

Growing Baldock

Environmental Statement Volume 1: Text
Chapter 5: Noise and Vibration



October 2025

Urban&Civic



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5.1 INTRODUCTION

5.1.1 This chapter of the ES has been prepared by RPS Consulting UK & Ireland and presents an assessment of the likely significant effects of the Proposed Development with respect to Noise and Vibration. Mitigation measures are identified, where appropriate, to avoid, reduce or offset any significant adverse effects identified and/or enhance likely beneficial effects. Taking into account the mitigation measures, the nature and significance of the likely residual effects are reported.

5.1.2 This chapter has been prepared by an associate at RPS. The associate holds a Bachelor's degree with Honours in Acoustics from the University of Salford and is a corporate member of the Institute of Acoustics. They have 20 years of experience in acoustics, working on numerous medium and large-scale residential, industrial, and commercial developments, with experience of EIA and DCO applications.

5.1.3 This chapter is supported by the following technical appendices:

- Appendix 5.1: Policy and Guidance;
- Appendix 5.2: Baseline Noise Data and Detailed Methodology;
- Appendix 5.3: Supporting Data; and
- Appendix 5.4: Noise Impact Assessment;
- Appendix 5.5: Supporting Figures.

5.1.4 The description of development comprises:

Outline planning application with all matters reserved except for means of highway access into the development from the A505/Royston Road, North Road and Clothall Road for: up to 3,200 homes, up to 16ha of employment, waste and leisure infrastructure, a mixed use local centre, up to 1 secondary school, up to 2 x primary schools, up to 1 SEND school, health hub, green infrastructure (including parks, formal sports provision, play, habitat areas, informal open space and structural planting), internal street network, access junctions and railway crossing, public transport infrastructure, pedestrian/cycle network (including PRow diversions, active travel routes, mobility hubs and crossing of the railway), utilities and drainage infrastructure (including diversions of existing and provision of new infrastructure, pumping stations, sustainable drainage, primary substations, rising main/strategic sewer and renewable energy infrastructure), ground remodelling/earthworks and any necessary demolitions.

5.2 RELEVANT POLICY

- 5.2.1 This assessment has been undertaken in accordance with current planning and technical guidance, and best practice methods.

National Policy

- 5.2.2 The following National Planning Policy is relevant to the Proposed Development; further details are provided in **Appendix 5.1**.

- National Planning Policy Framework, 2024 (NPPF).
- Planning Practice Guidance – Noise, 2019 (PPG).
- Noise Policy Statement, 2010 (NPSE).

National Planning Policy Framework

- 5.2.3 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2024) sets out the Government's planning policies for England and how these are expected to be applied. The emphasis of the Framework is to allow development to proceed where it can be demonstrated to be sustainable.

- 5.2.4 In relation to noise, Paragraph 187 of the NPPF states:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:...

preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability...'

- 5.2.5 Paragraph 198 of the NPPF states:

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

mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason...'

5.2.6 Paragraph 200 of the NPPF states:

'Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.'

Planning Practice Guidance

5.2.7 Details of the relevant sections of Planning Practice Guidance – Noise (PPG-Noise) are included in **Appendix 5.1**.

Local Policy

North Hertfordshire Local Plan (2022)

5.2.8 The North Herts Local Plan does not set out specific guidance in terms of noise. However, noise is identified as a factor to be addressed a number of the sites which have been allocated for development in the Local Plan.

5.2.9 For site BA2, the Local Plan states;

"Appropriate mitigation measures for noise associated with the A505 to potentially include insulation and orientation of living spaces"

5.2.10 For site BA3, the Local Plan states;

"Appropriate mitigation measures for noise associated with the A505 to include:

appropriate insulation and orientation of living spaces; and

maintaining or limited re-profiling of the existing bunding towards the east of the site with no housing permitted on or beyond its (revised) alignment"

5.2.11 For site BA10, the Local Plan states;

"Provide adequate mitigation measures for noise associated with the railway line and for any potential employment activity in relation to Clothall Common"

5.2.12 In addition, paragraph 9.19 of the Local Plan states;

"9.19 All development has the potential to have an adverse impact on its neighbours, in a wide variety of ways. Such harm may arise from traffic generation, parking, loss of

daylight and sunlight, noise, overlooking, pollution (including light pollution) and dominance as well as other issues.”

5.2.13 This will be considered as part of the assessment.

Other Relevant Policy, Legislation & Guidance

5.2.14 The following guidance is relevant to the Proposed Development; further details are provided in **Appendix 5.1**.

- Institute of Environmental Management & Assessment (IEMA) – Guidelines for Environmental Noise Impact Assessment;
- British Standard 5228-1:2009+A1:2014. Code of practice for noise and vibration control on construction and open sites – Part 1: Noise (BS:5228);
- British Standard 5228-1:2009+A1:2014. Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration. (BS:5228);
- British Standard 7445-2:1991 Description and measurement of environmental noise – Part 2: Guide to the acquisition of data pertinent to land use. (BS:7445-2:1991);
- Department of Transport. Calculation of Road Traffic Noise. 1988 (CRTN);
- Highways Agency. Design Manual for Roads and Bridges. LA 111: Noise and Vibration - May 2020 (LA 111);
- British Standard 8233:2014 Guidance on sound insulation and noise reduction for buildings (BS:8233:2014);
- British Standard 4142:2014+A1:2019. Methods for rating and assessing industrial and commercial sound (BS:4142:2104+A1:2019);
- AVO - Acoustics Ventilation and Overheating - Residential Design Guide, 2020 (AVO); and
- Building Bulletin 93 Acoustic Design of Schools (BB93).

5.3 ASSESSMENT METHODOLOGY

5.3.1 This assessment has been undertaken in accordance with current planning and technical guidance, and best practice methods. Details of the assessment methodology and significance criteria are set-out below.

Scope

5.3.2 This chapter considers the following potential impacts in terms of noise and vibration:

- The construction and demolition phase noise impact on existing sensitive human receptors;
- The construction phase vibration impact on existing sensitive human receptors;
- The operational phase noise impact of development led road traffic on existing sensitive human receptors;
- The operational phase noise impact of proposed sources of noise on existing sensitive human receptors.

5.3.3 In addition, it is key to consider the potential effect of existing and proposed sources of sound on the proposed receptors, e.g. the residential dwellings, and the proposed schools. This consideration is outside of the scope of the EIA regulations, and has therefore been addressed separately in **Appendix 5.4**.

BA3 - Option Assessment

5.3.4 Three development options are being considered for the BA3 parcel to provide the necessary future secondary and SEND education requirement following the completion of the Proposed Development.

5.3.5 The three options are as follows:

- *Option 1* – Knights Templar expansion and relocation to BA3.
Relocation and expansion (up to 12FE) of Knights Templar school to BA3. BA3 to accommodate SEND school and secondary school.
- *Option 2* – Knights Templar expansion.
Expansion of Knights Templar on existing site (up to 10FE). BA3 to accommodate SEND school and residential.
- *Option 3* – Additional secondary school on BA3.
Provision of additional secondary school (up to 5FE) on BA3. BA3 to accommodate SEND school, secondary school and residential.

5.3.6 This chapter only considers each of the three options insofar as they relate to development within the OPA boundary. Any works on the existing KTS site would be subject to a separate planning application.

- 5.3.7 Each of the options include the construction of buildings, the installation of services (electricity, water, etc.) and the construction of site access roads. As a result, the construction phase works for any of the three options are likely to result in similar effects at sensitive receptors. Subsequently, the construction phase noise and vibration assessment does not include an assessment of each individual option. Instead, the construction phase assessment considers the reasonable worst case of the 3 options.
- 5.3.8 Any one of the three options could result in a different operational noise effect at receptors. It is regarded that option 1 would be the highest generator of traffic movements, and this option has therefore been used for the assessment of development led traffic at receptors.

Items Scoped Out of the Assessment

- 5.3.9 The impact of vibration from the development on existing sensitive human receptors is considered very unlikely to cause a significant adverse effect. Therefore, operational phase vibration has been scoped out of the assessment.

Data Sources

Baseline Survey

- 5.3.10 This assessment is supported by a baseline noise survey which has been undertaken at the Site, and nearby noise sources which lie outside of the site boundary, but within the study area. The key aspects of the baseline study are presented in this chapter. The detailed baseline methodology is set out in more detail in **Appendix 5.2**.

Consultation

- 5.3.11 The following consultation has been undertaken with North Herts Council (NHC). The consultation is set out in **Table 5.1** below.

Table 5.1 - Consultation

Date	Consultee	Issued Raised	How / Where addressed?
12th February 2025	NHDC Environmental Health Department	Consultation on Baldock Urban Extension Noise Survey Methodology	Scoping Opinion confirmed proposed methodology

- 5.3.12 The noise and vibration assessment follows current technical and planning guidance, and best practice methods.

Assessment Approach

- 5.3.13 This assessment considers the potential adverse effects on noise sensitive receptors in terms of noise and vibration during the construction phase, and noise during the operational phase, during the daytime and night-time.
- 5.3.14 It considers the following potential impacts:
- The construction and demolition phase noise impact on existing noise sensitive receptors surrounding the Site;
 - The construction phase vibration impact on existing noise sensitive receptors surrounding the Site;
 - The operational phase noise impact of development led road traffic on existing sensitive receptors located on roads leading to and from the development;
 - The operational phase noise impact of proposed sources of noise on existing and proposed sensitive receptors which are adjacent to the site boundary including the proposed waster uses.

Significance Criteria

- 5.3.15 Likely significant effects have been identified as those from the construction and operational phases of the scheme. The likelihood of an effect has been determined through baseline collection, calculation and computational noise modelling.
- 5.3.16 The scale attributed to each effect has been determined based on the sensitivity of the receptor and magnitude of impact arising as a result of the Proposed Development. Professional judgement and experience have been drawn upon to assess the scale and significance of any effect.
- 5.3.17 It is noted that the evaluation of significance is often subjective, with best practice guidelines provided by the Institute of Sustainability and Environmental Professional (ISEP) (formerly IEMA) identifying that 'there is often not a single, definitive, correct answer as to whether an impact is significant or not. Significance is influenced by the values of the individual, how the changes to the environment affect them and whether they have a stake in the project or not'.
- 5.3.18 As a result, significance of environmental impacts has been determined through the application of professional judgement and relevant topic specific guidance where it is available. As a general rule, the significance of effects on sensitive receptors has been determined using the following:
- Extent of impact;
 - Magnitude of impact;
 - Duration of impact;
 - Frequency of impact;
 - Reversibility of impact; and,

- Nature of impact (direct or indirect).

5.3.19 The magnitude of impact to a receptor has been determined by considering the estimated deviation from baseline conditions both before, and, if required, after mitigation.

5.3.20 The scale used for determining the magnitude of an impact for construction phase noise is shown in **Table 5.2**, and references BS5228.

Table 5.2 - Magnitude of Impacts - Construction Phase Noise Impact

Magnitude	Typical Descriptors
Large	Noise levels exceed the Assessment Category threshold level for the duration of the construction works.
Moderate	Noise levels exceed the Assessment Category threshold level for periods of more than one month, but for significantly less than the whole duration of the construction works.
Small	Noise levels exceed the Assessment Category threshold level for periods of less than one month.
Negligible	Noise levels do not exceed the Assessment Category threshold level during any period.

5.3.21 The scale used for determining the magnitude of an impact for construction phase vibration is shown in **Table 5.3**, and references BS5228.

Table 5.3 - Magnitude of Impacts – Construction Phase Vibration Impact

Magnitude	Typical Descriptors
Large	> 10mm per sec. Vibration likely to be intolerable for more than brief exposure. Approaching the level at which cosmetic damage may occur in light structures
Moderate	5mm – 10mm per second. Tolerance less likely even with prior warning and explanation.
Small	1mm – 5mm per second. Complaints are likely but can be tolerated if prior warning and explanation given.
Negligible	<1mm per second. Below level at which complaints are likely.

5.3.22 The scale used for determining the magnitude of an impact for operational phase noise is shown in **Table 5.4**.

Table 5.4 - Magnitude of Impacts – Operational Phase Noise

Magnitude	Typical Descriptors
Large	Impact resulting in a considerable change in baseline environmental conditions predicted either to cause statutory objectives to be significantly exceeded or to result in severe undesirable/desirable consequences on the receiving environment.
Moderate	Impact resulting in a discernible change in baseline environmental conditions predicted either to cause statutory objectives to be marginally exceeded or to result in

	undesirable/desirable consequences on the receiving environment.
Small	Impact resulting in a discernible change in baseline environmental conditions with undesirable/desirable conditions that can be tolerated.
Negligible	No discernible change in the baseline environmental conditions, within margins of error of measurement.

- 5.3.23 The scale used for determining the magnitude of an impact for operational phase road traffic noise is shown in **Table 5.5** and references LA111.

Table 5.5 - Magnitude of Impacts – Operational Phase Road Traffic Noise

Magnitude	Typical Descriptors
Large	Change in traffic noise level >5dB (LA10,18hr)
Moderate	Change in traffic noise level between 3dB and <5dB (LA10,18hr)
Small	Change in traffic noise level between 1dB and <3dB (LA10,18hr)
Negligible	Change in traffic noise level <1dB (LA10,18hr)

- 5.3.24 The scale used for determining the magnitude of an impact for operational phase industrial noise is shown in **Table 5.6** and references BS4142.

Table 5.6 - Magnitude of Impacts – Operational Phase Industrial Noise

Magnitude	Typical Descriptors
Large	Where the Rating Sound exceeds the Background Sound by >15dB.
Moderate	Where the Rating Sound exceeds the Background Sound by around 10dB.
Small	Where the Rating Sound exceeds the Background Sound by around 5dB.
Negligible	Where the Rating Sound exceeds the Background Sound by 0dB or less.

- 5.3.25 The sensitivity of the receptors is shown in **Table 5.7** below.

Table 5.7 – Sensitivity of Receptors

Sensitivity	Typical Descriptors
High	Receptors of high environmental value or rarity, that have a low capacity for change without fundamentally altering its nature of character or are of national value. (e.g. schools & care homes)
Medium	Receptors of environmental value or rarity, that have a moderate capacity for change without fundamentally altering its nature or character or are of County importance. (e.g. residential dwellings)
Low	Receptors of low environmental value or rarity, that are tolerant of change without fundamental alteration to its nature or character or are of local or site value. (e.g. offices, public rights of ways etc.)

Negligible	Receptors of little or no environmental value or rarity, that are tolerant of change or resistant to it.
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5.3.26 The assessment of significance in this report has been based on the matrix presented in **Table 5.8**.

Table 5.8 - Significance of Effects

Magnitude	Sensitivity			
	High	Medium	Low	Negligible
Large	Major (Significant)	Major (Significant)	Moderate (Not Significant)	Minor (Not Significant)
Moderate	Major (Significant)	Moderate (Not Significant)	Minor (Not Significant)	Negligible (Not Significant)
Small	Moderate (Not Significant)	Minor (Not Significant)	Minor (Not Significant)	Negligible (Not Significant)
Negligible	Minor (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)

5.3.27 The level of significance set out in **Table 5.8** is defined as:

- Major – these effects are likely to be important considerations at a regional or district scale but, if adverse, are considered to be very important considerations and are likely to be material in the decision-making process and are significant;
- Moderate – these effects, if adverse, while important at a local scale, are not likely to be key decision-making issues. Nevertheless, the cumulative effect of such issues may lead to an increase in the overall effects on a particular area or on a particular resource and are not significant;
- Minor – these effects may be raised as local issues but are unlikely to be of importance in the decision-making process. Nevertheless, they are of relevance in the detailed design of the project and are not significant; and,
- Negligible – effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error and are not significant.

Study Area

5.3.28 The study area for the Proposed Development has been identified as being up to 300m from the boundary of the Proposed Development Site. Following a desktop review of the Site, this study area is considered by RPS to be appropriate to identify any existing receptors which could potentially experience an adverse noise and vibration effect from the Proposed Development.

- 5.3.29 Enlarging this area would not benefit the assessment and could over complicate and confuse the methodology.

Uncertainties and Limitations

- 5.3.30 In order to reduce the level of uncertainty within the assessment the following steps have been taken.
- The background noise measurement locations have been selected to be representative of the background noise level at receptors.
 - The distance between the source and nearest receptors has been measured from scale plans showing the locations of each building.
 - Background noise measurements were undertaken during suitable weather conditions.
 - The results of each measurement period have been reported to the nearest 0.1dB.
 - Noise measurements were made using Class 1 integrating sound level meters.
- 5.3.31 As the traffic flow information for the construction phase of the Proposed Development is not available at this stage, it is not possible to undertake a quantitative assessment of the impact of these additional vehicles at receptor locations. Forecasting of construction traffic is difficult at this stage as the level of construction traffic will be dictated by the future build programme, which will be governed by market forces in the housing market.
- 5.3.32 At this stage, detailed information regarding the nature and timescales of activities likely to take place during the earthworks and construction phase are not known. The contractor undertaking the enabling and construction works has not yet been appointed. Many of these unknown details will be resolved in due course once a contractor has been appointed.

5.4 BASELINE CONDITIONS

5.4.1 This section details the current baseline environment at the Site.

The Current Baseline

5.4.2 The current baseline conditions at the development site have been established using available mapping and aerial photography. This process has been carried out to establish the surrounding noise and vibration sensitive receptors. In addition, surrounding sources of noise which could adversely affect the proposed receptors have been identified; this is outside of the EIA process, with details set out in **Appendix 5.4**.

5.4.3 The methodology for the baseline survey and the results thereof have been set out in full in **Appendix 5.2**, with the key points summarised in this chapter.

Noise Sensitive Receptors

5.4.4 There are noise sensitive receptors surrounding the development site. Those receptors which have been identified as most likely to be affected by noise and/or vibration from the construction and/or operation of the development are set out in **Table 5.9** below and on Figure 5.1 in **Appendix 5.5**.

Table 5.9 – Existing Noise Sensitive Receptors

Receptor	Address	Receptor Type	Distance to Site (m)	Grid Coordinate	Direction from Site
ESR1	1 Ashwell Road, Bygrave, Baldock. SG7 5DT	Residential	40	526106, 235254	East
ESR2	The Firs Kennels and Cattery, Royston Road, Bygrave, Baldock. SG7 6QY	Residential	80	526506, 234798	Central
ESR3	7 Royston Road, Clothall, Baldock. SG7 6SU	Residential	15	525844, 234443	Central
ESR4	Halfway Farm Bygrave Road, Bygrave, Baldock. SG7 5DS	Residential	5	525290, 234774	Central
ESR5	The Barn, Bygrave Road, Bygrave, Baldock. SG7 5DS	Residential	5	525237, 234758	Central
ESR6	6 Bygrave Road, Bygrave,	Residential	0	525211, 234748	Central

Receptor	Address	Receptor Type	Distance to Site (m)	Grid Coordinate	Direction from Site
	Baldock. SG7 5DS				
ESR7	Freeland Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	Residential	0	525127, 234660	Central
ESR8	Dairy Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	Residential	0	525053, 234610	Central
ESR9A (Existing)	Greenleas, Bygrave Road, Bygrave, Baldock. SG7 5DS	Residential	5	524994, 234618	Central
ESR9B (New)					
ESR9C (New)					
ESR10	67 Bygrave Road, Clothall Common, Baldock. SG7 5DB	Residential	15	524672, 234416	West
ESR11	2 North Road, Clothall Common, Baldock. SG7 5BX	Residential	25	524450, 234366	West
ESR12	Templars Cross Lodge, North Road, Bygrave, Baldock. SG7 5DN	Residential	15	524238, 234640	West
ESR13	Black Horse Farm, North Road, Bygrave, Baldock. SG7 5DW	Residential	5	524196, 234870	West
ESR14	11 Station Road, Clothall Common, Baldock. SG7 5BU	Residential	100	524485, 234235	West
ESR15	5 Station Road, Clothall Common, Baldock. SG7 5BU	Residential	170	524520, 234191	West
ESR16	Imperial Place, Station Road, Clothall Common,	Residential	180	524574, 234163	West

Receptor	Address	Receptor Type	Distance to Site (m)	Grid Coordinate	Direction from Site
	Baldock. SG7 5FE				
ESR17	Clothall Corner, Baldock. SG7 6FN	Residential	35	525177, 233531	South
ESR18	45 Clothall Road, Clothall, Baldock. SG7 6RB	Residential	5	525292, 233453	South
ESR19	Clothall, Baldock. SG7 6RB	Residential	5	525527, 233281	South
ESR20	Homestead, Clothall, Baldock. SG7 6RB	Residential	100	525628, 233201	South
ESR21	South Lodge Mews, South Road, Clothall Common, Baldock. SG7 6DT	Residential	240	524864, 233339	West
ESR22	Heath Hall, High Street, Clothall Common, Baldock. SG7 6BP	Residential	265	524850, 233381	West
ESR23	41 High Street, Clothall Common, Baldock. SG7 6BG	Residential	255	524631, 233684	West
ESR24	The Old Town Hall, High Street, Clothall Common, Baldock. SG7 6AR	Residential	380	524459, 233886	West
ESR25	1 Whitehorse Street, Clothall Common, Baldock. SG7 5AD	Residential	380	524453, 233912	West
ESR26	75 Mansfield Road, Jubilee Industrial Centre, Baldock. SG7 6ED	Residential	650	524321, 233454	West

5.4.5 Other receptors may be affected by noise/vibration from the Proposed Development; however, any effect would be equal to or less than at receptors identified in **Table 5.9**.

Baseline Noise Survey

- 5.4.6 In order to establish baseline sound conditions around the development site, an unattended baseline sound survey has been undertaken. The survey commenced at 10:00 hours on Wednesday 27th March and concluded at 12:30 hours on Tuesday 2nd April 2024. The results of this survey form the basis of the assessment of the potential noise impact of the development in EIA terms.
- 5.4.7 The purpose of the noise measurements was to capture the baseline sound levels at the development site, and at the surrounding noise sensitive receptors.
- 5.4.8 Continuous noise measurements were undertaken at five locations described in full below, and shown on **Figure 5.2** in **Appendix 5.5**:
- LT1 – Free-field measurement position at a height of 1.5m, on soft ground, on the western boundary of the Proposed Development, approximately 10m from the centre of North Road (A507);
 - LT2 – Free-field measurement position at a height of 1.5 m, on soft ground, located within the proposed BA1 development site, approximately 10 m from the local railway network;
 - LT3 – Free-field measurement position at a height of 1.5 m, on soft ground, approximately 20m north from the centre of Royston Road (B656);
 - LT4 – Free-field measurement position at a height of 1.5 m, on soft ground, approximately 10m southwest from the centre of Clothall Road (A507); and
 - LT5 – Free-field measurement position at a height of 1.5 m, on soft ground, on the western boundary of the Proposed Development, approximately 20m from the centre of A505 dual carriageway.
- 5.4.9 Short-term noise measurements were undertaken at two locations, identified as 'ST1' and 'ST2' described in full below:
- ST1 - Free-field measurement position at a height of 1.5 m, on soft ground, approximately 20m west from the edge of A1(M) motorway, for the purpose of capturing road traffic noise (RTN) from the A1(M).
 - ST2 - Free-field measurement position at a height of 1.5 m, on soft ground, approximately 7.5m from the edge of Ashwell Road, for the purpose of capturing background noise levels in the area for use in construction noise calculations.
- 5.4.10 The day- and night-time levels measured at each position are presented in **Table 5.10** below.

Table 5.10 – Summary of Baseline Sound Level Data

Monitoring Location	Daytime (07:00 – 23:00)		Night-time (23:00 – 07:00)		
	Ambient Sound Level, dB LAeq	Background Sound Levels, dB LA90	Ambient Sound Level, dB LAeq,T	10th Highest Per Night dB LAFmax	Background Sound Levels, dB LA90
LT1	63	53	57	84	39
LT2	65	49	59	81	38
LT3	62	50	55	75	39
LT4	72	50	65	89	38
LT5	76	67	70	87	37
ST1	70	67	N/A	N/A	N/A
ST2	57	43	N/A	N/A	N/A

- 5.4.11 These measured sound levels have been used in this chapter to assess the potential adverse noise impacts on existing sensitive receptors.
- 5.4.12 Full details of the baseline noise survey and methodology including a graphical presentation of 15-minute time history measurement data are detailed in **Appendix 5.2**.
- 5.4.13 In addition, a further detailed noise measurement survey has been undertaken on the BA3 land parcel. The results of this survey have been used to identify the possible impact of existing noise on the Proposed Development. Details of this survey are also described in **Appendix 5.4**; this aspect of the noise and vibration works is outside of the main EIA assessment.

The Projected Future Baseline

- 5.4.14 The baseline conditions at the Site are currently dominated by noise from road and rail traffic, and general noise from other sources, including pedestrian noise.
- 5.4.15 A doubling of road traffic movements would result in a 3dB increase in road traffic sound. A 3dB increase in sound is considered to be just perceptible. It is considered very unlikely that road traffic flows would double in the coming years, and so any future increase in road traffic noise would be significantly less than 3dB and would therefore be imperceptible.
- 5.4.16 Further, it is considered unlikely that there will be a significant increase to the rail movements on the London to Cambridge railway line running through the BA1 land parcel.

- 5.4.17 Therefore, the future noise and vibration baseline conditions are considered unlikely to vary significantly from those which have been established.

5.5 POTENTIAL EFFECTS

5.5.1 This section of the chapter considers the potential effects associated with the Proposed Development in terms of noise and vibration.

5.5.2 As detailed in this chapter, there are three development options for the BA3 land parcel. These are:

- Option 1 - Up to 12FE secondary school (school sports pitches on adjacent Urban Open Land) and 1 SEND school.
- Option 2 - 1 SEND school and residential.
- Option 3 - Up to 5FE secondary school (school sports pitches on adjacent Urban Open Land), 1 SEND school and residential.

5.5.3 Each of the options include the construction of buildings, the installation of services (electricity, water, etc.) and the construction of site access roads. As a result, the construction phase works for any of the three options are likely to result in similar effects at sensitive receptors. Subsequently, the construction phase noise and vibration assessment does not include an assessment of each individual option. Instead, the construction phase assessment considers the reasonable worst case of the 3 options.

5.5.4 Any one of the three options could result in a different operational noise effect at receptors. It is regarded that option 1 would be the highest generator of traffic movements, and this option has been used for the assessment of development led traffic at receptors.

Construction Stage**Construction Phase Noise Effects**

5.5.5 The activities associated with the earthworks and construction phase of the Proposed Development have the potential to generate noise and create an impact on the surrounding area. Construction noise can have effects on the surrounding neighbourhood. The effects are varied and are complicated further by the nature of the site works, which will be characterised by mobile noise sources that will change location throughout the construction period. The duration of construction works is also an important consideration. Higher noise levels may be acceptable if it is known that the levels will occur for a limited period.

5.5.6 During the earthworks and construction phase, any work carried out at the Site are likely to generate noise that may propagate beyond the boundary of the Site. As previously stated, detailed information regarding the nature and timescales of activities likely to take place during the earthworks and construction phase are not known at this stage. Activities on the Site that could give rise to construction related noise impacts include (but are not limited to) the following:

- Site preparation (e.g. ground excavation, levelling of ground, trenching, trench filling, unloading and levelling of hardcore and compacting filling).
- Construction of the Proposed Development, including piling, the creation of access roads, fabrication processes (e.g. planing, sanding, routing, cutting, drilling and laying foundations).
- Construction of the bridge crossing over the railway line for the link road. (e.g. ground excavation, piling, and standard construction works)

5.5.7 Residents generally understand that there will be some noise when construction is underway and identify that issues tend to occur where work starts early, finishes late or takes place on Saturday afternoon, Sundays or Bank Holidays.

5.5.8 Based on the ambient noise levels measured during the daytime period, the appropriate category value has been determined for each of the sensitive receptors closest to the site boundary, as detailed in this Chapter. Details of the noise survey carried out at the sensitive receptors is set out in the baseline section of this chapter (and in **Appendix 5.2**). The daytime construction phase noise limits, following the guidance in BS5228 at noise sensitive receptors, are shown in **Table 5.11**.

Table 5.11 – Existing Noise Sensitive Receptors

Receptor	Address	Measured Ambient Sound Level	BS5228 Category	Daytime Construction Noise Limit
ESR1	1 Ashwell Road, Bygrave, Baldock. SG7 5DT	57	A	65
ESR2	The Firs, Royston Road, Bygrave, Baldock. SG7 6QY	62	A	65
ESR3	7 Royston Road, Clothall, Baldock. SG7 6SU	62	A	65
ESR4	Halfway Farm Bygrave Road, Bygrave, Baldock. SG7 5DS	57	A	65
ESR5	The Barn, Bygrave Road, Bygrave, Baldock. SG7 5DS	57	A	65
ESR6	6 Bygrave Road, Bygrave, Baldock. SG7 5DS	57	A	65
ESR7	Freeland Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	57	A	65
ESR8	Dairy Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	57	A	65
ESR9A, B, C	Greenleas, Bygrave Road, Bygrave, Baldock. SG7 5DS	57	A	65

Receptor	Address	Measured Ambient Sound Level	BS5228 Category	Daytime Construction Noise Limit
ESR10	67 Bygrave Road, Clothall Common, Baldock. SG7 5DB	57	A	65
ESR11	2 North Road, Clothall Common, Baldock. SG7 5BX	65	B	70
ESR12	Templars Cross Lodge, North Road, Bygrave, Baldock. SG7 5DN	65	B	70
ESR13	Black Horse Farm, North Road, Bygrave, Baldock. SG7 5DW	65	B	70
ESR14	11 Station Road, Clothall Common, Baldock. SG7 5BU	65	B	70
ESR15	5 Station Road, Clothall Common, Baldock. SG7 5BU	65	B	70
ESR16	Imperial Place, Station Road, Clothall Common, Baldock. SG7 5FE	72	C	75
ESR17	Clothall Corner, Baldock. SG7 6FN	72	C	75
ESR18	45 Clothall Road, Clothall, Baldock. SG7 6RB	72	C	75
ESR19	Clothall, Baldock. SG7 6RB	72	C	75
ESR20	Homestead, Clothall, Baldock. SG7 6RB	72	C	75
ESR21	South Lodge Mews, South Road, Clothall Common, Baldock. SG7 6DT	65	B	70
ESR22	Heath Hall, High Street, Clothall Common, Baldock. SG7 6BP	65	B	70
ESR23	41 High Street, Clothall Common, Baldock. SG7 6BG	65	B	70
ESR24	The Old Town Hall, High Street, Clothall Common, Baldock. SG7 6AR	65	B	70
ESR25	1 Whitehorse Street, Clothall Common, Baldock. SG7 5AD	65	B	70
ESR26	75 Mansfield Road, Jubilee Industrial Centre, Baldock. SG7 6ED	65	B	70

- 5.5.9 The levels of noise received at the receptors closest to the Proposed Development would depend upon the sound power levels of the machines used, the distance to the properties, the presence of screening or reflecting surfaces and the ability of the intervening ground to absorb the propagating noise.
- 5.5.10 The nearest existing noise sensitive receptors to the Proposed Development will vary depending on the phase of the Proposed Development under construction. Given the distances between the construction activities and residential dwellings, noise levels at the existing noise sensitive receptors may occasionally occur above those detailed in **Table 5.11.**
- 5.5.11 When considering existing receptors as having medium sensitivity, the noise arising from the construction phase is likely to have a short-term effect on existing residential properties of Moderate Adverse significance prior to the implementation of mitigation measures. Suitable mitigation measures will, therefore, be identified and implemented to reduce the significance of the effect, as discussed in Section 1.6 of this Chapter.

Construction Phase Vibration Effects

- 5.5.12 It is not possible to mitigate vibration emissions from an open site. It is important therefore to examine the proposed working method to ascertain what, if any, operations would be likely to cause unacceptable levels of vibration at nearby sensitive locations. It is possible that these operations could be modified to reduce their vibration impacts.
- 5.5.13 The nearest sensitive property to the proposed construction works will vary depending upon the part of the Proposed Development under construction. The sensitive receptors could include sensitive premises which become occupied before the completion of the construction phase.
- 5.5.14 As a worst-case scenario, earthworks and construction works may potentially take place at approximately 5m from residential properties. At this distance, it is considered possible that vibration due to the operation of construction machinery will be above the threshold of complaint. However, occurrences such as this would be transient only and for very limited periods during the works (i.e. when activities take place at the site boundaries, or close to proposed dwellings once occupied).
- 5.5.15 In addition to the earthworks and construction works described, it is possible that piling will be required. At this time, the type(s) of piling that would be used at various locations across the Site is not known and it is likely that the contractor responsible for undertaking construction works at the Site would decide the appropriate method of piling required.
- 5.5.16 BS5228-2 recognises that the most common form of vibration associated with piling is the intermittent type derived from conventional driven piling. The intensity of vibration disturbance which may be registered at a receptor will be a function of many factors. These are set out in BS5228-2 and include:

- Energy per blow or cycle;
- Distance between source and receptor;
- Soil structure interaction (i.e. nature of connection between soil and structure being monitored); and
- Construction of structure and location of measuring points (e.g. soil surface, building foundation and internal structural element).

5.5.17 The receptors likely to be affected by piling will vary depending on the phase of the Proposed Development under construction. Once the precise building locations, ground conditions for each location and type(s) of piling are confirmed, vibration levels could be estimated and recommendations for control made as appropriate.

5.5.18 As the responsible contractor has not yet been appointed, detailed information regarding the above is not known and it is not possible to assess the potential impacts of vibration generated by piling.

5.5.19 Therefore, based upon previous experience and when considering existing receptors as having medium sensitivity, the vibration arising from the construction phase is likely to be moderate in the medium-term. Therefore, the construction phase vibration residual effect will be Moderate Adverse (i.e. Not Significant) prior to the implementation of mitigation measures. Suitable mitigation measures (as discussed within Section 1.6 of this Chapter) will, therefore, be identified and implemented to reduce the significance of the effect.

Operational Phase

5.5.20 The operational phase assessment considers the potential effects of each of the three options for BA3 on existing noise sensitive receptors.

Development Led Road Traffic Noise at Existing Sensitive Receptors

5.5.21 The road traffic movements associated with the Proposed Development have the potential to cause an adverse noise effect on the existing noise sensitive receptors surrounding the Site. Any effect is likely to be highest for those receptors which are located close to site access roads, or those directly adjacent to the main roads surrounding the Proposed Development itself.

5.5.22 Subsequently, some of the existing noise sensitive receptors have been identified as those which are most likely to be adversely affected by development led road traffic noise.

5.5.23 The assessment of development led road traffic noise has been undertaken in accordance with CRTN and LA111, and using the impact magnitude criteria set out in **Table 5.5**. The assessment relies upon the predicted traffic data which has been provided by ITP by Haskoning via email on 30th July 2025. The data has been provided as an 18hr AAWT with HGV %, and road speeds.

5.5.24 The data has been provided for the following scenarios:

- Scenario 1 - 2025 Base Year
- Scenario 2 - 2028 Background
- Scenario 3 - 2033 Interim Year (Development traffic in early phases + background traffic growth)
- Scenario 4 - 2040 Background
- Scenario 5 - 2040 future year (full development traffic, no school + background traffic growth)
- Scenario 6 - 2040 future year (full development traffic, with school + background traffic growth)

5.5.25 Scenarios 5 and 6 represent the worst case scenarios for the three options associated with BA3.

5.5.26 This data has been input into the computer noise model SoundPLAN v9.1. The with development scenarios include the proposed dwellings which are associated with the development itself, as these dwellings will screen noise from development roads, when received at the existing dwellings.

5.5.27 The results of the noise model calculations have been used to assess the potential impact at each receptor.

5.5.28 The results of the computer noise model are shown in full in **Appendix 5.3** and summarised below in **Table 5.12**.

Table 5.12 - Development Led Traffic – Impact Assessment

Receptor		Receptor Sensitivity	Highest Change in Road Traffic Noise	Impact Magnitude	Potential Effect	Significant?
ESR1	1 Ashwell Road, Bygrave, Baldock. SG7 5DT	Medium	1.0	Small	Minor	Not Significant
ESR2	The Firs, Royston Road, Bygrave, Baldock. SG7 6QY	Medium	0.1	Negligible	Negligible	Not Significant
ESR3	7 Royston Road, Clothall, Baldock. SG7 6SU	Medium	0.2	Negligible	Negligible	Not Significant
ESR4	Halfway Farm Bygrave Road, Bygrave, Baldock. SG7 5DS	Medium	4.7	Moderate	Moderate	Not Significant

Receptor		Receptor Sensitivity	Highest Change in Road Traffic Noise	Impact Magnitude	Potential Effect	Significant?
ESR5	The Barn, Bygrave Road, Bygrave, Baldock. SG7 5DS	Medium	2.1	Small	Minor	Not Significant
ESR6	6 Bygrave Road, Bygrave, Baldock. SG7 5DS	Medium	2.8	Small	Minor	Not Significant
ESR7	Freeland Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	Medium	1.9	Small	Minor	Not Significant
ESR8	Dairy Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	Medium	1.5	Small	Minor	Not Significant
ESR9A (Existing)	Greenleas, Bygrave Road, Bygrave, Baldock. SG7 5DS	Medium	1.4	Small	Minor	Not Significant
ESR9B (New)		Medium				
ESR9C (New)		Medium				
ESR10	67 Bygrave Road, Clothall Common, Baldock. SG7 5DB	Medium	1.5	Small	Minor	Not Significant
ESR11	2 North Road, Clothall Common, Baldock. SG7 5BX	Medium	-0.6	Negligible	Negligible	Not Significant
ESR12	Templars Cross Lodge, North Road, Bygrave, Baldock. SG7 5DN	Medium	-0.6	Negligible	Negligible	Not Significant
ESR13	Black Horse Farm, North Road, Bygrave, Baldock. SG7 5DW	Medium	-0.6	Negligible	Negligible	Not Significant
ESR14	11 Station Road, Clothall Common, Baldock. SG7 5BU	Medium	-0.6	Negligible	Negligible	Not Significant
ESR15	5 Station Road, Clothall Common,	Medium	-0.7	Negligible	Negligible	Not Significant

Receptor		Receptor Sensitivity	Highest Change in Road Traffic Noise	Impact Magnitude	Potential Effect	Significant?
	Baldock. SG7 5BU					
ESR16	Imperial Place, Station Road, Clothall Common, Baldock. SG7 5FE	Medium	-0.7	Negligible	Negligible	Not Significant
ESR17	Clothall Corner, Baldock. SG7 6FN	Medium	0.7	Negligible	Negligible	Not Significant
ESR18	45 Clothall Road, Clothall, Baldock. SG7 6RB	Medium	-1.4	Negligible	Negligible	Not Significant
ESR19	Clothall, Baldock. SG7 6RB	Medium	-0.1	Negligible	Negligible	Not Significant
ESR20	Homestead, Clothall, Baldock. SG7 6RB	Medium	-0.8	Negligible	Negligible	Not Significant
ESR21	South Lodge Mews, South Road, Clothall Common, Baldock. SG7 6DT	Medium	1.0	Small	Minor	Not Significant
ESR22	Heath Hall, High Street, Clothall Common, Baldock. SG7 6BP	Medium	1.1	Small	Minor	Not Significant
ESR23	41 High Street, Clothall Common, Baldock. SG7 6BG	Medium	0.2	Negligible	Negligible	Not Significant
ESR24	The Old Town Hall, High Street, Clothall Common, Baldock. SG7 6AR	Medium	0.6	Negligible	Negligible	Not Significant
ESR25	1 Whitehorse Street, Clothall Common, Baldock. SG7 5AD	Medium	0.9	Negligible	Negligible	Not Significant
ESR26	75 Mansfield Road, Jubilee Industrial Centre, Baldock. SG7 6ED	Medium	0.4	Negligible	Negligible	Not Significant

- 5.5.29 As described in **Table 5.12** each of the existing noise sensitive receptors has a medium sensitivity, and the impact magnitude is Negligible for all receptors, with the exception of ESR4, where the impact is Moderate Adverse. The potential effect of development led road traffic is an effect which is between Negligible and Moderate, which is Not Significant in EIA terms.

Proposed Sources of Noise, on Existing Noise Sensitive Receptors

- 5.5.30 It is likely that the commercial and educational parts of the development will include some fixed plant and equipment, which could produce noise which has the potential to adversely affect the surrounding existing sensitive receptors.
- 5.5.31 The exact details of this proposed plant will vary depending upon the BA3 option which is taken forward. In addition, BA10 includes commercial premises with waste uses.
- 5.5.32 Details of all proposed plant and equipment, including its location, are not available at this stage. Therefore, without simple measures to implement control, noise from the education and commercial premises could be high.
- 5.5.33 The surrounding existing sensitive receptors are considered to have a medium sensitivity, and when considering the proposed mitigation measures the overall magnitude of the impact of proposed noise sources is large. Subsequently, the effect of proposed sources of noise on existing noise sensitive receptors is Major Adverse, which is Significant in EIA terms.
- 5.5.34 Therefore, noise mitigation measures will be implemented to control commercial noise from the development.

Existing Sources of Noise on Proposed Sensitive Receptors

- 5.5.35 The Proposed Development includes noise sensitive receptors which have the potential to experience an adverse noise effect from existing roads, the London to Cambridge railway line, and the Proposed Development itself. Assessment of this potential effect is important to inform the detailed design and layout at Reserved Matters stage and must be considered to ensure a satisfactory environment for future residents. It is not a significance based assessment like the other subtopics assessed in this ES chapter, traditionally being outside the scope of EIA.
- 5.5.36 Subsequently, a separate assessment has been prepared and included within this application. The assessment is set out in **Appendix 5.4**.

5.6 MITIGATION MEASURES

- 5.6.1 The following section details the proposed noise and vibration mitigation measures for the project.

Construction Stage

Construction Phase Noise Mitigation Measures

- 5.6.2 In order to reduce the potential impact of noise levels generated by the construction phase of the Proposed Development at noise sensitive receptor locations in the immediate vicinity of the Site, mitigation measures will be required. These are included within the Outline Construction Environmental Management Plan and in subsequent detailed CEMPs, which can be controlled through a planning condition at Phase or Reserved Matters Stage.
- 5.6.3 Noisy construction works will be restricted to daytime hours, typically between 0800 and 1800 hours Monday to Friday and 0800 to 1300hrs Saturdays, with no noisy work permitted on Sundays or Bank Holidays.
- 5.6.4 Under Section 60 of the COPA 1974 Act the local authority has the power to serve a notice which could impose requirements as to the way in which works are to be carried out. This could specify times of operation, maximum levels of noise which should be emitted and the type of plant which should or should not be used. This is a common way of enforcing reasonable levels of construction noise.
- 5.6.5 However, it may be preferable for the chosen contractor to obtain prior consent under Section 61 of COPA 1974. Section 61 enables anyone who intends to carry out works to apply to the local authority for consent. Under Section 61 the local authorities and those responsible for construction work have an opportunity to settle any problems relating to the potential noise before work starts.
- 5.6.6 The CEMP will require that best working practice will be implemented during each phase of the earthworks and construction works at the Site. The construction works will follow the guidelines in BS5228-1 and the guidance in BRE 'Controlling particles, vapour and noise pollution from construction sites', Parts 1 to 5, 2003.
- 5.6.7 The following measures will also be included to minimise noise emissions:
- When works are taking place within close proximity to the sensitive receptors identified, the screening of noise sources via the erection of temporary screens will be employed.
 - All machinery will be regularly maintained to control noise emissions, with particular emphasis on lubrication of bearings and the integrity of silencers.
 - Site staff will be made aware that they are working adjacent to a sensitive area and avoid all unnecessary noise due to misuse of tools and equipment, unnecessary shouting and radios.

- As far as possible, the avoidance of two noisy operations occurring simultaneously in close proximity to the same sensitive receptor.
- Adherence to any time limits imposed on noisy works by the local authority.
- Implement set working hours during the week and at weekends.
- Ensure engines are turned off when possible.
- Should earthworks and construction activities need to be carried out during night-time hours, the local authority may include a planning condition that requests advance notice and details of any night working to be provided.

Construction Phase Vibration Mitigation Measures

- 5.6.8 BS5228-2 recognises that the most common form of vibration associated with piling is the intermittent type derived from conventional driven piling. Whilst it is recognised that the piling process will need to be selected on the basis of the strata to be encountered, the loads to be supported and the economics of the system, careful consideration by the appointed Developer(s) will be given to the type of piling to be used in order to minimise the potential for vibration to be generated by any necessary piling.
- 5.6.9 The receptors likely to be affected by piling will vary depending on the phase of the Proposed Development under construction. Once the precise building locations and ground conditions for each location and type(s) of piling are confirmed, vibration levels will be estimated and recommendations for control made as appropriate.
- To keep ground borne vibration to a minimum the following measures (as referred to in BS5228-2) will be put in place and enshrined within the CEMP:
 - Substitution: Where reasonably practicable, plant and or methods of work likely to cause significant levels of vibration at the receptors identified will be replaced by less intrusive plant/methods of working; and
 - Isolation of plant at source: This may prove a viable option where the plant is stationary (e.g. a compressor, generator) and located close to a receptor.
- 5.6.10 There are a number of measures that can be implemented, depending upon the type of piling chosen (e.g. continuous flight auger (CFA) piling produces significantly less vibration than conventional driven piling and, therefore, fewer mitigation measures would be required if CFA piling were chosen as the preferred method). Additionally, the distance between the piling rig and the receptors has a significant bearing upon the likely impact, and the vibration produced by piling is transient and occurs in any one location for only a limited period of time.
- 5.6.11 BS5228-2 indicates that mitigation might include the use of alternative methods, removal of obstructions, provision of cut-off trenches, reduction of energy input per blow, reduction of resistance to penetration, etc. As the construction programme and methodologies become more defined, earthworks and construction vibration will be reviewed and a detailed strategy for control will be devised and implemented.

Operational Stage

Existing Noise Sensitive Receptors

- 5.6.12 Mitigation measures are not required at existing noise sensitive receptors and are not proposed.

Proposed Sensitive Receptors - Residential

- 5.6.13 This impact has not been assessed against EIA regulations.
- 5.6.14 However, the development is located adjacent to a number of noise sources, and will require some mitigation measures so that internal and external noise guideline levels are met.
- 5.6.15 Full details of the operational phase noise mitigation measures are provided in **Appendix 5.4**, and the effects of these mitigation measures are included in this assessment.

Proposed Commercial Premises

- 5.6.16 Mitigation measures may be required to reduce the noise emissions from any fixed plant and equipment which will be required as part of the development (e.g. air source heat pumps, ventilation fans, smoke shaft extracts, etc.).
- 5.6.17 However, there is limited information available for the type and configuration of the fixed plant items and as such a plant noise emission assessment cannot be undertaken. A plant noise emission limit will therefore be set for all fixed plant items associated with the development, operating simultaneously. The noise limit will be based on guidance provided in BS 4142:2014+A1:2019.
- 5.6.18 Based on the noise survey undertaken in March/April 2024, the representative existing background noise level is between 43dB and 67dB LA90 during the daytime and between 37dB and 39dB LA90 during the night-time.
- 5.6.19 The resultant plant noise emissions will therefore be constrained to not exceed the background sound level when assessed at the nearest noise sensitive receptor.

Proposed Schools

- 5.6.20 The proposed areas earmarked for educational uses are located adjacent to a number of noise sources and will require some mitigation measures so that internal and external noise limits in BB93 levels are met.
- 5.6.21 Full details of the operational phase noise mitigation measures are provided in **Appendix 5.4**, and the effects of these mitigation measures are included in this assessment.
- 5.6.22 In addition, mitigation measures may be required to reduce the noise emissions from any fixed plant and equipment which will be required as part of the schools (e.g. ventilation

fans, smoke shaft extracts, etc.). It is also likely that the schools will require goods deliveries during operational hours. Noise from these deliveries has the potential to adversely affect noise sensitive receptors.

- 5.6.23 However, there is limited information available for the type and configuration of the fixed plant items and deliveries, so a detailed commercial noise impact assessment cannot be undertaken. As such a noise limit will be set for the schools, be based on guidance provided in BS 4142:2014+A1:2019.
- 5.6.24 Based on the noise survey undertaken in March/April 2024, the representative existing background noise level is between 43dB and 67dB LA90 during the daytime and between 37dB and 39dB LA90 during the night-time.
- 5.6.25 The resultant plant noise emissions will therefore be constrained to not exceed the background sound level when assessed at the nearest noise sensitive receptor.

5.7 RESIDUAL EFFECTS

- 5.7.1 The potential noise and vibration effects have been reconsidered below following the implementation of the mitigation measures presented in Section 1.6 of this chapter.

Construction Stage

- 5.7.2 When considering existing receptors as having medium sensitivity, the noise arising from the construction phase is likely be minor in the medium-term. Therefore, the construction phase effect will be **Negligible** to **Minor Adverse** on existing residential properties, which is not significant.

- 5.7.3 Based upon previous experience and when considering existing receptors as having medium sensitivity, the vibration arising from the construction phase is likely be minor in the medium-term. Therefore, the construction phase vibration effect will be **Negligible** to **Minor Adverse** on existing residential properties, which is not significant.

Operational Phase

- 5.7.4 The surrounding existing sensitive receptors are considered to have a medium sensitivity, and when considering the proposed mitigation measures the overall magnitude of the impact of proposed noise sources is negligible. Subsequently, the effect of proposed sources of noise on existing noise sensitive receptors is **Negligible** which is not significant.

Summary of Effects

- 5.7.5 The effects identified are summarised in **Table 5.13** below:

Table 5.13 – Summary of Effects

Potential Effect	Significance (pre-mitigation)	Mitigation Measure	Significance of residual effect
Construction Stage			
Construction Phase Noise	Moderate adverse	Embedded Mitigation (e.g. CEMP)	Negligible to Minor Adverse (Not Significant)
Construction Phase Vibration	Moderate adverse	Embedded Mitigation (e.g. CEMP)	Negligible to Minor Adverse (Not Significant)
Operational Phase			
Operational Phase Noise – Development Led Traffic	Negligible to Moderate Adverse	Not required.	Negligible to Moderate Adverse (Not Significant)
Operational Phase Noise – Non-Residential Uses	Major Adverse	Embedded Measures - Noise Limits for proposed plant and equipment	Negligible (Not Significant)

5.8 CUMULATIVE EFFECTS

5.8.1 The Proposed Development, in combination with other committed developments, could give rise to potential significant cumulative effects. The list of cumulative schemes set out in Chapter 2 EIA Methodology has been reviewed.

5.8.2 The following cumulative schemes have the potential to cause a cumulative effect on noise sensitive receptors, as noise from the construction and/or operational phase of any of these schemes could affect the receptors which have been considered herein:

- Land east of Rhee Spring and Orwell View, Royston Road, Baldock.
- Land to the east of Talbot Way and Kristiansand Way and Flint Road, Letchworth Garden City, SG6 1TY.
- Land to the north of Letchworth.
- Land west of Ashwell Road, Bygrave, SG7 5EB.

Construction Phase

5.8.3 There is the potential for existing receptors to experience a cumulative effect during the construction phase. This could occur when both the Proposed Development, and any one or more of the above future schemes is constructed simultaneously.

5.8.4 However, noise and vibration mitigation measures will be implemented within the Proposed Development. These measures will ensure that noise and vibration during the construction scheme do not cause a significant adverse effect on existing noise sensitive receptors.

5.8.5 The other future cumulative schemes will also need to implement mitigation measures to control construction phase noise and vibration. These measures will also ensure that noise and vibration during the construction scheme do not cause a significant adverse effect on existing sensitive receptors.

5.8.6 Therefore, the likelihood of a significant adverse effect from cumulative construction phase noise is unlikely to vary from that identified in this chapter.

Operational Phase

5.8.7 A cumulative operational phase noise impact is most likely to occur from development led road traffic from both the Proposed Development and the cumulative schemes. The criteria for assessing impact magnitude are shown in **Table 5.14**.

Table 5.14 - Cumulative Operational Phase Road Traffic Noise - Impact Magnitude

Magnitude	Typical Descriptors
Large	Change in traffic noise level ≥ 10 (LA10,18hr)

Magnitude	Typical Descriptors
Moderate	Change in traffic noise level between 5dB and <10dB (LA10,18hr)
Small	Change in traffic noise level between 3dB and <5dB (LA10,18hr)
Negligible	Change in traffic noise level <3dB (LA10,18hr)

5.8.8 Following the same methodology as the operational phase traffic assessment, the change in noise between Scenario 1 - 2025 Base Year and Scenario 7 - 2040 future year (full development traffic, with school + background traffic growth) has been undertaken.

5.8.9 Scenario 1 excludes the development, and any committed developments, and so the comparison of Scenario 1 with Scenario 7 includes any change in road traffic noise at sensitive receptors as a result of the Proposed Development and any committed developments.

5.8.10 The assessment is shown in **Table 5.15** below.

Table 5.15 - Operational Phase Cumulative Road Traffic Noise - Impact Assessment

Receptor		Road Traffic Noise Level (LA10,18hr (dB))		Cumulative Change in Traffic Noise	Impact Magnitude
		Scenario 1 – 2025 Base Model	Scenario 7 – 2040 With Development + School		
ESR1	1 Ashwell Road, Bygrave, Baldock. SG7 5DT	52.2	53.3	1.1	Negligible
ESR2	The Firs, Royston Road, Bygrave, Baldock. SG7 6QY	62.6	62.8	0.2	Negligible
ESR3	7 Royston Road, Clothall, Baldock. SG7 6SU	71.5	70.9	-0.6	Negligible
ESR4	Halfway Farm Bygrave Road, Bygrave, Baldock. SG7 5DS	49.2	54	4.8	Minor
ESR5	The Barn, Bygrave Road, Bygrave, Baldock. SG7 5DS	49.0	51.2	2.2	Negligible
ESR6	6 Bygrave Road, Bygrave, Baldock. SG7 5DS	49.0	52	3.0	Minor
ESR7	Freeland Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	49.3	51.3	2.0	Negligible
ESR8	Dairy Farm, Bygrave Road, Bygrave, Baldock. SG7 5DS	49.1	50.7	1.6	Negligible

Receptor		Road Traffic Noise Level (LA10,18hr (dB))		Cumulative Change in Traffic Noise	Impact Magnitude
		Scenario 1 – 2025 Base Model	Scenario 7 – 2040 With Development + School		
ESR9	Greenleas, Bygrave Road, Bygrave, Baldock. SG7 5DS	48.5	50.9	2.4	Negligible
ESR10	67 Bygrave Road, Clothall Common, Baldock. SG7 5DB	47.1	48.8	1.7	Negligible
ESR11	2 North Road, Clothall Common, Baldock. SG7 5BX	69.0	66.2	-2.8	Negligible
ESR12	Templars Cross Lodge, North Road, Bygrave, Baldock. SG7 5DN	74.4	72.2	-2.2	Negligible
ESR13	Black Horse Farm, North Road, Bygrave, Baldock. SG7 5DW	66.6	63.8	-2.8	Negligible
ESR14	11 Station Road, Clothall Common, Baldock. SG7 5BU	71.3	68.5	-2.8	Negligible
ESR15	5 Station Road, Clothall Common, Baldock. SG7 5BU	72.1	69.3	-2.8	Negligible
ESR16	Imperial Place, Station Road, Clothall Common, Baldock. SG7 5FE	73.7	70.9	-2.8	Negligible
ESR17	Clothall Corner, Baldock. SG7 6FN	71.0	71.9	0.9	Negligible
ESR18	45 Clothall Road, Clothall, Baldock. SG7 6RB	69.3	68.1	-1.2	Negligible
ESR19	Clothall, Baldock. SG7 6RB	67.2	67.2	0.0	Negligible
ESR20	Homestead, Clothall, Baldock. SG7 6RB	62.0	61.3	-0.7	Negligible
ESR21	South Lodge Mews, South Road, Clothall Common, Baldock. SG7 6DT	69.8	70.9	1.1	Negligible
ESR22	Heath Hall, High Street, Clothall Common, Baldock. SG7 6BP	68.9	70.1	1.2	Negligible
ESR23	41 High Street, Clothall Common, Baldock. SG7 6BG	71.1	71.5	0.4	Negligible
ESR24	The Old Town Hall, High Street,	76.6	77.3	0.7	Negligible

Receptor		Road Traffic Noise Level (LA10,18hr (dB))		Cumulative Change in Traffic Noise	Impact Magnitude
		Scenario 1 – 2025 Base Model	Scenario 7 – 2040 With Development + School		
	Clothall Common, Baldock. SG7 6AR				
ESR25	1 Whitehorse Street, Clothall Common, Baldock. SG7 5AD	75.1	76.1	1.0	Negligible
ESR26	75 Mansfield Road, Jubilee Industrial Centre, Baldock. SG7 6ED	43.8	44.4	0.6	Negligible

- 5.8.11 The cumulative operational phase assessment for traffic in **Table 5.15** identifies that some receptors have the potential to experience an impact magnitude of between negligible and small. Receptors have a medium sensitivity as a result development led traffic from committed developments and the Proposed Development will cause an effect which is between Negligible and Minor, which is Not Significant.

5.9 REFERENCE LIST

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