraft, wind noise and bird song.

15.3.8 Further details on the baseline sound survey are provided in Appendix 15.3.

Sensitive Receptors

15.3.9 The existing NSRs presented in Figure 15.2 and listed in Table 15.11 have the potential to be impacted by both the construction and operation of the Proposed Development. The NSRs have been selected based on their proximity to the Proposed Development, being the closest and consequently likely to experience the highest impacts. Those receptors co-located with NSRs, or located further away, will experience an impact equal to, or less, than that identified within this Chapter.

15.3.10 The sensitivity of the NSRs has been assigned based on the guidance presented in Table 15.1. The type of NSR has also been defined, based on whether considered in the construction, operation, or construction/operational traffic assessment.

Figure 15.2 Noise sensitive receptor locations relative to Site

Table 15.11 Noise Sensitive Receptors

Receptor	Description	Sensitivity	Type		
			Construction	Operation	Traffic
NSR25	Mole Park Cottage	Medium	✓	✓	✓
NSR26	Sindlesham Road	Medium	✓	✓	✓
NSR27	Mole Bridge Farm	Medium	✓	✓	✓
NSR28	Mole Road	Medium	✓	✓	✓
NSR29	Arborfield Church	Medium	✓	✓	✓
NSR30	St Bartholomew's Church	Medium	✓	✓	✓
NSR31	Carters Hall Lane	Medium	✓	✓	✓

Future Baseline

15.3.11 Similarly to the current baseline, the future baseline noise level is likely to be dominated by noise from road traffic. Traffic data provided by the Project Traffic Consultant has been used to calculate noise levels for the daytime and night-time periods for Current (2025) and Future (2040) years, as indicated in Table 15.12.

Table 15.12 Change in Future Baseline

Link Ref	Name	Current Year 2025		Future Year 2040		Future Baseline Change	
		$L_{A10,18h}$ dB	L_{night} dB	$L_{A10,18h}$ dB	L_{night} dB	$L_{A10,18h}$ dB	L_{night} dB
1	B3270	73	62	73	62	0	0
2	Shinfield Road	67	57	68	57	0	0

Link Ref	Name	Current Year 2025		Future Year 2040		Future Baseline Change	
		$L_{A10,18h}$ dB	L_{night} dB	$L_{A10,18h}$ dB	L_{night} dB	$L_{A10,18h}$ dB	L_{night} dB
3	Lower Earley Way	75	64	76	64	0	0
4	Hollow Lane	64	54	65	55	1	1
5	B3349	65	54	65	55	1	1
6	Arborfield Road	66	56	67	57	1	1
7	Shinfield Eastern Relief Road	71	60	72	61	1	1
8	A327	73	62	74	63	1	0
9	Observer Way	72	61	73	62	1	1
10	Reading Road	63	52	63	53	0	0
11	Church Lane	62	52	63	53	1	1
12	Swallowfield Road	62	52	62	52	0	0
13	Eversley Road	61	51	61	51	0	0
14	School Road	27	21	28	21	1	1
15	Sindlesham Road	68	58	69	58	0	0
16	Mole Road	70	59	71	60	1	0
17	Mill Lane	67	56	67	57	0	0
18	King Street Lane (South)	68	58	69	58	1	0
19	King Street Lane (North)	65	55	65	55	0	0
20	Longdon Road	68	57	68	58	1	1
21	Hatch Farm Way	68	57	68	58	1	1

15.3.12 It is evident from Table 15.12 that there is no predicted increase in baseline noise level greater than 1 dB, which is insignificant in terms of this assessment, and has in any case been built into the long-term operational noise assessment.

15.4 Inherent design mitigation

Construction

15.4.1 Details of measures to protect the environment during the construction of the Proposed Development will be set out in a Construction Environmental Management Plan (CEMP) to be implemented on a phase by phase basis. Measures will address hours of working, noise, vibration, dust, light spill, wheel washing and control of runoff. It is anticipated that the phased implementation of the CEMP will be a condition of the planning permission and that it will be regularly monitored.

15.4.2 The CEMP will include measures to control noise and vibration emissions as far as practical, including:

- Noise and vibration monitoring is undertaken throughout the works, with appropriate trigger levels set to ensure threshold values within BS 5228 Part 1 and Part 2 are not exceeded. These are discussed below;
- All vehicles, plant and equipment working within the site shall be fitted with efficient silencers. Position plant as far away from sensitive receptors as possible;
- Intermittently operating plant will be shut down in the intervening periods between operations. Start-up plant and vehicles sequentially rather than simultaneously. Avoid unnecessary revving of engines;
- Where possible low noise and vibration emitting plant would be selected;
- Were reasonably practicable, low vibration working methods should be employed. Isolate equipment using resilient mountings if vibration levels are deemed high;
- New plant would be used where practical and regular maintenance undertaken, including maintenance related to noise emissions;
- Consideration should be given to use of the most suitable plant, reasonable hours of working for operations which might give rise to perceptible noise and vibrations, and economy and speed of operations;
- Care will be taken when erecting or striking Heras fencing to avoid impact noise from banging steel. All operatives undertaking such activities will be instructed on the importance of handling the fencing to reduce noise to a minimum;
- Use rubber linings in, for example, chutes and dumpers to reduce impact noise;
- Reduce drop heights of materials. Load and unload as far away from sensitive receptors as possible;
- Wherever possible, the use of hydraulic attachments or other means of crushing concrete and hard materials will be used in preference to pneumatic breakers;
- Regular liaison with local residents to inform them of operations on site, including periods of temporary operations when noise levels would exceed those normally defined for the site; and
- Where vehicle reversing alarms are required, they should be designed to cause the lowest practical environmental impact; preferably they should be directional broadband noise emitters or automatically adjusted to ambient noise levels.

15.4.3 These measures are considered to be good/best practice and are accordingly regarded as inherent mitigation. The CEMP will be secured by way of condition attached to the planning permission.

15.4.4 Trigger levels should be based on the criteria in Table 15.2 and Table 15.3, to avoid exceedance of the SOAEL and a potential significant adverse effect. In regard to noise, BS5228 Part 1 Annex E Table E.1 presents a range of threshold values assigned according to the ambient sound level at the receptor, categorised from A to C, with Category A featuring the lowest thresholds for construction noise.

15.4.5 Based on the ambient noise levels measured in proximity to the NSRs, the following Category and associated threshold value has been considered appropriate at each NSR.

Table 15.13 Construction Noise Threshold Values

Receptor	Representative Monitoring Location	Category	Threshold Value (dB $L_{Aeq,16hr}$ facade)
NSR25	LT6	A	65
NSR26	LT6	A	65
NSR27	LT6	A	65
NSR28	LT6	A	65
NSR29	LT4	A	65
NSR30	LT4	A	65
NSR31	LT6	A	65

15.4.6 In regard to vibration, a limit of 1.0 mm/s PPV is considered appropriate at all NSRs to avoid significant adverse effects, in line with the SOAEL set out in Table 15.5.

15.4.7 In regard to proposed NSRs which may be in occupation during other phases of development, a threshold value of 65 dB LAeq,16hr (façade) in regard to noise, and 1.0 mm/s PPV in regard to vibration, is considered appropriate to avoid significant adverse effects.

15.4.8 At times when the threshold value is being approached, the activity taking place will be reviewed and additional control measures will be implemented as above. When the threshold value has been exceeded, work on site will cease and the activity taking place will be reviewed. Control measures in place will be reviewed and works will be amended as necessary, to ensure noise and vibration levels are below the set trigger level.

15.4.9 A procedure for complaints will also be included within the final CEMP:

- The site manager (or equivalent) will record the details of the complaint, in a log held at the site office;
- Any noise or vibration complaint will be immediately investigated, and where necessary, measures will be implemented by the site manager to reduce noise or vibration levels associated with the construction activities responsible for the complaint;
- In the event of a noise or vibration complaint, consideration will be given to the nature of the operations which were taking place at the time. As necessary, the relevant operational procedures which caused the complaint will be reviewed and improvements implemented by the site manager. In addition, the wind speed and direction at the time of the complaint will be noted, as this might have contributed to the level of noise received by the complainant;

- Complaints will be dealt with immediately, and the timeframe for resolving noise or vibration issues will be 24 hours. Works will be ceased where suitable controls cannot be implemented within 24 hours;
- Within 48 hours of receiving the complaint, the complainant will be informed by the Site Manager of the results of the investigation and of what remedial actions have been taken;
- Details of all noise or vibration complaints, and any actions undertaken as a result of investigations, will be recorded by the site manager in the log; and
- If justified noise or vibration complaints persist, the site manager will arrange for independent noise or vibration monitoring to be carried out at the location of the complainant to determine the scale and nature of noise or vibration levels received. The results of the noise or vibration monitoring will be independently evaluated to determine if permitted noise or vibration limits have been breached. Based on the findings of the noise or vibration monitoring results, appropriate actions will be taken by the site manager to reduce noise or vibration emissions as appropriate.

Operation

15.4.10 Based on the outline nature of the Proposed Development, no embedded operational noise mitigation measures have been identified at this stage. The assessment is based on measured levels and the Parameter Plans produced for the Proposed Development.

15.5 Potential effects prior to additional mitigation

Construction Phase

Construction Noise and Vibration Excluding Traffic

15.5.1 Construction works, as required by the CEMP, would be carried out in accordance with Best Practicable Means (BPM) of Section 72 of the Control of Pollution Act[6] (CoPA) to minimise noise and vibration effects. The effects considered below follow guidance provided in BS 5228 Part 1 and Part 2.

15.5.2 Construction activities would be undertaken during typical construction working hours (generally 07.00 to 19.00 hours Monday to Friday, 07.00 to 13.00 hours Saturdays, with no working on Sundays or Bank/Public holidays). Activities would therefore be limited to the weekday daytimes and Saturday mornings. Any exception to this would only be with prior agreement with WBC, likely through the Section 61 process of the CoPA6.

15.5.3 During the construction phase, on-site plant would generally comprise various diesel mechanised construction plant including excavators (with various tool attachments depending upon the task being undertaken), dump trucks, concrete wagons and pumps or an on-site batching plant, mobile cranes, delivery lorries and fork-lift trucks.

15.5.4 Construction noise emissions would vary spatially throughout the programme as work is undertaken in different areas. In general, construction noise emissions would be highest during

[6] The Stationery Office Limited. Control of Pollution Act, Chapter 40, Part III. 1974

initial site clearance and earthworks and decrease as the buildings are constructed. Noise emissions during the fit-out as buildings are completed would be very low as work would be undertaken mostly with hand-tools within the completed structures.

15.5.5 In regard to vibration, possible sources of vibration from construction activities include piling rigs, vibratory rollers and ground improvement tampers. Given the nature of the Proposed Development it is unlikely that piling will be required. However, if piling is required then bored/Continuous-Flight Auger (CFA) piling should be used. Bored/CFA piling does not generate significant vibration emissions and is not significantly nosier than other mechanised construction plant, such as excavators and dump trucks.

15.5.6 In general, construction activities do not generate vibration at levels likely to damage buildings or be disruptive to occupants thereof beyond the boundaries of the development. Whilst some NSRs are located immediately adjacent with the Site boundary it is very unlikely that any significant vibration activity would occur on the immediate boundary of the Site.

15.5.7 For example, surface plant such as cranes, compressors and generators are not recognised as sources of high levels of environmental vibration. Even at a distance of 10 m, 'peak particle velocity' (PPV) levels significantly less than 1 mm/s are generated by such plant. From BS 5228-Part 2, a tracked excavator may generate a PPV of approximately 0.6 mm/s and a heavy lorry on poor road surface a PPV of less than 0.1 mm/s at 10 m distance. These levels are well below limits at which even cosmetic building damage becomes likely. Similarly, whilst vibration from impact piling might result in higher vibration levels at source, vibration levels would be insignificant beyond the immediate development area.

15.5.8 As works will be carried out in line with the CEMP, including the imposing of threshold values not to be exceeded, noise and vibration can be suitable managed as not to cause a significant adverse impact.

15.5.9 With reference to Table 15.1 the sensitivity of all receptors is Medium. With reference to the magnitude of impact, construction noise and vibration would be Negligible to Low, with inherent mitigation in place. Therefore, with reference to Table 15.3 and Table 15.7, the significance of noise and vibration effects during construction would be **Negligible to Minor adverse**. Overall, the effects are considered to be **not significant**.

15.5.10 With reference to the Planning Practice Guidance – Noise (PPGN)[7], construction noise and vibration effects are likely to vary between the NOEL and below SOAEL. This is the expected outcome for a phased construction site of this size; effects are likely to occur for only a proportion of the temporary works, affecting any individual resident for only a fraction of the construction process.

Construction Traffic Noise

15.5.11 Traffic flow prediction data, as presented in Appendix 15.5, has been received from the Project Traffic Consultants and processed using the CRTN methodology to determine the change in Basic Noise Level (BNL) on existing traffic routes due to construction traffic.

15.5.12 The results for each link are summarised in Table 15.13. Full details of the assessment are reported in Appendix 15.5.

[7] Further information regarding Planning Practice Guidance – Noise (PPGN) is provided in Appendix 15.1

15.5.13 With reference to Table 15.1 the sensitivity of all receptors is Medium. With reference to Table 15.14, worst-case predicted short-term impact magnitudes on all links are no higher than Negligible.

15.5.14 Therefore, with reference to Table 15.4, the significance of construction traffic noise effects would be **Negligible**. Overall, the effects are considered to be **not significant**.

Table 15.14 Construction Traffic Noise

Link	WSTM Reference	Reference H - Baseline Traffic Flow 2028 + UoR Development			Reference H - Baseline Traffic Flow 2028 + UoR Development + Construction Traffic Flows			Change in BNL of Closest Public Road used for Construction Traffic (dB)	Impact
		Total Vehicles (AAWT)	HGVs (AAWT)	BNL+C, dB(A)	Total Vehicles (AAWT)	HGVs (AAWT)	BNL+C, dB(A)		
1	103	32779	416	73.5	32837	431	73.5	0.0	No change
2	105	15091	244	68.1	15091	244	68.1	0.0	No change
3	262	27508	151	75.5	27566	166	75.5	0.0	No change
4	264	8897	16	64.7	8897	16	64.7	0.0	No change
5	268	8531	40	65.2	8531	40	65.2	0.0	No change
6	269	8179	39	67.2	8179	39	67.2	0.0	No change
7	310	11443	318	71.2	11443	318	71.2	0.0	No change
8	447	21756	509	74.9	21872	538	74.9	0.0	No change
9	460	15429	429	72.5	15429	429	72.5	0.0	No change
10	461	951	2	62.7	1066	32	63.6	0.9	Negligible
11	10425	5017	20	63.0	5017	20	63.0	0.0	No change
13	10774	4268	37	61.3	4268	37	61.3	0.0	No change
14	10787	283	1	31.6	283	1	31.6	0.0	No change
15	12107	9357	140	69.1	9492	175	69.3	0.2	Negligible
16	12108	11472	132	69.9	11472	132	69.9	0.0	No change
17	12109	9893	163	66.5	9893	163	66.5	0.0	No change
18	12110	19154	239	69.0	19173	244	69.0	0.0	No change
19	12111	9094	92	65.7	9094	92	65.7	0.0	No change
20	12112	15429	301	68.4	15429	301	68.4	0.0	No change
21	12113	11042	242	67.0	11042	242	67.0	0.0	No change

Operational Phase

Operational Traffic Noise

15.5.15 Traffic flow prediction data as presented in Appendix 15.4 has been received from the Project Traffic Consultants and processed using the CRTN methodology to determine the short-term and long-term change in Basic Noise Level (BNL) on existing traffic routes. Other parameters including the effect of the road surfacing on noise levels are assumed to be unchanged between 'with' and 'without' operational traffic scenarios.

15.5.16 The worst-case results from the day or night-time period for each link are summarised in Table 15.5. Full details of the assessment are reported in Appendix 15.4.

Table 15.15 Summary Traffic Noise Results

Link Ref	Name	Short Term Impact			Long Term Impact		
		Level	Max Change dB	Magnitude	Level	Max Change dB	Magnitude
1	B3270	Above SOAEL	0.0	Negligible Adverse	Above SOAEL	0.3	Negligible Adverse
2	Shinfield Road	Above SOAEL	0.0	Negligible Adverse	Above SOAEL	0.4	Negligible Adverse
3	Lower Earley Way	Above SOAEL	0.1	Negligible Adverse	Above SOAEL	0.4	Negligible Adverse
4	Hollow Lane	Between LOAEL and SOAEL	0.0	Negligible Adverse	Between LOAEL and SOAEL	0.7	Negligible Adverse
5	B3349	Between LOAEL and SOAEL	0.0	Negligible Adverse	Between LOAEL and SOAEL	0.6	Negligible Adverse
6	Arborfield Road	Above SOAEL	0.0	Negligible Adverse	Above SOAEL	0.8	Negligible Adverse
7	Shinfield Eastern Relief Road	Above SOAEL	0.1	Negligible Adverse	Above SOAEL	1.1	Negligible Adverse
8	A327	Above SOAEL	0.1	Negligible Adverse	Above SOAEL	0.6	Negligible Adverse
9	Observer Way	Above SOAEL	0.0	Negligible Adverse	Above SOAEL	0.7	Negligible Adverse
10	Reading Road	Between LOAEL and SOAEL	0.2	Negligible Adverse	Between LOAEL and SOAEL	0.2	Negligible Adverse
11	Church Lane	Between LOAEL and SOAEL	0.1	Negligible Adverse	Between LOAEL and SOAEL	0.9	Negligible Adverse
12	Swallowfield Road	Between LOAEL and SOAEL	0.0	Negligible Adverse	Between LOAEL and SOAEL	0.1	Negligible Adverse
13	Eversley Road	Between LOAEL and SOAEL	0.3	Negligible Adverse	Between LOAEL and SOAEL	0.6	Negligible Adverse

Link Ref	Name	Short Term Impact			Long Term Impact		
		Level	Max Change dB	Magnitude	Level	Max Change dB	Magnitude
14	School Road	Below LOAEL	0.0	Negligible Adverse	Below LOAEL	0.6	Negligible Adverse
15	Sindlesham Road	Above SOAEL	0.2	Negligible Adverse	Above SOAEL	0.4	Negligible Adverse
16	Mole Road	Above SOAEL	0.2	Negligible Adverse	Above SOAEL	0.7	Negligible Adverse
17	Mill Lane	Above SOAEL	0.0	Negligible Adverse	Above SOAEL	0.4	Negligible Adverse
18	King Street Lane (South)	Above SOAEL	0.1	Negligible Adverse	Above SOAEL	0.6	Negligible Adverse
19	King Street Lane (North)	Between LOAEL and SOAEL	0.1	Negligible Adverse	Between LOAEL and SOAEL	0.4	Negligible Adverse
20	Longdon Road	Above SOAEL	0.0	Negligible Adverse	Above SOAEL	0.7	Negligible Adverse
21	Hatch Farm Way	Above SOAEL	0.0	Negligible Adverse	Above SOAEL	0.6	Negligible Adverse

15.5.17 With reference to Table 15.1 the sensitivity of all receptors is Medium. With reference to Table 15.5, worst-case predicted impact magnitudes on all links after consideration of LOAEL and SOAEL are no higher than Negligible.

15.5.18 Therefore, with reference to Table 15.8 and Table 15.9, the significance of noise effects due to development led road traffic during operation would be **Negligible**. Overall, the effects are considered to be **not significant**.

15.6 Additional Mitigation

Construction Phase

15.6.1 No further mitigation is deemed necessary during construction of the Proposed Development, provided the measures contained within the CEMP are adhered to.

Operational Phase

15.6.2 No further mitigation is deemed necessary during operation of the Proposed Development.

15.7 Residual effects

Construction Phase

15.7.1 With no additional mitigation proposed, residual effects would be the same as the initial effect.

Operational Phase

15.7.2 With no additional mitigation proposed, residual effects would be the same as the initial effect.

15.8 Implications of Climate Change

15.8.1 In regard to climate change, with rising temperatures there may be a desire for future NSRs to open windows for additional ventilation, due to potential overheating risk. This may lead to increased exposure to high noise levels. It is however acknowledged in line with Overheating: Approved Document O[8], the implications for noise are to be consideration for all future development.

15.8.2 The development will be adequately designed to prevent an overheating risk, which in turn will reduce the likelihood of NSRs exposing themselves to higher noise levels. It can therefore be considered that climate change will have minimal influence when considering both noise and vibration.

[8] HM Government. The Building Regulations 2010. Overheating Approved Document O. Requirement O1: Overheating mitigation. Regulations: 40B

15.9 Cumulative effects

Loddon Valley Garden Village Strategic Development Location

Construction

15.9.1 Should the construction programmes for the Loddon Valley Garden Village Development coincide with the Proposed Development, there is potential for moderate or major impact at NSR29 and NSR30 under very limited conditions, requiring simultaneous groundworks to be carried out in close proximity to these receptors on both sites. However, the duration of such proximate overlapping works is unlikely to be of sufficient duration, as defined in paragraph 15.2.32, to constitute a significant adverse effect.

15.9.2 Provided therefore that appropriate mitigation measures (such as those recommended by the respective CEMPs) are implemented by the developers, the cumulative effects should be 'not significant'. It is also recommended that communication between sites should be carried out at the earliest opportunity, to understand the respective program of works and discuss ways to minimise any cumulative noise impacts.

Operation

15.9.3 Traffic data including predictions for the Loddon Valley Garden Village Strategic Development Location considered within the cumulative assessment were provided by the Project Traffic Consultants as detailed in Appendix 15.4.

15.9.4 The worst-case results from the day- or night-time period for each link are summarised in Table 15.16. Full details of the assessment are reported in Appendix 15.4.

Table 15.16 Summary Cumulative Traffic Noise Results

Link Ref	Name	Short Term Impact			Long Term Impact		
		Level	Max Change dB	Magnitude	Level	Max Change dB	Magnitude
1	B3270	Above SOAEL	0.2	Negligible Adverse	Above SOAEL	1.0	Negligible Adverse
2	Shinfield Road	Above SOAEL	0.2	Negligible Adverse	Above SOAEL	0.9	Negligible Adverse
3	Lower Earley Way	Above SOAEL	0.0	Negligible Adverse	Above SOAEL	-0.3	Negligible Beneficial
4	Hollow Lane	Between LOAEL and SOAEL	0.4	Negligible Adverse	Between LOAEL and SOAEL	0.8	Negligible Adverse
5	B3349	Between LOAEL and SOAEL	0.3	Negligible Adverse	Above SOAEL	1.6	Negligible Adverse
6	Arborfield Road	Above SOAEL	0.7	Negligible Adverse	Above SOAEL	2.2	Negligible Adverse
7	Shinfield Eastern Relief Road	Above SOAEL	0.1	Negligible Adverse	Above SOAEL	1.1	Negligible Adverse

Link Ref	Name	Short Term Impact			Long Term Impact		
		Level	Max Change dB	Magnitude	Level	Max Change dB	Magnitude
8	A327	Above SOAEL	0.9	Negligible Adverse	Above SOAEL	1.4	Negligible Adverse
9	Observer Way	Above SOAEL	-0.2	Negligible Beneficial	Above SOAEL	0.7	Negligible Adverse
10	Reading Road	Between LOAEL and SOAEL	0.1	Negligible Adverse	Between LOAEL and SOAEL	0.1	Negligible Adverse
11	Church Lane	Between LOAEL and SOAEL	0.7	Negligible Adverse	Between LOAEL and SOAEL	0.4	Negligible Adverse
12	Swallowfield Road	Between LOAEL and SOAEL	0.1	Negligible Adverse	Between LOAEL and SOAEL	0.1	Negligible Adverse
13	Eversley Road	Between LOAEL and SOAEL	0.0	Negligible Adverse	Between LOAEL and SOAEL	0.1	Negligible Adverse
14	School Road	Below LOAEL	0.4	Negligible Adverse	Below LOAEL	1.1	Negligible Adverse
15	Sindlesham Road	Above SOAEL	0.3	Negligible Adverse	Above SOAEL	0.7	Negligible Adverse
16	Mole Road	Above SOAEL	-0.4	Negligible Beneficial	Above SOAEL	0.8	Negligible Adverse
17	Mill Lane	Above SOAEL	-0.8	Negligible Beneficial	Above SOAEL	0.0	Negligible Adverse
18	King Street Lane (South)	Above SOAEL	0.2	Negligible Adverse	Above SOAEL	0.3	Negligible Adverse
19	King Street Lane (North)	Between LOAEL and SOAEL	0.3	Negligible Adverse	Between LOAEL and SOAEL	0.4	Negligible Adverse
20	Longdon Road	Above SOAEL	-0.2	Negligible Beneficial	Above SOAEL	0.7	Negligible Adverse
21	Hatch Farm Way	Above SOAEL	-1.3	Low Beneficial	Above SOAEL	0.0	Negligible Adverse

Wider Committed Development

Construction

15.9.5 In the event that the construction programmes for other schemes coincide with the construction programme for the Proposed Development, the most significant issue in relation to noise effects is likely to be the temporary adverse effects caused by the coinciding earthworks during the construction phases. These are unlikely to be of sufficient duration, as defined in paragraph 15.2.32, to constitute a significant effect.

15.9.6 As evidenced from the guidance within BS 5228-1:2009+A1:2014 which scopes only for distances within 300 m of construction activity, developments more than 600 m from the site boundary are considered most unlikely to result in cumulative impacts.

15.9.7 With regard to the above the following developments are considered relevant to the cumulative assessment:

- Land North of Reading Road, Arborfield (Planning Ref. 243099)

15.9.8 The wider committed developments and the Proposed Development will be required to implement BPM, as defined by Section 72 of the Control of Pollution Act (1974), to reduce noise and vibration impacts as far as practically possible. This will include ensuring that for any construction works which are coincident, the appropriate noise limits at the relevant receptors are not exceeded. BPM and details on mitigation to reduce noise and vibration to ensure the limit at the relevant receptor is not exceeded would be detailed within the CEMP for the relevant development. Measures which are to be included within the Proposed Development CEMP include the requirement for the contractors on the relevant projects to liaise at the earliest opportunity, to understand the respective program of works and discuss ways to minimise any cumulative noise impacts.

15.9.9 While there is potential for short-term adverse cumulative effects from simultaneous proximate activities, these are unlikely to be of sufficient duration, as defined in paragraph 15.2.32, to constitute a significant effect.

Operation

15.9.10 Wider Committed Developments considered within the cumulative assessment for the ES are included in the traffic model that was used to inform this Chapter. In addition, the transport assessment implements growth rates applied to existing traffic levels to forecast the future traffic environment. Therefore, this Chapter has taken into account operational phase cumulative effects as part of the above assessment.

15.9.11 With reference to Table 15.1 the sensitivity of all receptors is Medium. With reference to Table 15.16, worst-case predicted impact magnitudes on all links after consideration of LOAEL and SOAEL are no higher than Negligible.

15.9.12 Therefore, with reference to Table 15.8 and Table 15.9, the significance of noise effects due to development led road traffic during operation would be **Negligible**. Overall, the effects are considered to be **not significant**.

15.10 Summary

15.10.1 This Chapter assesses the likely significant noise and vibration effects resulting from the Proposed Development, during both construction and operational phases.

15.10.2 To establish baseline noise levels an unattended noise survey has been carried out.

15.10.3 The potential noise impacts affecting NSRs with regard to construction and operation of the Proposed Development have been considered and have been assessed using appropriate guidance.

Construction Noise and Vibration

15.10.4 During construction, noise and vibration has the potential to cause impacts at nearby NSRs. However, with implementation of mitigation outlined within the CEMP, the likelihood of significant adverse effects can be avoided.

15.10.5 Examples of best practice measures which will be required to avoid significant adverse construction noise impacts are set out in Section 15.4.

Operational Noise

15.10.6 In the absence of any proposed industrial or commercial activity within the Proposed Development, there are **no predicted significant adverse effects** once the project is operational.

Development Generated Road Traffic Noise

15.10.7 The assessment of development generated road traffic noise has confirmed that, on all links provided by the Project Traffic Consultant, there are **no predicted significant adverse effects** from the increase in road traffic.

15.10.8 A summary of the assessment is set out in 15.18 below.

15.11 References

- The Stationery Office Limited. Control of Pollution Act, Chapter 40, Part III. 1974
- Statutory Instruments. No. 227. The Control of Noise (Code of Practice for Construction and Open Sites) (England) Order 2015
- British Standards Institution. British Standard 5228-1:2009+A1:2014. Code of practice for noise and vibration control on construction and open sites - Part 1: Noise
- British Standards Institution. British Standard 5228-1:2009+A1:2014. Code of practice for noise and vibration control on construction and open sites - Part 2: Vibration
- British Standards Institution. British Standard 7445-2:1991 Description and measurement of environmental noise - Part 2: Guide to the acquisition of data pertinent to land use.
- The Stationery Office Limited. Environmental Protection Act, Chapter 43, Part III. 1990
- Statutory Instrument No. 1763. The Noise Insulation Regulations 1975. Statutory Instrument No. 2000. The Noise Insulation (Amendment) Regulations 1988. HMSO. 1975 Amended 1988
- Ministry of Housing, Communities and Local Government. National Planning Policy Framework: HMSO. December 2024
- Department for Environment, Food and Rural Affairs. Noise Policy Statement for England. Defra. 2010
- Wokingham Borough Council. Wokingham Borough Core Strategy. 2010
- Ministry of Housing, Communities and Local Government. National Planning Practice Guidance – Noise. March 2019
- Department of Transport. Calculation of Road Traffic Noise. HMSO. 1988
- Highways England. Design Manual for Roads and Bridges. LA 111 Noise and vibration. 2020
- HM Government. The Building Regulations 2010. Overheating Approved Document O. Requirement O1: Overheating mitigation. Regulations: 40B

15.12 Assessor information

Table 15.17 Assessor information

Chapter	Responsibility	Name	Qualifications	Assessor information
Noise and Vibration	RPS	Lee Whitehall	BSc (Hons) AMIOA	Lee has over eight years' experience undertaking noise and vibration assessments for a variety of developments within the residential, commercial, industrial, waste, mineral and renewable sections, covering both construction and operation. Lee is involved with all aspects of the assessment including noise surveys, data analysis, modelling and calculations, and reporting. Lee have prepared several noise assessments as technical reports or as Chapters for inclusion with Environmental Impact Assessments.
		Jonty Stewart	MSc MIOA FHEA	Jonty has over 25 years' experience in audio and acoustics engineering, including over a decade of Higher Education lecturing shared between the University of Salford and Solent University. A past Chair of the Institute of Acoustics (IOA) Education Committee, he is Chief Examiner for the IOA Certificates of Competence in Building Acoustics Measurement (CCBAM and CCIBAM) and Moderator of IOA Diploma exam papers and assignment specifications. Jonty is a long-term member and also past Chair of the Association of Noise Consultants (ANC) Registration Committee, involved in quality assuring provision of ANC sound insulation testing in England and Wales. He is experienced in data analysis and modelling, as well as in undertaking ES, EIA and DCO assessments.

Table 15.18 Summary of effects

Receptor	Receptor sensitivity	Description of potential impact	Proposed mitigation	Residual effect	Significant / not significant
Construction Phase					
NSRs	Medium	Noise from construction plant/activities	Adherence to a CEMP and good construction practice with regards to noise and vibration.	Negligible to Minor Adverse	Not Significant
NSRs	Medium	Noise from construction traffic	Following the construction traffic data assessment, it is determined that mitigation would not be necessary to protect NSRs from road traffic noise.	Following the construction traffic data assessment, it is determined that mitigation is not required, and therefore residual effects would be the same as the initial effect, Negligible Adverse.	Following the construction traffic data assessment, it is determined that the effect is Not Significant.
Operation Phase					
NSRs	Medium	Noise from operational traffic	No requirement for mitigation identified	Negligible Adverse	Not Significant

15.13 Mitigation commitments Summary

Table 15.19 Summary for Securing Mitigation

Identified receptor	Type and purpose of additional mitigation measure (prevent, reduce, offset, enhance)	Means by which mitigation may be secured (e.g. planning condition / legal agreement)	Delivered by	Auditable by
Construction Phase				
N/A	N/A	N/A	N/A	N/A
Operation Phase				
N/A	N/A	N/A	N/A	N/A