

Chapter 10: Noise and Vibration

10. Noise and Vibration

10.1. Introduction

10.1.1. Author

This ES chapter has been prepared by Tetra Tech, a leading provider of consulting and engineering services worldwide. The chapter has been prepared by Najwa Adnan-Smith (BSc) and Suzy Everett (BEng) and has been reviewed by Paul Bentley (BSc, MSc, PgDip), who is an Associate at Tetra Tech and has over 15 years’ experience in undertaking acoustic assessments for EIAs.

10.1.2. Chapter Purpose

This chapter of the ES reports the outcome of the assessment of the likely significant effects of the proposed development on the environment in terms of noise. The chapter and it’s supporting appendices describe the planning policy context, the assessment methodology; the baseline conditions at the application site and surroundings; the likely significant effects; the mitigation measures required to prevent, reduce or offset any significant adverse effects; the likely residual effects after these measures have been employed; and the inter-project cumulative effects.

10.1.3. Figures

The following figures are provided in this chapter:

- Figure 10.3.1 Existing Sensitive Receptor Locations.
- Figure 10.3.2 Proposed Sensitive Receptors Locations

10.1.4. Appendices

The chapter is supported by the following technical appendices in ES Volume IV:

- Appendix 10.1, Demolition and Construction Stage Noise Assessment; and
- Appendix 10.2, Completed Development Stage Noise Assessment.

10.2. Methodology

10.2.1. Guidance

National guidance and industry standards:

- BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’ (BS 4142), The British Standards Institution (1);
- BS 5228:2009+A1:2014 ‘Code of practice for noise and vibration control on construction and open sites - Part 1: Noise’ (BS 5228-1), The British Standards Institution (2);
- BS 5228:2009+A1:2014 ‘Code of practice for noise and vibration control on construction and open sites - Part 2: Vibration’ (BS 5228-2),The British Standards Institution (3);
- BS 8233:2014 ‘Guidance on Sound Insulation and Noise Reduction for Buildings’ (BS 8233), The British Standards Institution (4) ;
- Guidelines for Community Noise, World Health Organization (WHO Guidelines) (5);
- Design Manual for Roads and Bridges LA 111 – Noise and Vibration, Highways England (6);

- Guidelines for Environmental Noise Impact Assessment, Institute of Environmental Management & Assessment (IEMA Guidelines) (7).

10.2.2. Legislation and Policy

National Legislation and Policy:

- Future Wales: The National Plan 2040 (8);
- Planning Policy Wales (PPW) (9);
- Control of Pollution Act, 1974 (COPA) (10);
- The Environmental Improvement Plan 2023 (11);
- The Environment Act (2021) (12); and,
- Technical Advice Note 11 (13).

Local Policy:

- Wrexham Unitary Development Plan 1996 - 2011 ; and,
- Emerging Wrexham Local Development Plan 2013 to 2028 (13).

A summary of policy, legislation and guidance is provided in Appendix 10.1, ES Volume IV.

10.2.3. Consultation

The EIA Scoping Report (Appendix 2.1, ES Volume IV) was submitted to Wrexham CBC on 02 November 2022. The proposed scope of the Noise and Vibration ES chapter was set out in Chapter 5: Topics with Potential for Likely Significant Effects. Wrexham CBC issued their Scoping Opinion on 02 June 2023.

Table 10.2.1 summarises the key EIA Scoping Opinion comments with respect to the noise and vibration assessment and how and where these have been addressed in the chapter.

Table 10.2.1
Comments Provided in Scoping Opinion

Scoping Comments	How addressed in the ES chapter
Wrexham CBC (02 June 2023)	
The Public Protection Officer has confirmed that the methodology for the proposed Noise and Vibration assessments is acceptable.	The assessment presented within this chapter has been undertaken in line with the methodology set out in the EIA Scoping Report.
The development has the potential to generate noise and vibration during construction. It can be reasonably concluded that best practice techniques would be employed to minimise construction impacts. In any case, impacts arising from construction would be relatively localised and would therefore not be significant in EIA terms.	Whilst it is noted that the potential noise and vibration impacts may be localised, this does not rule out the possibility of significant impacts in EIA terms, as significant impacts can occur across a range of spatial scales. As confirmed in the EIA Scoping report, by virtue of the nature of the demolition and construction stage and completed development stage activities, there is considered to be potential for significant effects to arise. As such, a Noise and Vibration ES chapter has been prepared, as presented herein.
When operational, the development has the potential generate noise and vibration, although the extent of this will, to a significant extent, be dependant upon the end users, particularly end users undertaking activities that fall within Class B2. These impacts are likely to be relatively localised, however. Controls on	

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Scoping Comments	How addressed in the ES chapter
noise and vibration can be secured by condition. Controls also exist via other legislation. The noise and vibration impacts of the development are considered unlikely to be significant in EIA terms and therefore do not need to fall within the scope of the Environmental Statement. A Noise and Vibration Assessment should be prepared and submitted with a planning application but as a non-ES document.	
Wrexham CBC Enforcement Officer (06 December 2021) The proposed methodology in the scoping document is considered acceptable. I would also advise that given the proximity of sensitive receptors I would be looking to recommend the following condition on any planning permission: <i>The rating level of any noise generated by reason of this development shall not exceed the pre-existing background level at any time. The noise levels shall be determined at nearby noise sensitive premises, and measurements and assessment shall be made in accordance with BS4142:2014 Methods for Rating and Assessing Industrial and Commercial Sound.</i>	As above, the assessment presented within this chapter has been undertaken in line with the methodology set out in the EIA Scoping Report. This potential condition has been noted. Please refer to the additional mitigation section (Section 10.8).

10.2.4. Assessment Scope

Technical Scope

The technical scope of the assessment reported in this ES chapter comprises the following, as agreed through the EIA Scoping process:

- Noise impacts resulting from demolition and construction traffic on existing sensitive receptors;
- Noise impacts resulting from demolition and construction stage on-site activities on existing sensitive receptors;
- Vibration impacts resulting from demolition and construction stage on-site activities on existing sensitive receptors;
- Noise impacts resulting from road traffic generated during the completed development stage on existing sensitive receptors and future on-site sensitive receptors; and,
- Noise impacts resulting from on-site operational activities (such as deliveries and servicing and plant) during the completed development stage on existing sensitive receptors and future on-site sensitive receptors.

The following elements have been excluded from the scope of this assessment and have therefore not been considered further within this chapter:

- Operational vibration: Given the nature of the proposed development, sources of ground borne vibration that would result in significant effects are not anticipated during the completed development stage.

Spatial Scope

The study area for this assessment comprises the surrounding area approximately 1km from the application site boundary. This study area has been selected to include nearby road links likely to be affected by development generated traffic (refer to the study area set out in Chapter 8: Transport) together with nearby existing sensitive receptors.

10.2.5. Assessment Scenario

In respect of the demolition and construction stage, the worst-case traffic generation is predicted to take place in 2023. The scenarios that have been assessed for the demolition and construction stage are:

- Scenario 1: 2023 Existing Baseline; and,
- Scenario 2: 2023 Existing Baseline + Proposed Development.

Significant inter-development cumulative effects are not anticipated during the construction stage and, as such, a detailed assessment of inter-development cumulative effects during the construction stage has not been undertaken. Justification is provided in Section 10.10.1.

In respect of the completed development stage, the assessment has been based on a 2030 future baseline year, which is the anticipated fully operational opening year of the proposed development. The scenarios that have been assessed for the completed development stage are:

- Scenario 1: 2023 Existing Baseline;
- Scenario 2: 2030 Future Baseline;
- Scenario 3: 2030 Future Baseline + Proposed Development; and
- Scenario 4: 2030 Future Baseline + Proposed Development + Cumulative Schemes.

10.2.6. Baseline Characterisation Approach

Desk Study

The potential major noise sources contributing to baseline conditions were identified through a desktop study of the application site and surrounding land uses using available maps and aerial photography. Road traffic on Bryn Lane and Industrial Estate Road were identified as the likely major sources of noise contributing to the baseline environment. This was confirmed during the baseline noise survey.

Field Study

A monitoring survey was undertaken to characterise baseline ambient noise levels currently experienced on the application site and to establish the relative local background and traffic noise levels. A baseline monitoring survey was undertaken at nine locations at the application site and surrounding area between Tuesday 26 October 2021 and Tuesday 2 November 2021. Attended short term measurements were undertaken at six locations during day, evening and night-time periods with three additional locations being measured unattended over a 166-hour period. The noise monitoring locations are set out in **Table 10.2.2**. **Table 10.2.2** also confirms how these locations have been selected to represent background noise levels at sensitive receptors (presented in Section 10.3 of this chapter).

All noise monitoring took place under conducive monitoring conditions, with wind speeds less than 5ms⁻¹ and with no significant precipitation.

Table 10.2.2
Noise Monitoring Locations

Ref	Description
LT1	On the southern application site boundary, opposite Meridian Foods just off Bryn Lane. This position is considered to be representative of the sensitive receptor R01.
LT2	On the northern application site boundary just off Francis Lane. This position is considered to be representative of the sensitive receptor R08.

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Ref	Description
LT3	On the southwest corner of the application site by the roundabout on Industrial Estate Road. This position is considered to be representative of the sensitive receptors R03 and R04.
ST1	On the corner of Francis Lane and Hugmore Lane to the East of application site. This position is considered to be representative of the sensitive receptors R03 and R04.
ST2	On Francis Lane located to the north of the application site by the residents. This position is considered to be representative of the sensitive receptor R08.
ST3	On Francis Lane by the Wrexham Equine Centre north of the application site. This position is considered to be representative of the sensitive receptor R08.
ST4	On Ridley Wood Lane towards the east of the application site. This position is considered to be representative of the sensitive receptor R01.
ST5	On Bryn Lane, south of the application site by the entrance to CrossFit Wrexham. This position is considered to be representative of the sensitive receptor R02.
ST6	Northwest of the application site on the junction of Hugmore Lane and the A534. This position is considered to be representative of the sensitive receptor R06.
Notes: LT – long-term measurement locations ST – short-term measurement locations	

10.2.7. Assessment Method

The assessment has been based on the scheme information presented in ES Chapter 4 *Proposed Development* and the construction methodology presented in ES Chapter 6 *Construction Strategy & CEMP*.

Noise Modelling

Three-dimensional noise modelling has been undertaken based on the monitoring data to predict noise levels at a number of locations both horizontally and vertically. CadnaA noise modelling software has been used. This model is based on ISO 9613-2 noise propagation methodology and allows for detailed prediction of noise levels to be undertaken for large numbers of receptor points and different noise emission scenarios. The modelling software calculates noise levels based on the emission parameters and spatial settings that are entered.

A summary of modelling assumptions for the demolition and construction stage and the completed development stage are provided in Appendices 10.1 and 10.2.

Demolition and Construction Stage

DEMOLITION AND CONSTRUCTION NOISE

The assessment of demolition and construction noise and vibration on surrounding sensitive receptors has been undertaken in accordance with BS5228-1 + A1 2014 and BS5228-2 +A1 2019, respectively.

The noise model was created to predict noise levels at the nearest sensitive receptors due to demolition and construction works based on the information presented in ES Chapter 6: Construction Strategy & CEMP. ES Chapter 6 includes an indicative construction plant list, as well as the indicative demolition and construction program.

To undertake a conservative assessment, the point sources and line sources used in the model, which represent all likely items of plant and construction traffic, have been placed in the worst-case locations with respect to nearby receptors (refer to Appendix B in ES Volume IV, Appendix 10.1). The model has also assumed that all sources will be operating together for a total of 60 minutes every hour.

Based on the implementation of Best Practicable Means (BPM) during the demolition and construction stage, as defined in Section 72 of the Control of Pollution Act 1974, the assessment has assumed 2.4m high solid site hoarding surrounding the application site. Landscape bunding proposed for the completed development has not been considered in the demolition and construction stage scenario as this would be completed at the end of the construction period and a worst-case assessment has been undertaken without the bunding which would provide acoustic attenuation.

DEMOLITION & CONSTRUCTION VIBRATION

A screening exercise has initially been undertaken based on professional judgement and having regard to information in BS 5228-2 to identify those sensitive receptors that are close enough to the application site such that construction activities are likely to give rise to ‘just perceptible’ levels of vibration. The screening criteria are presented in **Table 10.2.3**.

Table 10.2.3
Construction Vibration Screening Criteria

Construction Activity	Distance from activity when vibration may just be perceptible (m)
Heavy Vehicles	5-10
Excavation	10-15
Concreting	15-20

As presented in Table 4.5 of Appendix 10.1, only one receptor (R04) has been identified to fall within these distances from the application site whereby vibration may just be perceptible. As such, all other receptors have been screened out of further assessment.

R04 is located approximately 15m from the application site boundary. This is beyond the distance where vibration from heavy vehicles would potentially just be perceptible and is at the maximum distance where vibration from excavations would potentially just be perceptible. On this basis and given that no other receptors are considered to have the potential to be impacted, a qualitative assessment of vibration impacts, based on Tetra Tech’s substantial experience of construction vibration on previous projects, has been deemed a proportionate approach in this instance. Impacts on receptor R04 have therefore been assessed in line with the construction vibration impact magnitude criteria set out in Table 10.2.6 on a qualitative basis.

CONSTRUCTION TRAFFIC NOISE

For the purpose of this assessment, the highest peak daily demolition and construction traffic flows, anticipated to take place in 2023, have been used as a worst-case scenario for the purposes of the demolition and construction traffic assessment. As discussed in ES Chapter 6: Construction Strategy & CEMP, it is anticipated during the peak in total traffic movements, there will be 53 light vehicles (106 total two-way movements) and 20 HGVs requiring access to the site per day (40 total two-way movements) equating to approximately 2 HGVs per hour over a 10-hour working day. The traffic data used for the assessment has been provided by the project transport consultant (Cora IHT). Traffic flow data has been provided for the assessment scenarios set out in Section 10.2.5.

Completed Development Stage

COMPLETED DEVELOPMENT TRAFFIC NOISE

Traffic noise associated with the completed proposed development has been assessed in accordance with BS4142 2014 + A1 2019. As well as HD213/11 published in Design Manual for Roads and Bridges. The assessment has identified the change in noise levels predicted at existing and proposed receptors as derived from the Institute of Environmental Management & Assessment ‘Guidelines for Environmental Noise Impact and Assessment’.

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Noise levels associated with road traffic from the proposed development have been predicted for the proposed assessment scenarios using the traffic data provided by the Applicant’s Transport Consultant (Cora IHT). 18 Hour Annual Average Weekday Traffic (AAWT) data was provided for the assessment scenarios detailed in Section 10.2.5. Predicted noise levels are based on speed limits for each road link in the absence of average speed data.

Due to the flexibility in the potential uses being sought by the Applicant in respect of the outline component, AAWT traffic data has been provided for two options to ensure the worst-case trip calculations have been assessed. The two options are set out in Chapter 8: Transport, which comprise a fully industrial/storage & distribution scheme (Option 1) and an industrial/storage & distribution scheme including additional alternative land uses (e.g. hotel and petrol filling station) (Option 2). However, given that Option 1 represents a worst-case in respect of AAWT traffic data across all road links, the noise assessment has only considered Option 1.

The predicted change in road traffic noise between the future baseline and the future baseline with the proposed development has been assessed in accordance with the guidance provided in DMRB.

COMPLETED DEVELOPMENT OPERATIONAL NOISE

The detailed aspect of the proposed development includes multiple delivery areas, loading docks, and HGV Parking spaces. An assessment has been carried out in accordance with the full scope of BS4142:2014 in order to assess potential daytime and night-time impacts associated with the delivery areas, loading docks, and HGV Parking Spaces.

The proposed development also includes the provision of ancillary fixed plant associated with the servicing of the buildings. Given this is a hybrid application, full detailed information relating to any proposed fixed plant and/or building services is not available at this stage. However, guideline noise limits have been established based on the measured background sound levels in accordance with the initial part of BS4142:2014, but do not take in to account the context in which associated noise will occur.

Given that the proposed development would operate 24 hours per day and 7 days a week, the assessment has been undertaken against day-time and night-time noise limits. As the application is hybrid, and to carry out a robust assessment of the worst case, no reductions have been made to night-time operations at the site.

Given that matters relating to the scale, layout and proposed land uses in the outline component of the proposed development will be reserved for determination at the reserved matters stage, all potential uses and layouts that could come forward in these parts of the application site have been reviewed to ensure the assessment considers a worst case scenario. For this aspect of the assessment, area noise sources have been used in the model. The area sources have been set at a 60dB sound pressure at 1m (L_p),. This is considered to represent a worst case in terms of noise impacts from the outline component of the proposed development on the noise sensitive receptors.

As bunding is proposed along the north-eastern, northern and north-western boundaries of the application site, these have been included within the completed development stage model.

Cumulative Development Stage

The cumulative assessment has been undertaken based on the list of cumulative schemes presented in Chapter 2: EIA Methodology. Traffic noise from the committed cumulative scheme has been assessed in accordance with the guidance provided in DMRB. As previously noted, traffic flow data has been provided by the project transport consultant (Cora IHT). As discussed in Chapter 8: Transport, to undertake a conservative assessment, traffic flows for the proposed KSS2 allocation have also been included within the cumulative assessment for the completed development stage (Scenario 4 in Section 10.2.4 above).

Given that the future baseline (2030) has also included TEMPro growth, the cumulative stage assessment therefore represents a conservative approach.

10.2.8. Assessment Criteria

Receptor Sensitivity Criteria

Table 10.2.4 sets out the scale of sensitivity that has been applied to receptors identified and considered within this assessment.

Table 10.2.4
Receptor Sensitivity Criteria

Sensitivity	Description
High	Residential dwellings, hotels, student accommodation, hospitals, educational facilities, religious premises
Medium	Offices, retail
Low	Industrial and logistics warehouse premises

Given that industrial and logistics are considered to be of low sensitivity, these receptors have been excluded from the assessment. This is in line with BS8233:2014 guidance.

Magnitude of Impact Criteria

The following tables set out the scales of impact magnitude adopted for each of the potential noise and vibration impacts considered in the assessment. Further information on the adopted impact magnitude scales is provided in Appendices 10.1 and 10.2, ES Volume IV.

Table 10.2.5
Scale of Impact Magnitude – Demolition and Construction Stage Noise

Magnitude	Effect Level	Noise Level Criteria	Action / Justification
Large	Unacceptable Observed Adverse Effect	Fixed Limits In rural areas, construction noise levels are ≥80.0	Mitigate to achieve total noise levels below relevant category threshold
Medium	Significant Observed Adverse Effect	Fixed Limits In rural areas, construction noise levels are between 70.0≤79.9	Mitigate to achieve total noise levels below relevant category threshold
Small	Lowest Observed Adverse Effect Level	Fixed Limits In rural areas, construction noise levels are between 60.0≤69.9	Mitigate to achieve total noise levels below relevant category threshold
Very Small	No Observed Adverse Effect Level	Fixed Limits In rural areas, construction noise levels are <60.0	No Action Required Complaints Relating to Plant Noise Unlikely

Table 10.2.6
Scale of Impact Magnitude – Demolition and Construction Stage Vibration

Magnitude	Vibration Level (peak particle velocity) mm/s	Justification
Large	> 10	Intolerable for more than very brief periods
Medium	1 ≤ 10	Potential to cause compliant but tolerable if advance warning given
Small	0.3 ≤ 1.0	Perceptible in residential environments
Very Small	≤ 0.3	Might just be perceptible in sensitive situations

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Table 10.2.7
Scale of Impact Magnitude – Demolition and Construction Stage Road Traffic Noise

Magnitude	Change or Difference in Noise Level (dB)	Justification
Large	≥ 5	Aligns with ‘major’ magnitude described in DMRB
Medium	3 < 5	Aligns with ‘moderate’ magnitude described in DMRB
Small	1 < 3	Aligns with ‘minor’ magnitude described in DMRB
Very Small	< 1	Aligns with ‘negligible’ magnitude described in DMRB

Table 10.2.8
Scale of Impact Magnitude – Completed Development Stage Fixed Plant Noise Emissions

Magnitude	BS4142 Rating Level, dB L _{Af,Tr} Relative to Background Sound Level	Justification
Large	> +5	Exceeds planning requirements – indication of an adverse impact in accordance with BS4142
Medium	0 ≤ +5	Exceeds planning requirements – lessening likelihood of adverse impact in accordance with BS4142
Small	-5 ≤ 0	Exceeds planning requirements - indication of a low impact in accordance with BS4142
Very Small	≤ -5	Complies with planning requirements - indication of a very low impact in accordance with BS4142

Table 10.2.9
Scale of Impact Magnitude – Completed Development Stage Road Traffic Noise

Magnitude	Long-term Change or Difference in Noise Level (dB)	Justification
Large	≥ 10	Aligns with ‘major’ magnitude described in DMRB
Medium	5 < 10	Aligns with ‘moderate’ magnitude described in DMRB
Small	3 < 5	Aligns with ‘minor’ magnitude described in DMRB
Very Small	< 3	Aligns with ‘negligible’ magnitude described in DMRB
No Impact	0	-

Table 10.2.10
Scale of Impact Magnitude – Completed Development Operational Activities

Magnitude	Long-term Change or Difference in Noise Level (dB)	Justification
Large	≥ 10	An increase of +10dB or more is likely to be indication of a significant adverse impact, depending on context, as described in BS4142:2014.
Medium	5 < 10	An increase of +5dB or more is likely to be indication of a adverse impact, depending on context, as described in BS4142:2014.
Small	0 < 5	The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact, as described in BS4142:2014.
Very Small	0 > -10	Where the rating level does not exceed the background level, this is an indication of the specific sound source having a low impact, depending on context, as described in BS4142:2014.

Magnitude	Long-term Change or Difference in Noise Level (dB)	Justification
No Impact	≤ -10	A level of less than -10dB will be inaudible or barely audible.

Scale of Effect Criteria

The assessment of significance within this chapter has been based on the scale of effect matrix presented in **Table 10.2.11**.

Table 10.2.11
Significance Matrix

Magnitude of Impact	Sensitivity of Receptor		
	High	Medium	Low
Large	Major	Moderate	Minor / Moderate
Medium	Moderate	Minor/ Moderate	Minor
Small	Minor / Moderate	Minor	Negligible
Very Small	Negligible / Minor	Negligible	Negligible
No Impact	Negligible	Negligible	Negligible
Where the effect is Negligible/Minor or Minor/Moderate, professional judgement will be applied to determine the appropriate scale of effect.			

Based on professional judgement, effects of a moderate or major scale are considered significant in EIA terms. In determining the scale of effect and its significance, consideration has also been given to the duration of the effect, i.e. short term (0-7 years) and medium term (8-12 years) and temporary, or long term (>12 years) and permanent.

The nature of the effect has been described as either adverse or beneficial as follows:

- Beneficial – An advantageous effect to a receptor;
- Adverse – A detrimental effect to a receptor; and
- Neutral – An effect that is on balance both beneficial and adverse.

In some instances, Negligible may be used on its own without a corresponding nature of effect. This is the case when achieving an absolute value or target.

Whether the effect is direct, indirect or secondary has also been considered.

10.2.9. Human Health

Human health can be directly affected by noise and vibration and this assessment considers current health based guidance on the characterization of potential adverse health impacts associated with noise and vibration. Specific guidance documents such as WHO, BS8233, BS4142 and DMRB provide working methodologies for the evaluation of potential adverse health impacts associated with particular types of noise and vibration, which are form the basis of this assessment.

10.2.10. Climate Change

Climate change is not considered likely to have a material effect on the assessment of noise and vibration reported in this chapter.

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10.2.11. Relevant Associated Development

Given the hybrid nature of the planning application, the full extent of any associated development, such as utilities or junction works outside the application site boundary, are not confirmed at this stage. However, any such works are not expected to be substantial in the context of the proposed development as a whole and are not considered likely to affect the outcome of this assessment. As such, associated development has not been considered further in this chapter.

10.2.12. Assumptions / limitations

In undertaking the noise assessment there are a number of assumptions and limitations potentially affecting the assessment. These include:

- The traffic data that has informed the assessment (the Option 1 data) is accurate. This was provided by the project Transport Consultants, Cora IHT. This ensured a more accurate representation of vehicle flows in the local area. The Option 1 traffic data used has also been based on a conservative assessment approach as discussed in Chapter 8 *Transport* and Section 10.2.7 of this chapter;
- An error has been identified in the floorspace assumptions that informed the original traffic data provided for Option 2, resulting in a shortfall in the area assessed by 8,648 sqm GEA. However, Cora IHT have subsequently provided the updated traffic data, which has been reviewed by Tetra Tech. The uplift in traffic associated with this quantum of floorspace is not considered to be material in the context of the total floorspace proposed across the proposed development (135,889 sqm GEA) and the total vehicle trips generated by it. The decision to use the Option 1 transport data to inform the completed development stage transport noise assessment is therefore considered to remain valid.
- The assessment scenarios set out in Section 10.2.5 are considered to be representative of the worst-case. In this regard, the demolition and construction stage assessment and completed development stage assessment have used the existing baseline (2023) and future baseline (2030), respectively, as this is considered to be representative of the worst-case years for traffic generation.
- All noise sources measured during the survey are considered to be typical of the surrounding noise environment;

The detailed modelling assumptions and inputs are provided within Appendix 10.1 and 10.2. The assumptions are standard for this type of noise assessment and are not considered to affect the assessment validity.

10.3. Sensitive Receptors

Existing Receptors

The existing sensitive receptors that have been identified as sensitive receptors for the assessment are set out in Table 10.3.1, and Figure 10.3.1.

Table 10.3.1
Receptor Locations

Receptor	Type of Use
R01 (Harcourt, Ridley Wood)	Existing residential property
R02 (2 Bryn Lane)	Existing residential property
R03 (Spring Grove, Hugmore Lane)	Existing residential property
R04 (Ty Gwanwyn, Hugmore Lane)	Existing residential property
R05 (Holt Lodge Farm)	Existing residential property
R06 (Ambergate, Hugmore Lane)	Existing residential property

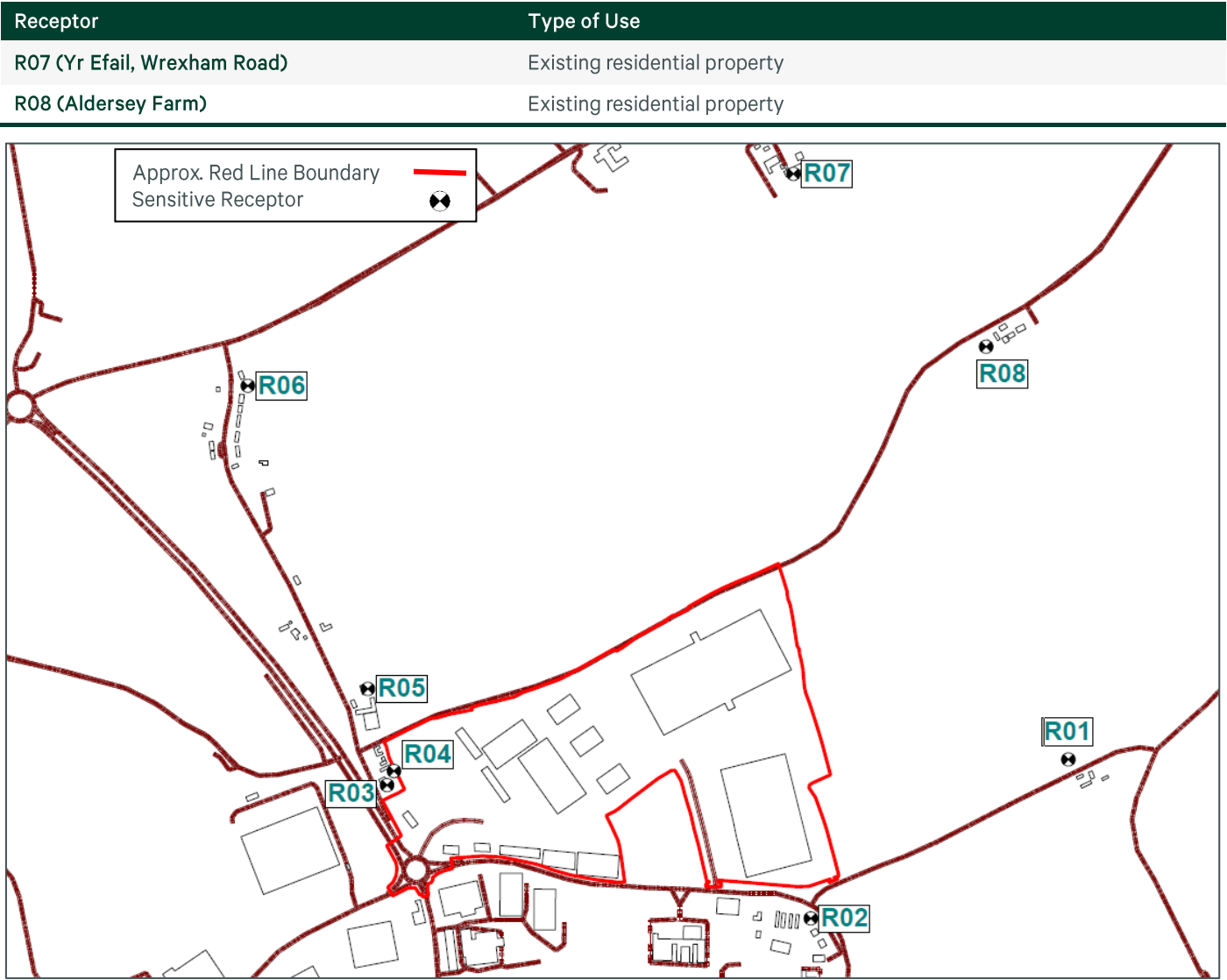


Figure 10.3.1
Existing Sensitive Receptor Locations

Introduced Receptors

The proposed development would introduce a potential hotel within the outline component, which is considered a sensitive receptor. All facades of the building have been assessed as set out in **Table 10.3.2** and shown in **Figure 10.3.2**. The location of the hotel has been based on the illustrative masterplan; however, this is considered to be a worst-case assumption as it is located adjacent to the noisiest activities proposed at the site. The proposed receptors are shown in Figure 10.3.2.

Table 10.3.2
Proposed Receptor Locations

Receptor	Type of Use
HR01 (Hotel northern façade)	Proposed Potential Hotel
HR02 (Hotel north-eastern façade)	Proposed Potential Hotel
HR03 (Hotel eastern façade)	Proposed Potential Hotel
HR04 (Hotel south-eastern façade)	Proposed Potential Hotel

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Receptor	Type of Use
HR05 (Hotel southern façade)	Proposed Potential Hotel
HR06 (Hotel south-western façade)	Proposed Potential Hotel
HR07 (Hotel western façade)	Proposed Potential Hotel
HR08 (Hotel north-western façade)	Proposed Potential Hotel

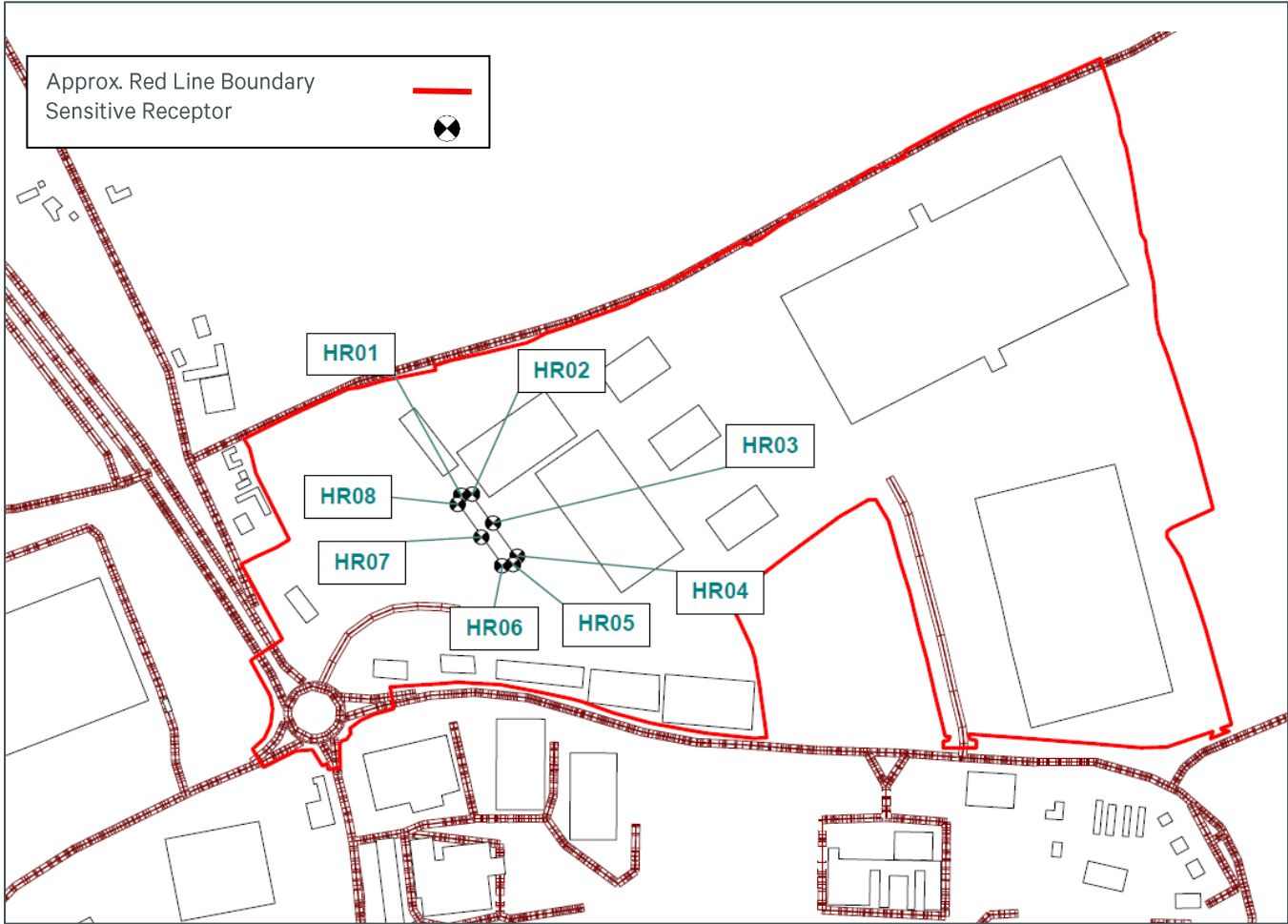


Figure 10.3.2
Proposed Sensitive Receptor Locations

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10.4. Baseline Conditions

10.4.1. Existing Baseline

Table 10.4.1 sets out the existing noise baseline noise levels measured at the survey locations. The ambient noise climate was dominated by road traffic noise. The main sources of this noise were; Bryn Lane, the A534, Francis Lane and Industrial Estate Lane.

Table 10.4.1
Measured Noise Levels

Period	Duration (T)	Monitoring Date and Times	Monitoring Location (Representative Sensitive Receptor)	LAeq,T (dB)	LAmix,T (dB)	LAmix,T (dB)	LA10,T (dB)	LA90,T (dB)
Weekday Daytime 07:00 – 23:00	110 Hours	26/10/2021 – 29/10/2021 13:00 – 23:00 01/11/2021 – 02/11/2021 07:01 – 11:06	LT1 (R01, R02)	64.5	94.3	40.6	66.6	58.0
Weekday Night-time 23:00 – 07:00	103 Hours	26/10/2021 – 29/10/2021 23:06 – 23:56 01/11/2021 – 02/11/2021 00:01 – 06:56		59.6	90.6	38.9	59.9	46.0
Weekend Daytime 07:00 – 23:00	40 Hours	30/10/2021 – 31/10/2021 07:01 – 23:00		62.0	91.8	42.1	64.5	50.0
Weekend Night-time 23:00 – 07:00	48 hours	30/10/2021 – 31/10/2021 00:01 – 23:56		58.0	84.8	41.1	57.2	46.0
Weekday Daytime 07:00 – 23:00	109 Hours	26/10/2021 – 29/10/2021 13:24 – 22:59 01/11/2021 – 02/11/2021 07:00 – 10:49	LT2 (R07, R08)	53.6	78.4	37.1	53.5	48.0
Weekday Night-time 23:00 – 07:00	104 Hours	26/10/2021 – 29/10/2021 23:04 – 23:59 01/11/2021 – 02/11/2021 00:04 – 06:54		52.9	76.0	33.7	51.4	40.0
Weekend Daytime 07:00 – 23:00	40 Hours	30/10/2021 – 31/10/2021 07:00 – 23:00		56.3	85.3	37.8	51.6	44.0
Weekend Night-time 23:00 – 07:00	48 hours	30/10/2021 – 31/10/2021 00:04 – 23:59		46.5	71.5	36.4	46.4	42.0
Weekday Daytime 07:00 – 23:00	109 Hours	26/10/2021 – 29/10/2021 12:39 – 23:00 01/11/2021 – 02/11/2021 07:00 – 10:39	LT3 (R03, R04,R05)	62.3	88.6	38.8	64.4	52.0
Weekday Night-time 23:00 – 07:00	110 Hours	26/10/2021 – 29/10/2021 23:04 – 23:59 01/11/2021 – 02/11/2021 00:04 – 06:54		56.8	86.6	37.1	53.6	49.0
Weekend Daytime 07:00 – 23:00	40 Hours	30/10/2021 – 31/10/2021 07:00 – 22:59		59.3	86.1	37.4	60.0	44.0
Weekend Night-time 23:00 – 07:00	48 hours	30/10/2021 – 31/10/2021 00:04 – 23:59		53.8	80.7	35.8	48.4	40.0

10. Noise and Vibration

Period	Duration (T)	Monitoring Date and Times	Monitoring Location (Representative Sensitive Receptor)	LAeq,T (dB)	LAmix,T (dB)	LAmix,T (dB)	LA10,T (dB)	LA90,T (dB)
Daytime 07:00 – 19:00	15 Mins	01/11/2021 14:13	ST1 (R03, R04)	63.8	71.8	52.3	66.8	58.3
	15 Mins	01/11/2021 14:33	ST2 (R08)	53.2	80.0	43.8	53.2	46.7
	15 Mins	01/11/2021 14:54	ST3 (R08)	58.0	85.3	39.2	48.6	42.7
	15 Mins	01/11/2021 15:16	ST4 (R01)	67.7	90.8	44.9	65.5	47.5
	15 Mins	01/11/2021 15:35	ST5 (R02)	75.0	89.2	47.7	79.6	52.6
	15 Mins	01/11/2021 15:54	ST6 (R06)	72.6	83.1	53.1	77.2	59.5
Evening 19:00 – 23:00	15 Mins	01/11/2021 19:21	ST1 (R03, R04)	60.2	86.2	42.4	63.8	47.8
	15 Mins	01/11/2021 19:40	ST2 (R08)	54.9	84.5	40.6	50.8	44.5
	15 Mins	01/11/2021 19:59	ST3 (R08)	42.7	58.2	37.1	44.8	39.2
	15 Mins	01/11/2021 20:47	ST4 (R01)	55.7	81.2	38.7	53.1	40.7
	15 Mins	01/11/2021 14:13	ST5 (R02)	61.8	87.6	42.8	52.8	45.0
	15 Mins	01/11/2021 19:06	ST6 (R06)	69.3	82.4	49.3	74.7	53.0
Night-time 23:00 – 07:00	15 Mins	01/11/2021 23:20	ST1 (R03, R04)	54.0	67.6	39.9	58.1	42.7
	15 Mins	01/11/2021 23:40	ST2 (R08)	44.5	56.0	37.7	46.6	40.7
	15 Mins	02/11/2021 00:46	ST3 (R08)	47.4	79.8	31.0	40.4	32.5
	15 Mins	02/11/2021 01:07	ST4 (R01)	41.7	54.2	38.1	42.7	40.0
	15 Mins	02/11/2021 01:26	ST5 (R02)	61.6	88.2	44.6	49.9	46.1
	15 Mins	01/11/2021 23:02	ST6 (R06)	60.2	78.9	30.9	59.4	34.9

10. Noise and Vibration

10.5. Potential Impacts

The impacts considered to have the potential to result in significant effects (prior to inclusion of any embedded mitigation) are reported in Table 10.5.1.

Table 10.5.1
Potential significant Impacts

Stage	Description of Potential Impacts	Adverse/beneficial
Demolition and Construction Stage	Noise impacts resulting from demolition and construction traffic on existing sensitive receptors	Adverse
Demolition and Construction Stage	Noise impacts resulting from demolition and construction stage on-site activities on existing sensitive receptors	Adverse
Demolition and Construction Stage	Vibration impacts resulting from demolition and construction site on-site activities on existing sensitive receptors	Adverse
Completed Development Stage	Noise impacts resulting from road traffic generated by the proposed development during the completed development stage on existing and proposed sensitive receptors	Adverse
Completed Development Stage	Noise impacts resulting from on-site operational activities (such as deliveries and servicing and plant) during the completed development stage on existing and proposed sensitive receptors.	Adverse

10.6. Embedded Mitigation

Table 10.6.1 identifies those design interventions and that have been incorporated into the design of the proposed development, as well as any control methods that have been incorporated into the proposed development to mitigate the potential impacts identified during the course of the design evolution process. These measures are collectively referred to as embedded mitigation.

Table 10.6.1
Embedded Mitigation

Embedded Mitigation	Description	Reason for Intervention	Further information
Demolition and construction Site Hoarding	Based on the implementation of Best Practicable Means (BPM) during the demolition and construction stage, 2.4m solid site hoarding will be implemented around the application site boundary for the duration of the works, noting that details can be refined subject to further assessment once the details of the construction phasing works are known.	To reduce noise impact on nearby sensitive receptors.	Chapter 6: Construction Strategy & CEMP
Bunds located on the application site boundary	Four separate bunds are to be located on the western and northern boundaries of the application site. The bunds will measure between 3 and 5m in height. Whilst the exact bund heights within the outline component will be secured at the reserved matters stage, the bund height in the northwest corner will be 5 m agl to provide the required screening to the residential receptors along Hugmore Lane.	To reduce noise impact on nearby sensitive receptors.	ES Volume II, Chapter 4: Proposed Development; and Section 5.2, Appendix 10.2

10.7. Assessment of Effects (including Embedded Mitigation)

10.7.1. Demolition and Construction Stage

Demolition and Construction Noise & Vibration

Table 10.7.1 sets a summary of the potential worst-case noise and vibration effects during the demolition and construction stages.

Table 10.7.1
Demolition and Construction Noise & Vibration Assessment

Receptor(s) affected	Receptor Sensitivity	Description of Impact	Magnitude of Impact	Scale of Effect and Significance	Additional Mitigation proposed?	Further information
R01 (Harcourt, Ridley Wood)	High	Enabling & Demolition Works Maximum potential noise levels during this phase of the construction works at this receptor would be 49.5 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Excavation and Sub-Structure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 42.3 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV

10. Noise and Vibration

Receptor(s) affected	Receptor Sensitivity	Description of Impact	Magnitude of Impact	Scale of Effect and Significance	Additional Mitigation proposed?	Further information
R02 (2 Bryn Lane)	High	Construction of Superstructure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 40.9 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Construction of External Landscaping Works Maximum potential noise levels during this phase of the construction works at this receptor would be 43.2 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Enabling & Demolition Works Maximum potential noise levels during this phase of the construction works at this receptor would be 58.0 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Excavation and Sub-Structure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 54.6 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
R03 (Spring Grove, Hugmore Lane)	High	Construction of Superstructure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 51.9 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Construction of External Landscaping Works Maximum potential noise levels during this phase of the construction works at this receptor would be 55.9 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Enabling & Demolition Works Maximum potential noise levels during this phase of the construction works at this receptor would be 59.7 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Excavation and Sub-Structure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 55.8 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
R04 (Ty Gwanwyn, Hugmore Lane)	High	Construction of Superstructure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 57.0 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Construction of External Landscaping Works Maximum potential noise levels during this phase of the construction works at this receptor would be 57.9 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Enabling & Demolition Works Maximum potential noise levels during this phase of the construction works at this receptor would be 64.9 dBA. Given that this is lower than the 70 dB threshold, this would be a very small impact magnitude.	Small	Moderate Adverse (significant)	Yes	Appendix 10.1, ES Volume IV
		Excavation and Sub-Structure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 57.8 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Construction of Superstructure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 59.3 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Construction of External Landscaping Works Maximum potential noise levels during this phase of the construction works at this receptor would be 61.0 dBA. Given that this is lower than the 70 dB threshold, this would be a very small impact magnitude.	Small	Moderate Adverse (significant)	Yes	Appendix 10.1, ES Volume IV

10. Noise and Vibration

Receptor(s) affected	Receptor Sensitivity	Description of Impact	Magnitude of Impact	Scale of Effect and Significance	Additional Mitigation proposed?	Further information
R05 (Holt Lodge Farm)	High	Construction Vibration Considering the distance between the application site and this receptor and Tetra Tech’s construction vibration experience from previous projects, the maximum vibration level experienced at this receptor is considered unlikely to exceed 10 mm/s. As such, the impact magnitude would be medium.	Medium	Moderate Adverse (significant)	Yes	Appendix 10.1, ES Volume IV
		Enabling & Demolition Works Maximum potential noise levels during this phase of the construction works at this receptor would be 62.6 dBA. Given that this is lower than the 70 dB threshold, this would be a very small impact magnitude.	Small	Moderate Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Excavation and Sub-Structure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 51.5 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Construction of Superstructure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 49.8 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
R06 (Ambergate, Hugmore Lane)	High	Construction of External Landscaping Works Maximum potential noise levels during this phase of the construction works at this receptor would be 52.1 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Enabling & Demolition Works Maximum potential noise levels during this phase of the construction works at this receptor would be 47.9 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Excavation and Sub-Structure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 40.3 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Construction of Superstructure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 39.4 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
R07 (Yr Efail, Wrexham Road)	High	Construction of External Landscaping Works Maximum potential noise levels during this phase of the construction works at this receptor would be 41.6 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Enabling & Demolition Works Maximum potential noise levels during this phase of the construction works at this receptor would be 44.9 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Excavation and Sub-Structure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 37.7 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Construction of Superstructure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 36.3 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
R08 (Aldersey Farm)	High	Construction of External Landscaping Works Maximum potential noise levels during this phase of the construction works at this receptor would be 38.7 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Enabling & Demolition Works Maximum potential noise levels during this phase of the construction works at this receptor would be 48.3 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Excavation and Sub-Structure Works	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV

10. Noise and Vibration

Receptor(s) affected	Receptor Sensitivity	Description of Impact	Magnitude of Impact	Scale of Effect and Significance	Additional Mitigation proposed?	Further information
		Maximum potential noise levels during this phase of the construction works at this receptor would be 41.0 dBA. Given that this is lower than the 50 dB threshold, this would be a very small impact magnitude.				
		Construction of Superstructure Works Maximum potential noise levels during this phase of the construction works at this receptor would be 39.6 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV
		Construction of External Landscaping Works Maximum potential noise levels during this phase of the construction works at this receptor would be 41.9 dBA. Given that this is lower than the 60 dB threshold, this would be a very small impact magnitude.	Very Small	Minor Adverse (not significant)	Yes	Appendix 10.1, ES Volume IV

Construction Traffic Noise

Table 10.7.1 sets out the potential noise effects resulting from construction traffic on the local highway network (including embedded mitigation).

Table 10.7.2

Completed Development Traffic Noise

Receptor(s) affected	Receptor Sensitivity	Scenario 1 - 2023 Baseline Noise Level $L_{A10,18hr}$ (dB)	Scenario 2 - 2023 Baseline + Construction Traffic Noise Level $L_{A10,18hr}$ (dB)	Change between Scenario 1 and Scenario 2 (dB)	Description of Impact	Magnitude of Impact	Scale of Effect and Significance	Additional Mitigation proposed?	Further information
R01 (Harcourt, Ridley Wood)	High	44.4	44.6	0.2	Given that the change is less than 1 dB threshold, the impact magnitude is very small	Very Small	Minor Adverse (not significant)	No	Section 5.1, Appendix 10.1
R02 (2 Bryn Lane)	High	63.1	63.4	0.3	Given that the change is less than 1 dB threshold, the impact magnitude is very small	Very Small	Minor Adverse (not significant)	No	Section 5.1, Appendix 10.1
R03 (Spring Grove, Hugmore Lane)	High	48.1	48.6	0.5	Given that the change is less than 1 dB threshold, the impact magnitude is very small	Very Small	Minor Adverse (not significant)	No	Section 5.1, Appendix 10.1
R04 (Ty Gwanwyn, Hugmore Lane)	High	45.4	45.7	0.3	Given that the change is less than 1 dB threshold, the impact magnitude is very small	Very Small	Minor Adverse (not significant)	No	Section 5.1, Appendix 10.1
R05 (Holt Lodge Farm)	High	53.2	53.3	0.1	Given that the change is less than 1 dB threshold, the impact magnitude is very small	Very Small	Minor Adverse (not significant)	No	Section 5.1, Appendix 10.1
R06 (Ambergate, Hugmore Lane)	High	41.4	41.7	0.3	Given that the change is less than 1 dB threshold, the impact magnitude is very small	Very Small	Minor Adverse (not significant)	No	Section 5.1, Appendix 10.1
R07 (Yr Efail, Wrexham Road)	High	44.1	44.2	0.1	Given that the change is less than 1 dB threshold, the impact magnitude is very small	Very Small	Minor Adverse (not significant)	No	Section 5.1, Appendix 10.1
R08 (Aldersey Farm)	High	44.4	44.6	0.2	Given that the change is less than 1 dB threshold, the impact magnitude is very small	Very Small	Minor Adverse (not significant)	No	Section 5.1, Appendix 10.1

10.7.2. Completed Development Stage

Completed Development Traffic Noise

The assessment of the likely noise effects of the proposed development from completed development traffic noise (including embedded mitigation) is set out in **Table 10.7.2**.

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Table 10.7.3
Completed Development Traffic Noise

Receptor(s) affected	Receptor Sensitivity	Scenario 2 - 2030 Future Baseline Noise Level $L_{A10,18hr}$ (dB)	Scenario 3 - 2030 Future Baseline + Proposed Development Traffic Noise Level $L_{A10,18hr}$ (dB)	Change between Scenario 2 and Scenario 3 (dB)	Description of Impact	Magnitude of Impact	Scale of Effect and Significance	Additional Mitigation proposed?	Further information
R01 (Harcourt, Ridley Wood)	High	44.7	42.9	-1.8	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.1
R02 (2 Bryn Lane)	High	61.8	62.2	0.4	Given that the change is less than 3dB threshold, the impact magnitude is very small	Very Small	Negligible Adverse (not significant)	No	Section 5.1, Appendix 10.1
R03 (Spring Grove, Hugmore Lane)	High	63.4	63.4	0.0	Given that the change is less than 3 dB threshold, the impact magnitude is very small	No Impact	Negligible (not significant)	No	Section 5.1, Appendix 10.1
R04 (Ty Gwanwyn, Hugmore Lane)	High	48.4	46.8	-1.6	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.1
R05 (Holt Lodge Farm)	High	45.7	44.8	-0.9	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.1
R06 (Ambergate, Hugmore Lane)	High	53.5	53.5	0.0	Given that the change is less than 3 dB threshold, the impact magnitude is very small	No Impact	Negligible (not significant)	No	Section 5.1, Appendix 10.1
R07 (Yr Efail, Wrexham Road)	High	41.6	41.3	-0.3	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.1
R08 (Aldersey Farm)	High	44.3	44.0	-0.3	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.1
HR01 (Hotel northern façade)	High	55.9	55.5	-0.4	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.1
HR02 (Hotel north-eastern façade)	High	55.7	55.3	-0.4	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.1
HR03 (Hotel eastern façade)	High	56.0	55.7	-0.3	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.1
HR04 (Hotel south-eastern façade)	High	56.4	56.4	0.0	Given that the change is less than 3 dB threshold, the impact magnitude is very small	No Impact	Negligible (not significant)	No	Section 5.1, Appendix 10.1
HR05 (Hotel southern façade)	High	56.7	56.8	0.1	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Adverse (not significant)	No	Section 5.1, Appendix 10.1
HR06 (Hotel south-western façade)	High	56.9	57.0	0.1	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Adverse (not significant)	No	Section 5.1, Appendix 10.1
HR07 (Hotel western façade)	High	56.4	56.4	0.0	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Adverse (not significant)	No	Section 5.1, Appendix 10.1
HR08 (Hotel north-western façade)	High	56.2	55.8	-0.4	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.1

10. Noise and Vibration

Completed Development Operational Activities

The assessment of the likely effects of the proposed development from operational noise (such as from HGV Movements and loading/unloading activities) (including embedded mitigation) is set out in Table 10.7.2. The Specific sound level and Noise Rating Level are in line with the methodology in BS4142:2014.

Table 10.7.4
Completed Development Stage Assessment

Receptor(s) affected	Receptor Sensitivity	Existing Measured Background L _{A90,T}		Specific Sound Level L _{Aeq,T}		Noise Rating Level L _{A,Tr} (With +3 dB Correction)		BS 4142 Score		Description of Impact	Magnitude of Impact	Scale of Effect and Significance	Additional Mitigation proposed?	Further information
		Daytime	Night-time	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time					
R01 (Harcourt, Ridley Wood)	High	50	46	40	41	43	44	-7	-2	The difference between the rating level and background sound level is less than 0dB, meaning the impact according BS4142 is low. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is very small.	Very Small	Negligible Adverse (not significant)	No	Section 5.2.1, Appendix 10.1
R02 (2 Bryn Lane)	High	50	46	42	43	45	46	-5	0	The difference between the rating level and background sound level is less than 0dB, meaning the impact according BS4142 is low. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is very small.	Very Small	Negligible Adverse (not significant)	No	Section 5.2.1, Appendix 10.1
R03 (Spring Grove, Hugmore Lane)	High	44	40	58	59	61	62	17	22	The difference between the rating level and background sound level is greater than 10dB, meaning the impact according BS4142 is significant adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is Large.	Large	Major Adverse (significant)	Yes	Section 5.2.1, Appendix 10.1
R04 (Ty Gwanwyn, Hugmore Lane)	High	44	40	58	59	61	62	17	22	The difference between the rating level and background sound level is greater than 10dB, meaning the impact according BS4142 is significant adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is Large.	Large	Major Adverse (significant)	Yes	Section 5.2.1, Appendix 10.1
R05 (Holt Lodge Farm)	High	44	40	53	54	56	57	12	17	The difference between the rating level and background sound level is greater than 10dB, meaning the impact according BS4142 is significant adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is Large.	Large	Major Adverse (significant)	Yes	Section 5.2.1, Appendix 10.1
R06 (Ambergate, Hugmore Lane)	High	60	35	41	42	44	45	-16	10	The difference between the daytime rating level and background sound level is less than 0dB, meaning the impact according BS4142 is low. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is very small. The difference between the night-time rating level and background sound level is greater than 10dB, meaning the impact according BS4142 is significant adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is Large.	Large	Major Adverse (significant)	Yes	Section 5.2.1, Appendix 10.1
R07 (Yr Efail, Wrexham Road)	High	44	40	37	39	40	42	-4	2	The difference between the daytime rating level and background sound level is less than 0dB, meaning the impact according BS4142 is low. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is very small. The difference between the night-time rating level and background sound level is less than the 5dB threshold, meaning the impact according BS4142 is low. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is small.	Small	Minor Adverse (not significant)	No	Section 5.2.1, Appendix 10.1
R08 (Aldersey Farm)	High	44	40	38	40	41	43	-3	3	The difference between the daytime rating level and background sound level is less than 0dB, meaning the impact according BS4142 is low. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is very small. The difference between the night-time rating level and background sound level is less than the 5dB threshold, meaning the impact according BS4142 is less likely to be adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is small.	Small	Minor Adverse (not significant)	No	Section 5.2.1, Appendix 10.1

10. Noise and Vibration

Receptor(s) affected	Receptor Sensitivity	Existing Measured Background L _{A90,T}		Specific Sound Level L _{Aeq,T}		Noise Rating Level L _{A,Tr} (With +3 dB Correction)		BS 4142 Score		Description of Impact	Magnitude of Impact	Scale of Effect and Significance	Additional Mitigation proposed?	Further information
		Daytime	Night-time	Daytime	Night-time	Daytime	Night-time	Daytime	Night-time					
HR01 (Hotel northern façade)	High	50	46	38	40	41	43	-9	-3	The difference between the rating level and background sound level is less than 0dB, meaning the impact according BS4142 is low. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is very small.	Very Small	Negligible Adverse(not significant)	No	Section 5.2.1, Appendix 10.1
HR02 (Hotel north-eastern façade)	High	50	46	37	38	40	41	-11	-5	The difference between the rating level and background sound level is less than 0dB, meaning the impact according BS4142 is low. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is very small.	Very Small	Negligible Adverse(not significant)	No	Section 5.2.1, Appendix 10.1
HR03 (Hotel eastern façade)	High	44	40	44	44	47	47	3	7	The difference between the daytime rating level and background sound level is less than the 5dB threshold, meaning the impact according BS4142 is less likely to be adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is small. The difference between the night-time rating level and background sound level is less than the 10dB threshold, meaning the impact according BS4142 is adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is medium.	Medium	Moderate Adverse (significant)	Yes	Section 5.2.1, Appendix 10.1
HR04 (Hotel south-eastern façade)	High	44	40	44	46	47	49	3	9	The difference between the daytime rating level and background sound level is less than the 5dB threshold, meaning the impact according BS4142 is less likely to be adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is small. The difference between the night-time rating level and background sound level is less than the 10dB threshold, meaning the impact according BS4142 is adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is medium.	Medium	Moderate Adverse (significant)	Yes	Section 5.2.1, Appendix 10.1
HR05 (Hotel southern façade)	High	44	40	44	47	47	50	3	10	The difference between the daytime rating level and background sound level is less than the 5dB threshold, meaning the impact according BS4142 is less likely to be adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is small. The difference between the night-time rating level and background sound level is greater than the 10dB threshold, meaning the impact according BS4142 is significant adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is large.	Large	Major Adverse (significant)	Yes	Section 5.2.1, Appendix 10.1
HR06 (Hotel south-western façade)	High	60	35	36	38	39	41	-21	6	The difference between the daytime rating level and background sound level is less than 0dB, meaning the impact according BS4142 is low. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is very small. The difference between the night-time rating level and background sound level is less than the 10dB threshold, meaning the impact according BS4142 is adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is medium.	Medium	Moderate Adverse (not significant)	Yes	Section 5.2.1, Appendix 10.1
HR07 (Hotel western façade)	High	44	40	35	37	38	40	-6	0	The difference between the rating level and background sound level is less than 0dB, meaning the impact according BS4142 is low. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is very small.	Very Small	Negligible Adverse (not significant)	No	Section 5.2.1, Appendix 10.1
HR08 (Hotel north-western façade)	High	44	40	36	38	39	41	-5	1	The difference between the daytime rating level and background sound level is less than 0dB, meaning the impact according BS4142 is low. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is very small. The difference between the night-time rating level and background sound level is less than the 5dB threshold, meaning the impact according BS4142 is less likely to be adverse. When considered against the assessment criteria in Table 10.2.10, the impact magnitude is small.	Small	Minor Adverse (not significant)	Yes	Section 5.2.1, Appendix 10.1

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10.8. Additional Mitigation & Enhancement Measures

Table 10.8.1 identifies the additional mitigation measures that have been proposed in order to address the effects identified in Section 10.7, as well as the effectiveness of those measures, and how they would be secured. Possible enhancement measures have also been identified where relevant.

Table 10.8.1
Proposed Mitigation & Enhancement Measures

Stage	Receptor(s) affected	Possible effect being mitigated	Mitigation measure	How secured / trigger	Further information
Demolition and Construction Stage	All Receptors R01-R08	Demolition and construction traffic noise	Implementation of a Construction Traffic Management Plan and a Construction Environmental Management Plan (CEMP) to reduce the effects of HGVs and worker vehicles throughout construction. As part of this, traffic management measures designed to mitigate noise effects to sensitive receptors will be implemented: these measures include set hours of operation, and traffic routing and scheduling of vehicle movements.	Planning Condition	ES Chapter 6 <i>Construction Strategy & CEMP</i>
Demolition and Construction Stage	All Receptors R01-R08	Demolition and construction noise	Implementation of a CEMP to reduce noise effects from demolition and construction activities throughout the construction stage. - Careful programming to ensure activities which may generate noise and vibration are planned well in advance and sensitive receptors are notified of the works. - Identification and use of low noise techniques. For example, equipment that breaks concrete by munching or similar, rather than by percussion. Where construction plant is known to generate significant levels of noise than it is to be used sparingly and the construction activity monitored to minimise noise levels. - All plant brought onto site should comply with the relevant EC/UK noise limits applicable to that equipment or should be no noisier than would be expected based on the noise levels quoted in BS 5228-1. Plant should be properly maintained and operated in accordance with manufacturers' recommendations. - Where feasible, all stationary plant should be located so that the noise at all occupied sensitive receptors is minimised and, if practicable, every item of static plant when in operation should be sound attenuated using methods based on the guidance and advice given in BS 5228-1 (e.g., local screening). - Items of plant on the site operating intermittently should be shut down in the intervening periods between use. - Adoption of a noise monitoring regime and the establishment of noise Action Levels in consultation with Wrexham Borough Council, above which consideration would be given to the use of alternative techniques and/or other means of controlling noise levels. - Use of hoarding to the required height and density appropriate to the noise sensitivity of the site and; - Implementation of a Construction Logistics Plan (CLP) to pre-plan and manage traffic associated with the works to minimise disturbance to sensitive receptors. The CLP would include aspects such as operation of a 'Just in Time' policy for the delivery and supply of materials for the work to minimise the disruption to the local community.	CEMP, secured by planning condition	ES Chapter 6 <i>Construction Strategy & CEMP</i>
Demolition and Construction Stage	Receptor R04	Demolition and construction vibration	Implementation of a CEMP to reduce vibration effects from demolition and construction activities throughout the construction stage. Careful programming should be implemented to ensure activities that may generate vibration are planned well in advance and sensitive receptors are notified of the works.	CEMP, secured by planning condition	ES Chapter 6 <i>Construction Strategy & CEMP</i>
Completed Development Stage	All Receptors R01-R08, and HR01 – HR08.	Completed development traffic noise	Whilst the noise effects relating to completed development stage traffic noise would be negligible, potential impacts would be further mitigated through the implementation of a Travel Plan to reduce car vehicle trip generation and promote sustainable mode share.	Planning condition	ES Volume IV, Appendix 8.4: Travel Plan
Completed Development Stage	R03 - R06, HR03 – HR06, and HR08.	Completed development operational noise associated with HGV movements and loading/unloading noise	Adverse noise impacts on the receptors relate to operational activities in the outline component. Noise effects relating to HGV movements and unloading will be mitigated by either acoustic barriers/additional bunds, or designing the location of HGV docks and parking to be away from this receptor. This would be designed at the reserved matters stage and secured through an appropriately worded planning condition.	Planning condition	Section 6, Appendix 10.2
Completed Development Stage	HR01 – HR08.	Completed development operational noise associated with HGV movements and loading/unloading noise	The ventilation strategy for the potential hotel would consist of mechanical ventilation with heat recovery (MVHR). As such, sufficient ventilation can occur with windows closed. Glazing and ventilation will be designed to ensure that the BS8233 internal criteria are met within potential hotel rooms proposed. This would be designed at the reserved matters stage and secured through planning condition.	Planning condition	Section 6, Appendix 10.2
Completed Development Stage	All Receptors R01 – R08 and HR01 – HR08	Potential noise disturbance from building services plant	Plant noise limits have been set to ensure sensitive receptors are not affected. The plant noise limits are based on the measured background noise levels (L ₉₀) representative at each sensitive receptor.	Planning condition	Section 6, Appendix 10.2

10.9. Residual Effects

Table 10.9.1 provides a tabulated summary of the outcomes of the noise assessment of the proposed development.

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Table 10.9.1
Residual Effects

Stage	Receptor (sensitivity)	Description of Residual Effect and Any Additional Mitigation	Residual Effect						
			Magnitude post-mitigation	Scale of Effect and Significance	ADV / BEN	ST / MT/ LT	D/IND	P/T	R/IRR
Key: ADV/BEN= Adverse/Beneficial; ST/MT/LT = Short-term/Medium-term/Long-term; D/IND = Direct/Indirect; P/T = Permanent/Temporary; R/IRR = Reversible/Irreversible									
Demolition and Construction Stage	R01 – R03; R06 - R08 (High)	Noise impacts resulting from demolition and construction stage on-site activities on existing sensitive receptors	Very Small	Minor (not significant)	ADV	ST	D	T	IRR
Demolition and Construction Stage	R04 & R05 (High)	Noise impacts resulting from demolition and construction stage on-site activities on existing sensitive receptors, following the implementation of additional mitigation	Very Small	Minor (not significant)	ADV	ST	D	T	IRR
Demolition and Construction Stage	R01 – R08 (High)	Noise impacts resulting from demolition and construction traffic on existing sensitive receptors.	Very Small	Minor (not significant)	ADV	ST	D	T	IRR
Demolition and Construction Stage	R04 (High)	Vibration impacts resulting from demolition and construction site on-site activities on existing sensitive receptors	Small	Minor (not significant)	ADV	ST	D	T	IRR
Completed Development Stage	R03, R06 & HR04	Noise impacts resulting from road traffic generated during the completed development stage on existing and proposed sensitive receptors	No Impact	Negligible (not significant)	ADV	LT	D	P	IRR
Completed Development Stage	R01, R02, R04, R05, R07, R08, HR01, HR02, HR03, HR05-HR08 (High)	Noise impacts resulting from road traffic generated during the completed development stage on existing and proposed sensitive receptors	Very Small	Negligible (not significant)	BEN	LT	D	P	IRR
Completed Development Stage	R01, R02, R07, R08, HR01, HR02 & HR07, HR08 (High)	Noise impacts resulting from on-site operational activities (such as deliveries and servicing and plant) during the completed development stage on existing and proposed sensitive receptors	Very Small	Negligible (not significant)	ADV	LT	D	P	IRR
Completed Development Stage	R06 (High)	Noise impacts resulting from on-site operational activities (such as deliveries and servicing and plant) during the completed development stage on existing sensitive receptors, following the implementation of additional mitigation	Small	Minor (not significant)	ADV	LT	D	P	IRR
Completed Development Stage	R03-R05, and HR03-HR06 (High)	Noise impacts resulting from on-site operational activities (such as deliveries and servicing and plant) during the completed development stage on existing and proposed sensitive receptors, following implementation of additional mitigation	Medium	Moderate (significant)	ADV	LT	D	P	IRR

10.10. Noise: Inter-Development Cumulative Effects

The assessment of inter-development cumulative effects broadly takes place over two stages, the first of which is screening. The screening exercise undertaken for the cumulative schemes identified in Chapter 2: EIA Methodology of this volume of the ES, is included in Section 10.9. Those identified to have the potential to result in cumulative effects with the proposed development have been assessed in Section 1.10.2.

10.10.1. Screening of Cumulative Schemes

Table 10.10.1
Noise Inter-development Cumulative Effects Assessment: Cumulative Scheme Screening

Cumulative scheme	Scheme Description	Potential for cumulative effects?	Considered within assessment?
Land South of Ridleywood Lane and, East Of Bryn Lane, Wrexham Industrial Estate, Wrexham, LL13 9UT	Reserved Matters Pursuant to Outline Planning Permission P/2020/0167 (Appearance, Landscaping And Scale) - Erection Of Storage and Distribution Warehouse	As the scheme became operational in January 2023, there would be no cumulative effects during the demolition and construction stage of the proposed development. During the completed development stage, given that the scheme is located adjacent to the south-eastern corner of the application site, the scheme may result in noise effects from both traffic and on-site operational activities.	Yes - The scheme was operation in January 2023, therefore, traffic surveys done in March 2023 already included traffic from this development. The traffic generated from this scheme have therefore been captured within the existing baseline data and has been taken account in the effects previously reported in Section 10.7. Typical operational noise from the scheme has been included in the noise modelling, including HGV movements and loading/unloading noise.
Unit 6, Pacific Park, Bridge Road North, Wrexham	Erection of 2 new industrial units on land to the north of unit 6 Pacific Park	In respect of the demolition and construction stage, it is assumed that construction activities relating to the cumulative scheme will apply mitigation and good site practice, alongside a site specific CEMP, and therefore the residual effects of cumulative noise effects resulting from construction traffic are considered not significant.	Yes – effect considered in Table 10.10.2 below

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Cumulative scheme	Scheme Description	Potential for cumulative effects?	Considered within assessment?
Industrial Estate, Wrexham, LL13 9PN		During the completed development stage, the scheme may result in noise effects from traffic. Given the scheme is approximately 1km from the application site, inter-development cumulative effects from on-site works during the demolition and construction stage and completed development stage are not considered likely.	
Land Off, Ash Road South, Wrexham Industrial Estate, Wrexham, LL13 9UG	Erection of industrial unit comprising two storey office and warehouse accommodation and single storey dust extraction building and associated car parking and storage area	In respect of the demolition and construction stage, it is assumed that construction activities relating to the cumulative scheme will apply mitigation and good site practice, alongside a site specific CEMP, and therefore the residual effects of cumulative noise effects resulting from construction traffic are considered not significant. During the completed development stage, the scheme may result in noise effects from traffic. Given the scheme is approximately 500m from the application site, inter-development cumulative effects from on-site works during the demolition and construction stage and completed development stage are not considered likely.	Yes – noise effects from completed development traffic has been considered in Table 10.10.2 below
KSS2 Site	Allocated for 1,580 homes in the plan period	As set out in Chapter 2: EIA Methodology, whilst the criteria for cumulative schemes is typically limited to schemes that have been granted consent, the inclusion of the KSS2 allocation for the purpose of assessing transport-related impacts has been considered within the cumulative assessment as it is representative of a reasonable worst-case. The delivery of the KSS2 allocation would result in additional residential trips and HGV traffic within local highway network during the completed development stage. In respect of the demolition and construction stage, given that no applications have been submitted so far in connection with the KSS2 site, it is unlikely that there will be an overlap in construction programs and as such, cumulative traffic impacts during the construction stage are not anticipated. In respect of potential inter-development cumulative effects resulting from on-site activities during the completed development stage, the KSS2 site is located at a distance sufficient enough the application site and as such significant effects are not considered likely.	Yes – noise effects from completed development traffic has been considered in Table 10.10.2 below

10.10.2. Inter-Development Cumulative Effects Assessment

Table 10.10.2
Noise: Inter-development Cumulative Effects Assessment

Receptor(s) affected	Receptor Sensitivity	Scenario 2 - 2030 Future Baseline Noise Level $L_{A10,18hr}$ (dB)	Scenario 4 Future 2030 Baseline + Development Traffic + Cumulative Traffic Noise Level $L_{A10,18hr}$ (dB)	Change between 2030 Baseline Noise Level and Scenario B (dB)	Description of Impact	Magnitude of Impact	Scale of Effect and Significance	Additional Mitigation proposed?	Further information
R01 (Harcourt, Ridley Wood)	High	44.7	43.0	-1.7	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.2
R02 (2 Bryn Lane)	High	61.8	62.2	0.4	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Adverse (not significant)	No	Section 5.1, Appendix 10.2
R03 (Spring Grove, Hugmore Lane)	High	63.4	63.6	0.2	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Adverse (not significant)	No	Section 5.1, Appendix 10.2
R04 (Ty Gwanwyn, Hugmore Lane)	High	48.4	46.9	-1.5	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.2
R05 (Holt Lodge Farm)	High	45.7	44.9	-0.8	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.2
R06 (Ambergate, Hugmore Lane)	High	53.5	53.6	0.1	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Adverse (not significant)	No	Section 5.1, Appendix 10.2
R07 (Yr Efail, Wrexham Road)	High	41.6	41.5	-0.1	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.2
R08 (Aldersey Farm)	High	44.3	44.2	-0.1	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.2

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Receptor(s) affected	Receptor Sensitivity	Scenario 2 - 2030 Future Baseline Noise Level L _{A10,18hr} (dB)	Scenario 4 Future 2030 Baseline + Development Traffic + Cumulative Traffic Noise Level L _{A10,18hr} (dB)	Change between 2030 Baseline Noise Level and Scenario B (dB)	Description of Impact	Magnitude of Impact	Scale of Effect and Significance	Additional Mitigation proposed?	Further information
HR01 (Hotel northern façade)	High	55.9	55.7	-0.2	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.2
HR02 (Hotel north- eastern façade)	High	55.7	55.4	-0.3	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.2
HR03 (Hotel eastern façade)	High	56.0	55.9	-0.1	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.2
HR04 (Hotel south- eastern façade)	High	56.4	56.5	0.1	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Adverse (not significant)	No	Section 5.1, Appendix 10.2
HR05 (Hotel southern façade)	High	56.7	56.9	0.2	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Adverse (not significant)	No	Section 5.1, Appendix 10.2
HR06 (Hotel south- western façade)	High	56.9	57.1	0.2	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Adverse (not significant)	No	Section 5.1, Appendix 10.2
HR07 (Hotel western façade)	High	56.4	56.5	0.1	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Adverse (not significant)	No	Section 5.1, Appendix 10.2
HR08 (Hotel north- western façade)	High	56.2	56.0	-0.2	Given that the change is less than 3 dB threshold, the impact magnitude is very small	Very Small	Negligible Beneficial (not significant)	No	Section 5.1, Appendix 10.2

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