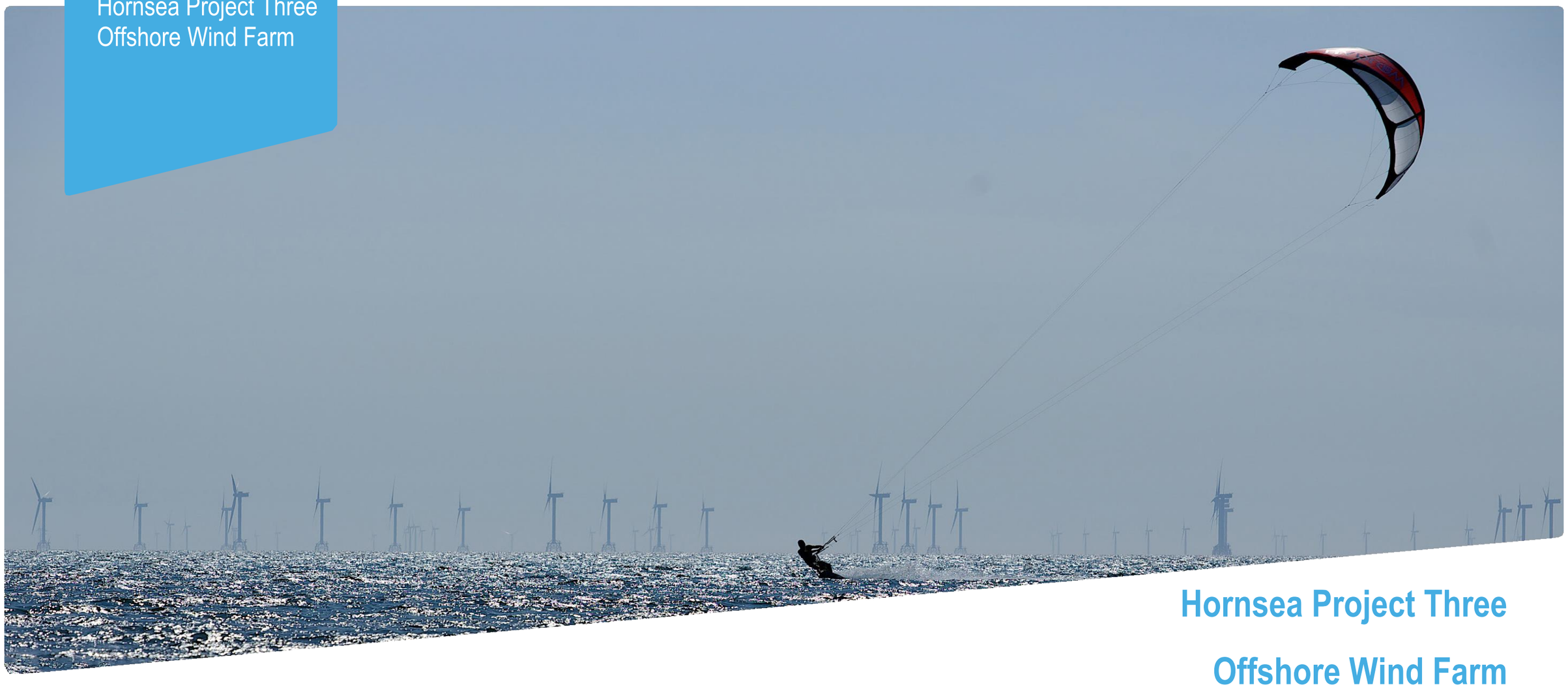
Hornsea Project Three
Offshore Wind Farm



Hornsea Project Three

Offshore Wind Farm

Environmental Statement:
Volume 6, Annex 8.4 – Operational Noise Model Output

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Date: May 2018

Hornsea 3
Offshore Wind Farm

Ørsted

Environmental Impact Assessment

Environmental Statement

Volume 6

Annex 8.4 – Operational Noise Model Output

Liability

This report has been prepared by RPS, with all reasonable skill, care and diligence within the terms of their contracts with Orsted Power (UK) Ltd.

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Glossary

Term	Definition
Decibel (dB)	Units of sound measurement and noise exposure measurement.
Equivalent continuous sound pressure level	Defined in BS 7445 (BSI, 2003) as the "value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T, has the same mean square sound pressure as a sound under consideration whose level varies with time" (i.e. it is a measure of the noise dose or exposure over a period). It is a unit commonly used to describe construction noise and noise from industrial premises and is the most suitable unit for the description of other forms of environmental noise. It is also the unit best suited to assessing community response.
Noise and Sound	Response to sound can be subjective and is affected by many factors, both acoustic and non-acoustic. The significance of its impact, for example, can depend on such factors as the margin by which a sound exceeds the background sound level, its absolute level, time of day and change in the acoustic environment, as well as local attitudes to the source of the sound and the character of the neighbourhood. Sound can be measured by a sound level meter or other measuring system. Noise is related to a human response and is routinely described as unwanted sound, or sound that is considered undesirable or disruptive.
Onshore elements of Hornsea Three	Hornsea Three landfall, onshore cable corridor, the onshore HVAC booster station, the onshore HVDC converter/HVAC substation and the interconnection with the Norwich Main National Grid substation.
Rating level, $L_{Ar,Tr}$	BS 4142 (BSI, 2014a) defines the rating level as 'The specific noise level plus any adjustment for the characteristic features of the noise.'
Receptor	A component of the natural or man-made environment that is affected by an impact, including people.
Slow/Fast Time Weighting	The response speed of the detector in a sound level meter. Slow response time is 1 second; fast response time is 1/8 second (0.125 seconds) and will detect changes in sound levels more rapidly than measurements made with Slow time-weighting.
Sound	See "Noise and Sound"
Sound Power Level (SWL, Lw)	A sound power level is a measure of the total power radiated as sound by a source in all directions. It is a property of the source and is essentially independent of the measuring environment. The sound power level of a source is expressed in decibels (dB) and is equal to 10 times the logarithm to the base 10 of the ratio of the sound power of the source to a reference sound power. The reference sound power in air is normally taken to be 10^{-12} watt.
SoundPLAN®	A computer software package that uses a ray-tracing numerical modelling approach to predict acoustic propagation from industrial and/or transport sound sources. The prediction methodologies follow national and international standards, such as ISO 9613 part 1.
Sound Pressure Level	Sound pressure is the dynamic variation of the static pressure of air and is measured in force per unit area. Sound pressure is normally represented on a logarithmic amplitude scale, which gives a better relationship to the human perception of hearing. The sound pressure level is expressed in decibels and is equal to 20 times the logarithm to the base 10 of the ratio of the sound pressure at the measurement location to a reference sound pressure. The reference sound pressure in air is normally taken to be 20 µPa, which roughly corresponds to the threshold of human hearing.
Specific sound level, $L_{Aeq,Tr}$	BS 4142 (BSI, 2014a) defines the specific sound level as the 'equivalent continuous A-weighted sound pressure level produced by the specific sound source over a given reference time interval.'
Tonal	Sound sources sometimes contain audible or measurable components that can be identified as hums, whistles etc. The presence of these tonal components is sometimes considered to add an extra, annoying quality to the sound.

Acronyms

Acronyms	Description
BS	British Standard
ES	Environmental Statement
EPA	Environmental Protection Act 1990
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IEMA	Institute of Environmental Management and Assessment
$L_{Aeq,T}$	See "Equivalent continuous sound pressure level".
L_{Amax}	Maximum value of the A-weighted sound pressure level, measured using the fast (F) time weighting (in dBA).
L_{A90}	See "Background sound level".
LOAEL	Lowest Observed Adverse Effect Level
NPS	National Policy Statement
NSR	Noise Sensitive Receptors
NPSE	Noise Policy Statement for England
OS	Ordnance Survey
SOAEL	Significant Observed Adverse Effect Level
SPL	Sound pressure level
SWL	Sound power level

Units

Unit	Description
GW	Gigawatt (power)
dB	Sound pressure level referenced to 20 µPa.

1. Operational Noise Model Output

1.1. Introduction

1.1.1.1. This annex presents the results of modelling for the operational noise imissions from the onshore HVAC booster station and onshore HVDC converter/HVAC substation, and has been used to inform the assessment carried out in volume 3, chapter 8: Noise and Vibration. It is noted that the results from this modelling identify the magnitude of the impact caused by Hornsea Three and are based on the unmitigated scenario. These results have been used to inform the degree of noise mitigation which will be required to achieve an acceptable impact magnitude at the Noise Sensitive Receptors (NSRs).

1.1.1.2. Assumptions of the plant, operating conditions and the noise model parameters utilised in the modelling are set out in annex 8.3: Operational Noise Model Input, based on information of potentially noisy plant given by the technology provider. No operational plant other than the onshore HVAC booster station and onshore HVDC converter/HVAC substation will generate noise.

1.1.1.3. This annex also provides the legislative and planning policy framework which provides the context for the noise assessment and the factors that have been considered.

1.1.1.1 Results of baseline noise surveys, undertaken at noise sensitive receptor locations to establish the existing noise environment in the locations around the onshore HVAC booster station and onshore HVDC converter/HVAC substation, are presented in annex 8.1: Baseline Noise Survey. All survey locations were agreed with North Norfolk District Council and South Norfolk District Council.

1.2. Guidance specific to operational noise

1.2.1. Introduction

1.2.1.1. The numeric results of the operational noise model and assessment of the magnitude of the potential impact are provided in this document. Assessment of the magnitudes of impacts, alongside sensitivities of the receptors to reach a conclusion of the significance of the potential effects is provided within volume 3, chapter 8: Noise and Vibration.

1.2.1.2. The guidance set out below has been used within volume 3, chapter 8: Noise and Vibration as part of the assessment methodology in the determination of the significance of operational noise effects.

1.2.2. British Standard (BS) 4142:2014 – Methods for rating and assessing industrial and commercial sound

1.2.2.1. BS 4142:2014 (BSI, 2014a) describes a method for rating and assessing sound of an industrial and/or commercial nature. The standard is applicable to the determination of the rating level of industrial or commercial sound as well as the ambient, background and residual noise levels for the purposes of investigating complaints, assessing sound from proposed new, modified or additional sources, or assessing sound at proposed new dwellings. The determination of whether a noise amounts to a nuisance is beyond the scope of the standard, as is rating and assessment of indoor noise levels.

1.2.2.2. BS 4142:2014 states that the standard is not intended to be applied to the rating and assessment of sound from other sources falling within the scope of other standards or guidance.

1.2.2.3. The standard compares the 'rating level' of the noise (i.e. the specific noise level from the site under investigation adjusted using rating correction 'penalties' for acoustic character such as tonality or impulsiveness) with the pre-existing background sound level, to give a rating level difference.

1.2.2.4. The standard provides a numerical method to derive an initial estimate of the impact, which states that:

"The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context."

1.2.2.5. Clause 11 of the standard specifies that:

"Typically, the greater this difference [between rating level and background sound], the greater the magnitude of impact; a difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context; a difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context; and 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. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context."

1.2.2.6. The standard notes that:

"Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact."

1.2.2.7. It goes on to state that:

"[W]here the initial estimate of the impact needs to be modified due to the context, take all pertinent factors into consideration, including the following:

1) The absolute level of sound. For a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low. Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night. Where residual sound levels are very high, the residual sound might itself result in adverse impacts or significant adverse impacts, and the margin by which the rating level exceeds the background might simply be an indication of the extent to which the specific sound source is likely to make those impacts worse.

2) The character and level of the residual sound compared to the character and level of the specific sound. Consider whether it would be beneficial to compare the frequency spectrum and temporal variation of the specific sound with that of the ambient or residual sound, to assess the degree to which the specific sound source is likely to be distinguishable and will represent an incongruous sound by comparison to the acoustic environment that would occur in the absence of the specific sound. Any sound parameters, sampling periods and averaging time periods used to undertake character comparisons should reflect the way in which sound of an industrial and/or commercial nature is likely to be perceived and how people react to it.

NOTE 3 Consideration ought to be given to evidence on human response to sound and, in particular, industrial and/or commercial sound where it is available. A number of studies are listed in the "Effects on humans of industrial and commercial sound" portion of the "Further reading" list in the Bibliography.

3) The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions, such as:

i) façade insulation treatment;

ii) ventilation and/or cooling that will reduce the need to have windows open so as to provide rapid or purge ventilation; and

iii) acoustic screening."

1.2.2.8. Other pertinent factors include professional judgement, the sound environment, the situational context and the circumstances of the assessment.

1.2.2.9. The standard notes that where background sound levels and rating levels are both "low", absolute noise levels might be as, or more, relevant than the margin by which the rating level exceeds the background, especially at night.

1.2.2.10. With regards to the rating correction, paragraph 9.2 of BS 4142 states:

"Consider the subjective prominence of the character of the specific sound at the noise-sensitive locations and the extent to which such acoustically distinguishing characteristics will attract attention."

1.2.2.11. The commentary to paragraph 9.2 of BS 4142:2014 suggests the following subjective methods for the determination of the rating penalty for tonal, impulsive and/or intermittent specific sounds:

"Tonality - For sound ranging from not tonal to prominently tonal the Joint Nordic Method gives a correction of between 0 dB and +6 dB for tonality. Subjectively, this can be converted to a rating penalty of 2 dB for a tone which is just perceptible at the noise receptor, 4 dB where it is clearly perceptible, and 6 dB where it is highly perceptible.

Impulsivity – A correction of up to +9 dB can be applied for sound that is highly impulsive, considering both the rapidity of the change in sound level and the overall change in sound level. Subjectively, this can be converted to a penalty of 3 dB for impulsivity which is just perceptible at the noise receptor, 6 dB where it is clearly perceptible, and 9 dB where it is highly perceptible.

Other sound characteristics - Where the specific sound features characteristics that are neither tonal nor impulsive, though otherwise are readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.

Intermittency - When the specific sound has identifiable on/off conditions, the specific sound level ought to be representative of the time period of length equal to the reference time interval which contains the greatest total amount of on time. … If the intermittency is readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied."

1.2.2.12. The above rating penalties are established based on a subjective assessment of the characteristics of the sound as determined at the NSRs. An objective assessment method is not applicable as the specific sound from the proposed noise sources are based on predictions.

1.2.3. Institute of Environmental Management and Assessment Guidelines for Noise Impact Assessments

1.2.3.1. The Institute of Environmental Management and Assessment (IEMA) Guidelines for Noise Impact Assessments use a similar type of classification method as the Noise Policy Statement England (NPSE) with regards to defining the generic relationship between impact magnitude and noise effect.

1.2.3.2. The IEMA Guidelines provide guidance on key principles of noise impact assessments that are applicable to all development proposals where noise effects are likely to occur. They cover:

- How to scope a noise assessment;
- Issues to be considered when defining the baseline noise environment;
- Prediction of changes in noise levels as a result of implementing development proposals; and

- Definition and evaluation of the significance of the effect of changes in noise levels.

1.2.3.3. The document provides definitions of terminology to be used in a noise impact assessment:

- Noise Impact – the difference between the acoustic environment before and after the implementation of the proposals (also known as the magnitude of change);
- Noise Effect – the consequence of the noise impact (e.g. a change in annoyance caused, disturbance due to the change in acoustic environment or potential to change the character of the area such that there is a perceived change in the quality of life); and
- Significance of Effect – the evaluation of the Noise Effect and whether or not it is significant.

1.2.3.4. When the impact of a scheme has been suitably described and assessed, the guidelines state that it is then necessary to assess the effect of the development on receptors likely to be impacted. The guidance sets out a generic scale for describing a range of effects on a receptor, as shown in Table 1.1. The generic scale is used to match the disparate ratings provided by the various acoustics standards into a single scale of impact within the Environmental Impact Assessment process.

Table 1.1: IEMA guidelines: description of effect and likely significance.

Magnitude	Description of Effect	Significance
Severe (Major)	Receptor perception = Physically harmful Significant changes in behaviour and/or inability to mitigate effect of noise leading to psychological stress or physiological effects (e.g. regular sleep deprivation/ awakening; loss of appetite, significant medically definable harm, (e.g. auditory and non-auditory)).	Significant
Substantial (Moderate)	Receptor perception = Disruptive Causes a material change in behaviour and/or attitude (e.g. avoiding certain activities during periods of intrusion). Potential for sleep disturbance resulting in difficulty getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in character of the area.	More Likely to be Significant (Greater justification needed - based on impact magnitude and receptor sensitivities - to justify a non-significant effect) ↑ ↓ Less Likely to be Significant. (Greater justification needed - based on impact magnitude and receptor sensitivities - to justify a significant effect)
Moderate (Minor)	Receptor perception = Intrusive Noise can be heard and causes small changes in behaviour and/or attitude (e.g. turning up volume of TV; speaking more loudly; closing windows). Potential for non-awakening sleep disturbance. Affects the character of the area such that there is a perceived change in the quality of life.	
Slight (Negligible)	Receptor perception = Non-intrusive Noise impact can be heard, but does not cause any change in behaviour or attitude (e.g. turning up volume of TV; speaking more loudly; closing windows). Can slightly affect the character of the area but not such that there is a perceived change in the quality of life.	
No Effect (No change)	N/A = No discernible effect on the receptor.	Not Significant

This table had been adapted from the IEMA Guidelines for Environmental Noise Impact Assessment Table 7-7 "*Generic Relationship Between Noise Impact (Magnitude) and Noise Effect (Magnitude + Sensitivity) Including the Evaluation of Effect Significance*".

1.2.3.5. British Standard 4142:2014 and the IEMA guidelines have been used in the annex to inform the recommended level of noise attenuation provided in section 1.3.

1.3. Operational noise model results

1.3.1.1. Noise predictions have been made for each residential property within the Hornsea Three noise and vibration study area at the onshore HVDC converter/HVAC substation and onshore HVAC booster station, as defined in volume 3, chapter 8: Noise and Vibration. The properties considered (across the onshore elements of Hornsea Three) include residential, guest accommodation, residential care and residential education facilities.

1.3.1.2. Two Public Rights of Way (PRoW) are identified within the operational noise and vibration study area. The nearest PRoW to the onshore HVDC converter/HVAC substation site boundary is south of Mangreen Lane; the nearest PRoW to the onshore HVAC booster station runs through Barringham Green Plantation and around New Covert woods. No other non-residential NSRs have been identified within the operational noise study area.

1.3.1.3. Residential locations and usage has been derived from Ordnance Survey (OS) AddressBase data. The AddressBase data provides a single x-y grid point reference for each property. The point usually falls within the main buildings associated with that address. Therefore, to ensure that all NSRs located on the boundary of (or partially marginally outside) the Hornsea Three noise and vibration study area are included in the noise assessment, the operational noise model provides results for an area marginally larger that the noise and vibration study area. For example, a property with its coordinates at 1.01 km from the onshore elements of Hornsea Three may still have a building façade within 1 km; similarly, gardens (and other attached external amenity areas) may extend some distance from the AddressBase coordinates. These properties are considered to lie within the Hornsea Three noise and vibration study area for the purpose of this modelling.

1.3.1.4. From the OS AddressBase data, 315 properties were identified within the Hornsea Three noise and vibration study area at the onshore HVDC converter/HVAC substation; and 18 properties within the noise and vibration study area at the onshore HVAC booster station.

1.3.1.5. Predicted noise levels at the NSRs identified are provided in Appendix A, Table A.1 for the onshore HVDC converter/HVAC substation and Table A.2 for the onshore HVAC booster station. Noise levels are provided for both ground floor and 1st floor heights. No distinction is made for buildings of other heights within this assessment; higher floors (if any) would have similar levels to those at 1st floor level; assessment of single-storey dwellings would tend to be assessed as worst-case, as 1st floor noise levels are generally higher than at ground floor. Table A.1 and Table A.2 also include BS 4142 initial estimates of impact for the onshore HVDC converter/HVAC substation and onshore HVAC booster station respectively.

Counts of properties by impact band are provided in Table A.3 and

1.3.1.6. Table A.4. The initial estimates of impact are based on the criteria below in Table 1.2. These criteria are based on the BS 4142 standard, informed by the IEMA Guidelines and National Planning Policy, and relates to the degree of change in sound levels compared to baseline. These criteria are considered appropriate for residential properties only. BS 4142 directs that the numeric assessment be made to make initial estimate of impact of the specific sound. The initial estimate may then need to be modified due to the context, which includes the absolute sound level; character and level of the residual sound; and sensitivity of receptor, based on professional judgement.

Table 1.2: BS 4142 Rating Difference Criteria.

Magnitude of impact	BS4142 Rating Difference Criteria: Specific level – background
Major	> 10 dB
Moderate	+5 to +10 dB
Minor	-5 dB to +5 dB
Negligible/No change	> -5 dB

1.3.1.7. Assessment is made against the above criteria for both the daytime period for ground floor levels; and night-time period for 1st floor levels. Representative baseline background noise levels have been determined for the study areas around the onshore HVDC converter/HVAC substation and onshore HVAC booster station. Full results are provided in annex 8.1: Baseline Noise Survey, and are summarised in Table 1.3.

Table 1.3: Representative Baseline Background Noise Levels.

Period	Representative Noise Level L_{A90}
Onshore HVDC converter/HVAC substation	
Daytime, T=16hr	45
Night-time, T=8hr	30
Onshore HVAC booster station	
Daytime, T=16hr	31
Night-time, T=8hr	26

1.3.1.8. Formal consideration of the significance of the effects of noise impacts are given in volume 3, chapter 8: Noise and Vibration. However, a summary of the impact magnitudes is provided below.

1.3.2. Onshore HVDC converter/HVAC substation

1.3.2.1. The operational noise assessment for the HVDC converter/HVAC substation is based on the HVAC substation layout and plant list generated by the technology providers. With alternate layouts or an HVDC converter station, noise levels across the surrounding area would likely be similar. To ensure that the mitigated impacts reported here remain accurate, any mitigation solution would ensure that plant noise levels at the surrounding NSRs are not increased above those reported, including any correction for noise character.

1.3.2.2. Predicted noise levels for the 315 residential properties identified are provided in Table A.1. Predicted operational noise levels external to the properties ranged from 46 dB L_{Aeq} to 29 dB L_{Aeq}. A contour plot of the predicted noise levels at 4 m height is provided in Figure 1.1. Predicted noise levels remain the same between day and night-time periods.

1.3.2.3. For the onshore HVDC converter/HVAC substation, with the unmitigated operational plant, during the daytime, 13 properties are identified as experiencing an impact with a minor adverse magnitude, with the remainder experiencing no change or negligible adverse impact magnitude. The magnitudes of impact for the unmitigated scheme in the night-time are: 16 major adverse impacts; 197 moderate adverse impacts; and 102 minor adverse impacts. Impacts with a magnitude of minor adverse may continue beyond the 1 km study area. Fewer impacts would occur during the day, due to the higher existing background noise levels.

1.3.2.4. Mitigation will be implemented to reduce the overall noise emitted by the operational onshore HVDC converter/HVAC substation, to minimise the likelihood of adverse impacts with a moderate or major magnitude (see Table 8.21 of volume 3, chapter 8: Noise and Vibration for built in mitigation). Therefore, for the particular scenario modelled, mitigation would be provided to achieve an overall reduction of -12 dB in the overall noise emitted from the onshore HVDC converter/HVAC substation, such that the overall noise would reduce to a maximum of 34 dB $L_{Ar,Tr}$ at the nearest (or any) residential NSR (see Table A.1), and no impacts with a magnitude greater than minor adverse would occur.

1.3.2.5. The type of mitigation that will be implemented to achieve the maximum of 34 dB $L_{Ar,Tr}$ at the nearest (or any) residential NSR will be agreed and demonstrated during the detailed design stage. Mitigation is likely to include the use of acoustic enclosures, placing equipment inside buildings, or other potential measures to be agreed prior to the commencement of works. Provided that the resulting rating level (corrected for character if appropriate) does not exceed 34 dB $L_{Ar,Tr}$ at any receptor, it is not necessary for a particular level of reduction (for example, the -12 dB reduction identified above) to be demonstrated at every receptor. The mitigated contours and predicted levels following mitigation therefore, are indicative of likely levels rather than committed levels. The mitigation commitment is that a rating level that does not exceed 34 dB $L_{Ar,Tr}$ at any receptor is achieved.

1.3.2.6. For the particular scenario modelled, a contour plot of the predicted noise levels at 4 m height attenuated by -12 dB is provided in Figure 1.2. A summary of the residual impacts with a range of attenuation levels from -1 dB to -18 dB is provided in Table A.5.

1.3.2.7. In the specification of plant associated with the onshore HVDC converter/HVAC substation, the operational noise model assumes that the overall sound resulting from the operation of the facility be non-tonal and non-impulsive as determined at the NSR (to the specification of BS 4142:2014). Where this cannot be achieved, additional mitigation or reduction in plant noise source level would be made such as to achieve a similar rating level as would be produced by non-tonal plant, again allowing for a rating correction as defined in BS 4142:2014.

1.3.2.8. With mitigation, operational noise beyond the onshore HVDC converter/HVAC substation site boundary is below levels which would result in any detriment to outdoor public use of space. The nearest PRoW, south of Mangreen Lane, would experience levels of below 30 dB L_{Aeq}, equating to negligible impact for its section nearest the site.

1.3.3. Onshore HVAC booster station

1.3.3.1. Predicted noise levels for the 18 residential properties identified are provided in the attached Table A.2. Predicted operational noise levels external to the properties ranged from 25 dB L_{Aeq} to 16 dB L_{Aeq}. A contour plot of the predicted noise levels at 4 m height is provided in Figure 1.3. Predicted noise levels remain the same between day and night-time periods.

1.3.3.2. For the onshore HVAC booster station, with the unmitigated operational plant, during the daytime, no properties are identified as experiencing an impact with a minor, moderate or major adverse magnitude; all 18 identified properties are predicted to experience no change or an impact with a negligible adverse magnitude. However, during the night-time, 13 properties were identified which would experience impacts with a minor adverse magnitude, with five properties experiencing no change or negligible impact magnitude. Minor adverse effects may continue beyond the 1 km study area. No impacts with major or moderate magnitude were predicted for the daytime or night-time.

1.3.3.3. The operational noise beyond the onshore HVAC booster station site boundary is below levels which would result in any detriment to outdoor public use of space. The nearest PRoW, running through Barringham Green Plantation and around New Covert woods, would experience levels of below 35 dB L_{Aeq}, equating to negligible impact for its section nearest the site.

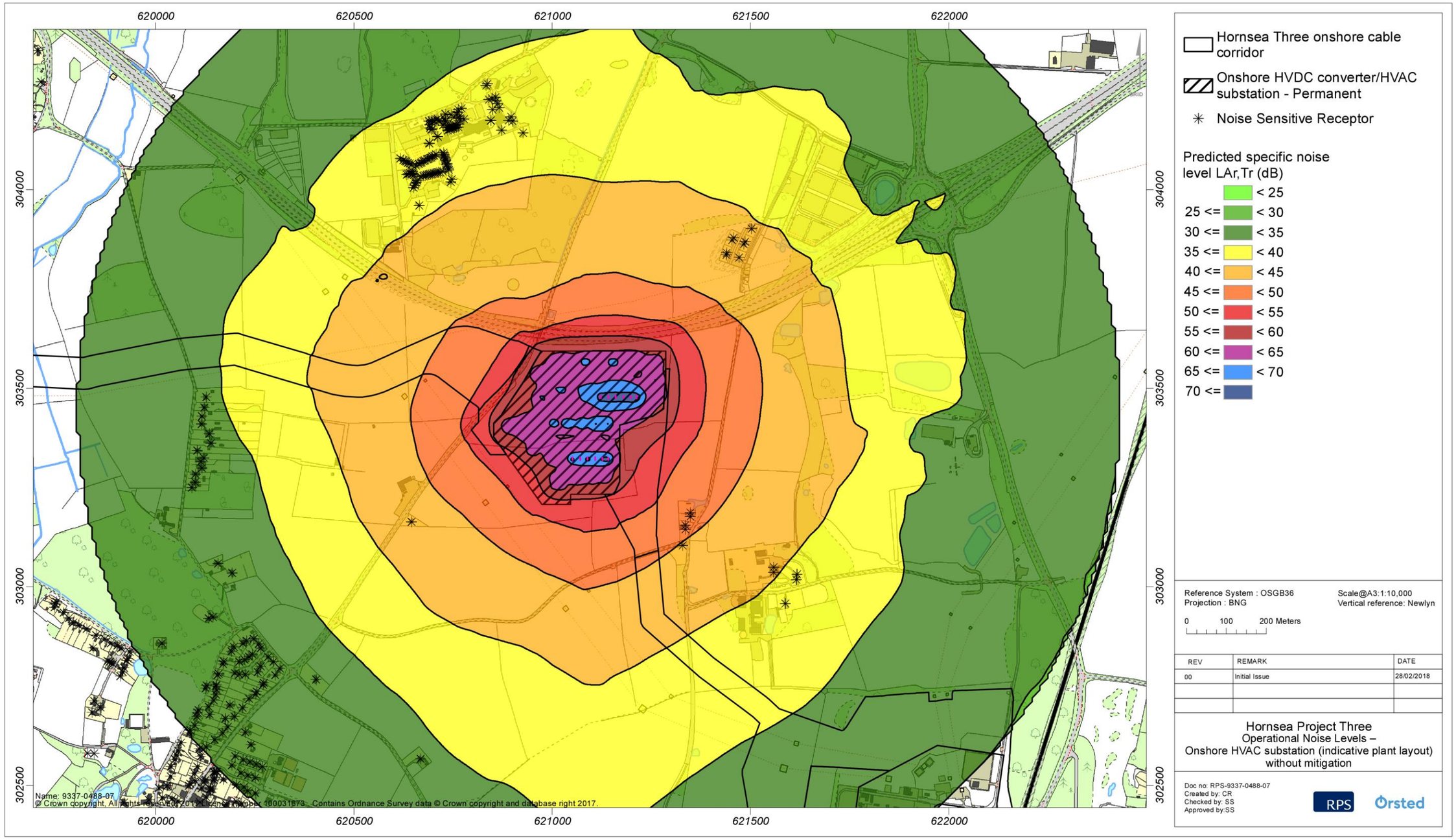

Figure 1.1: Operational noise levels - onshore HVAC substation (indicative plant layout) without mitigation predicted LAeq at 4m above local ground.

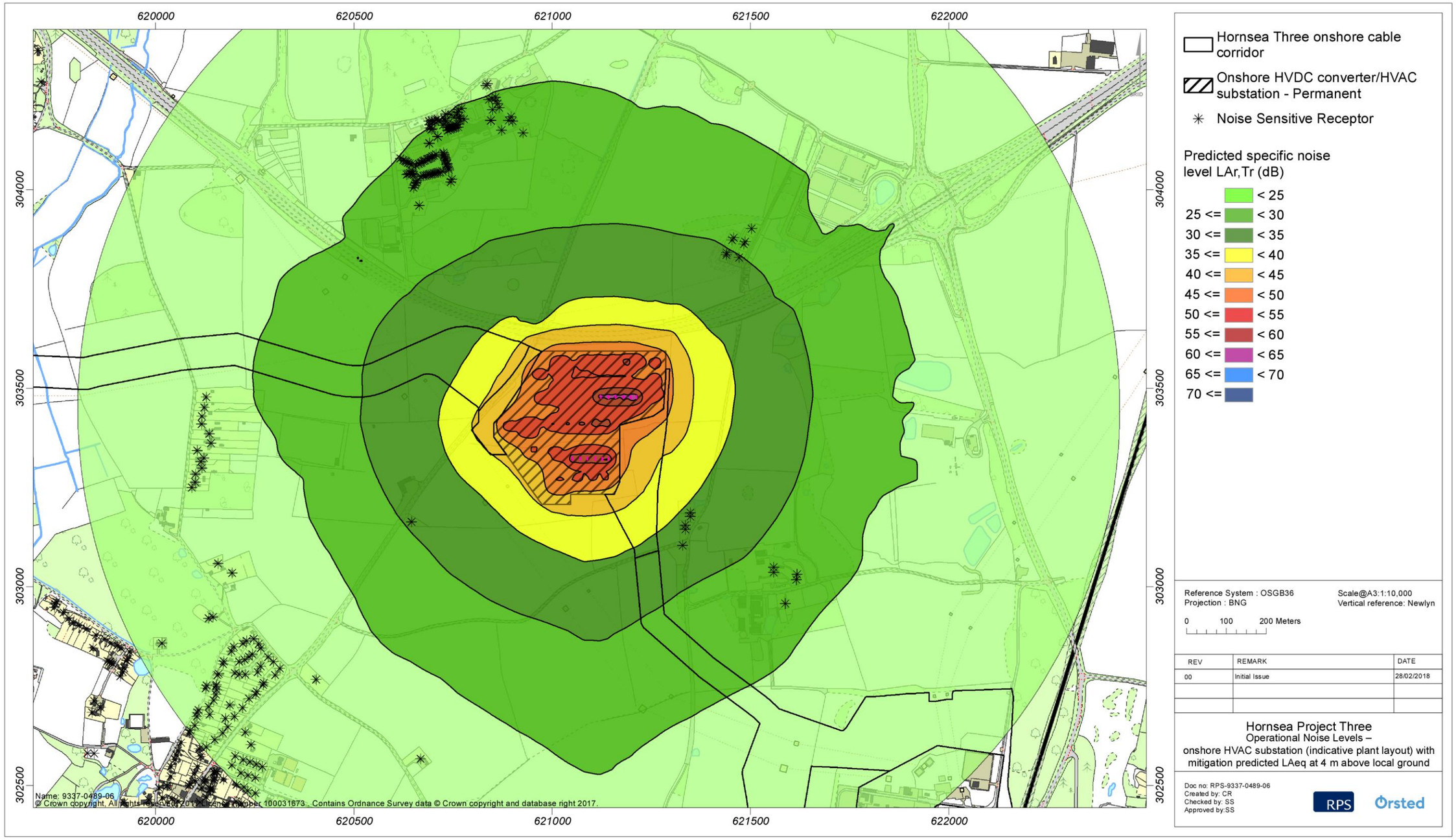

Figure 1.2: Operational noise levels - onshore HVAC substation (indicative plant layout) with mitigation predicted LAr,Tr at 4m above local ground.

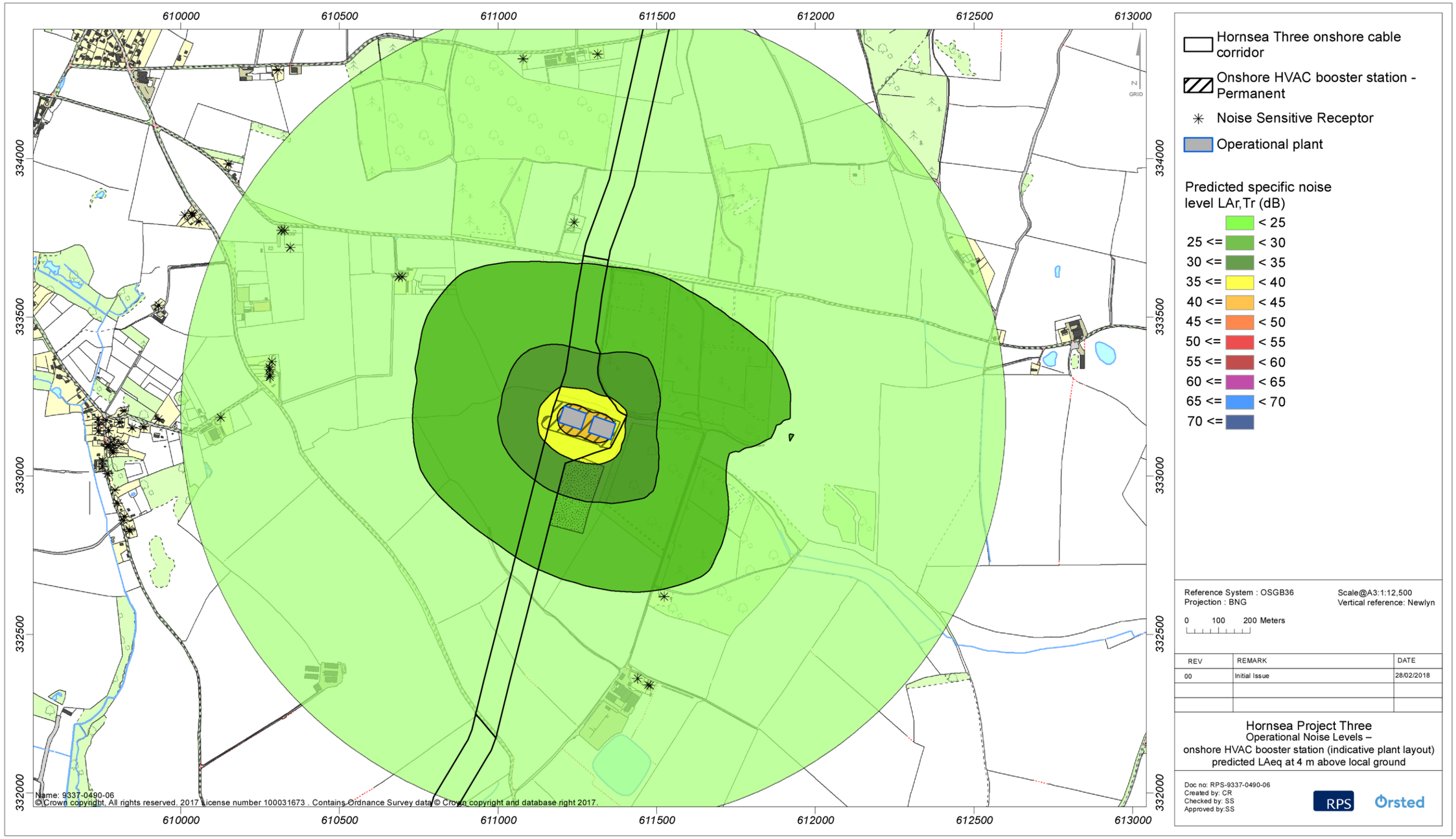

Figure 1.3: Operational noise levels - onshore HVAC booster station (indicative plant layout) predicted LAeq at 4 m above local ground.

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Appendix A Summary of the Impact Magnitude

Table A.1: Operational Noise Levels - onshore HVDC converter/HVAC substation.

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
2	1 Alexander Court	GF	35.7	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
2	1 Alexander Court	F 1	37.3	-8	-	7	Moderate	-20	-	-5	Minor
12	1 Bishop Pelham Court	GF	34.9	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
12	1 Bishop Pelham Court	F 1	36.7	-8	-	7	Moderate	-20	-	-5	None/Negligible
13	1 Bobbins Way	GF	30.2	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
13	1 Bobbins Way	F 1	31.3	-14	-	1	Minor	-26	-	-11	None/Negligible
16	1 Bridle Lane	GF	35.2	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
16	1 Bridle Lane	F 1	37.1	-8	-	7	Moderate	-20	-	-5	Minor
17	1 Brooks Green	GF	41.0	-4	Minor	11	-	-16	None/Negligible	-1	-
17	1 Brooks Green	F 1	42.3	-3	-	12	Major	-15	-	0	Minor
28	1 Coach House Mews	GF	35.5	-9	None/Negligible	6	-	-21	None/Negligible	-7	-
28	1 Coach House Mews	F 1	37.2	-8	-	7	Moderate	-20	-	-5	Minor
29	1 College Lane	GF	34.8	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
29	1 College Lane	F 1	36.6	-8	-	7	Moderate	-20	-	-5	None/Negligible
34	1 Eaton Gate	GF	30.5	-14	None/Negligible	1	-	-26	None/Negligible	-12	-
34	1 Eaton Gate	F 1	31.3	-14	-	1	Minor	-26	-	-11	None/Negligible
35	1 Ellis Gardens	GF	36.6	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
35	1 Ellis Gardens	F 1	38.3	-7	-	8	Moderate	-19	-	-4	Minor
38	1 Gerard Hudson gardens	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
38	1 Gerard Hudson Gardens	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
47	1 Hall Farm Cottages	GF	31.9	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
47	1 Hall Farm Cottages	F 1	33.1	-12	-	3	Minor	-24	-	-9	None/Negligible
52	1 Hillside Close	GF	32.0	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
52	1 Hillside Close	F 1	32.9	-12	-	3	Minor	-24	-	-9	None/Negligible

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
62	1 Low Road	GF	29.9	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
62	1 Low Road	F 1	30.8	-14	-	1	Minor	-26	-	-11	None/Negligible
63	1 Manor Cottages	GF	31.2	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
63	1 Manor Cottages	F 1	32.8	-12	-	3	Minor	-24	-	-9	None/Negligible
68	1 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
68	1 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
90	2 Alexander Court	GF	35.7	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
90	2 Alexander Court	F 1	37.3	-8	-	7	Moderate	-20	-	-5	Minor
98	2 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
98	2 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
101	2 Bridle Lane	GF	37.9	-7	None/Negligible	8	-	-19	None/Negligible	-4	-
101	2 Bridle Lane	F 1	39.5	-5	-	10	Moderate	-17	-	-3	Minor
102	2 Brooks Green	GF	40.8	-4	Minor	11	-	-16	None/Negligible	-1	-
102	2 Brooks Green	F 1	42.2	-3	-	12	Major	-15	-	0	Minor
110	2 Coach House Mews	GF	35.5	-9	None/Negligible	6	-	-21	None/Negligible	-7	-
110	2 Coach House Mews	F 1	37.2	-8	-	7	Moderate	-20	-	-5	Minor
111	2 College Lane	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
111	2 College Lane	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
116	2 Eaton Gate	GF	30.5	-14	None/Negligible	1	-	-26	None/Negligible	-12	-
116	2 Eaton Gate	F 1	31.3	-14	-	1	Minor	-26	-	-11	None/Negligible
117	2 Ellis Gardens	GF	36.8	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
117	2 Ellis Gardens	F 1	38.4	-6	-	8	Moderate	-18	-	-4	Minor
127	2 Hall Farm Cottages	GF	31.9	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
127	2 Hall Farm Cottages	F 1	33.1	-12	-	3	Minor	-24	-	-9	None/Negligible
132	2 Hillside Close	GF	31.9	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
132	2 Hillside Close	F 1	32.7	-12	-	3	Minor	-24	-	-9	None/Negligible
142	2 Manor Cottages	GF	31.3	-14	None/Negligible	1	-	-26	None/Negligible	-11	-

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
142	2 Manor Cottages	F 1	32.8	-12	-	3	Minor	-24	-	-9	None/Negligible
150	2 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
150	2 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
172	3 Alexander Court	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
172	3 Alexander Court	F 1	37.4	-7	-	7	Moderate	-19	-	-5	Minor
181	3 Bishop Pelham Court	GF	35.0	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
181	3 Bishop Pelham Court	F 1	36.8	-8	-	7	Moderate	-20	-	-5	None/Negligible
182	3 Bobbins Way	GF	30.4	-14	None/Negligible	0	-	-26	None/Negligible	-12	-
182	3 Bobbins Way	F 1	31.4	-13	-	1	Minor	-25	-	-11	None/Negligible
184	3 Bridle Lane	GF	35.3	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
184	3 Bridle Lane	F 1	37.3	-8	-	7	Moderate	-20	-	-5	Minor
185	3 Brooks Green	GF	40.2	-5	Minor	10	-	-17	None/Negligible	-2	-
185	3 Brooks Green	F 1	41.6	-3	-	12	Major	-15	-	0	Minor
196	3 Coach House Mews	GF	35.6	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
196	3 Coach House Mews	F 1	37.2	-8	-	7	Moderate	-20	-	-5	Minor
197	3 College Lane	GF	35.0	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
197	3 College Lane	F 1	36.8	-8	-	7	Moderate	-20	-	-5	None/Negligible
201	3 Eaton Gate	GF	30.2	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
201	3 Eaton Gate	F 1	31.0	-14	-	1	Minor	-26	-	-11	None/Negligible
202	3 Ellis Gardens	GF	36.8	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
202	3 Ellis Gardens	F 1	38.5	-6	-	9	Moderate	-18	-	-4	Minor
205	3 Gerard Hudson Gardens	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
205	3 Gerard Hudson Gardens	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
218	3 Hillside Close	GF	32.0	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
218	3 Hillside Close	F 1	32.6	-12	-	3	Minor	-24	-	-9	None/Negligible
233	3 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
233	3 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
254	4 Alexander Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
254	4 Alexander Court	F 1	37.5	-7	-	8	Moderate	-19	-	-5	Minor
264	4 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
264	4 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
266	4 Brooks Green	GF	40.1	-5	Minor	10	-	-17	None/Negligible	-2	-
266	4 Brooks Green	F 1	41.4	-3	-	11	Major	-15	-	-1	Minor
274	4 Coach House Mews	GF	35.7	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
274	4 Coach House Mews	F 1	37.3	-8	-	7	Moderate	-20	-	-5	Minor
275	4 College Lane	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
275	4 College Lane	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
280	4 Eaton Gate	GF	30.1	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
280	4 Eaton Gate	F 1	30.9	-14	-	1	Minor	-26	-	-11	None/Negligible
281	4 Ellis Gardens	GF	36.9	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
281	4 Ellis Gardens	F 1	38.6	-6	-	9	Moderate	-18	-	-4	Minor
293	4 Hillside Close	GF	31.7	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
293	4 Hillside Close	F 1	32.4	-12	-	2	Minor	-24	-	-10	None/Negligible
307	4 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
307	4 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
326	5 Alexander Court	GF	36.1	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
326	5 Alexander Court	F 1	37.7	-7	-	8	Moderate	-19	-	-4	Minor
335	5 Bishop Pelham Court	GF	35.0	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
335	5 Bishop Pelham Court	F 1	36.8	-8	-	7	Moderate	-20	-	-5	None/Negligible
336	5 Bobbins Way	GF	30.5	-14	None/Negligible	1	-	-26	None/Negligible	-12	-
336	5 Bobbins Way	F 1	31.5	-13	-	2	Minor	-25	-	-11	None/Negligible
338	5 Bridle Lane	GF	35.4	-9	None/Negligible	5	-	-21	None/Negligible	-7	-
338	5 Bridle Lane	F 1	37.4	-7	-	7	Moderate	-19	-	-5	Minor
339	5 Brooks Green	GF	38.5	-6	None/Negligible	9	-	-18	None/Negligible	-4	-

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
339	5 Brooks Green	F 1	40.6	-4	-	11	Major	-16	-	-1	Minor
344	5 Coach House Mews	GF	35.7	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
344	5 Coach House Mews	F 1	37.4	-7	-	7	Moderate	-19	-	-5	Minor
345	5 College Lane	GF	35.2	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
345	5 College Lane	F 1	36.9	-8	-	7	Moderate	-20	-	-5	Minor
349	5 Ellis Gardens	GF	36.9	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
349	5 Ellis Gardens	F 1	38.6	-6	-	9	Moderate	-18	-	-3	Minor
352	5 Gerard Hudson Gardens	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
352	5 Gerard Hudson Gardens	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
360	5 Hillside Close	GF	31.6	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
360	5 Hillside Close	F 1	32.2	-13	-	2	Minor	-25	-	-10	None/Negligible
373	5 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
373	5 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
389	6 Alexander Court	GF	35.4	-9	None/Negligible	5	-	-21	None/Negligible	-7	-
389	6 Alexander Court	F 1	37.4	-7	-	7	Moderate	-19	-	-5	Minor
399	6 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
399	6 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
400	6 Bobbins Way	GF	30.1	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
400	6 Bobbins Way	F 1	31.2	-14	-	1	Minor	-26	-	-11	None/Negligible
402	6 Brooks Green	GF	39.8	-5	Minor	10	-	-17	None/Negligible	-2	-
402	6 Brooks Green	F 1	41.3	-3	-	11	Major	-15	-	-1	Minor
408	6 Coach House Mews	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
408	6 Coach House Mews	F 1	37.5	-7	-	8	Moderate	-19	-	-5	Minor
409	6 College Lane	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
409	6 College Lane	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
414	6 Ellis Gardens	GF	37.0	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
414	6 Ellis Gardens	F 1	38.7	-6	-	9	Moderate	-18	-	-3	Minor

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
424	6 Hillside Close	GF	31.5	-13	None/Negligible	2	-	-25	None/Negligible	-11	-
424	6 Hillside Close	F 1	32.2	-13	-	2	Minor	-25	-	-10	None/Negligible
436	6 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
436	6 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
450	7 Alexander Court	GF	36.0	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
450	7 Alexander Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
459	7 Bishop Pelham Court	GF	35.0	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
459	7 Bishop Pelham Court	F 1	36.8	-8	-	7	Moderate	-20	-	-5	None/Negligible
460	7 Bobbins Way	GF	30.6	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
460	7 Bobbins Way	F 1	31.6	-13	-	2	Minor	-25	-	-10	None/Negligible
462	7 Bridle Lane	GF	35.4	-9	None/Negligible	5	-	-21	None/Negligible	-7	-
462	7 Bridle Lane	F 1	37.4	-7	-	7	Moderate	-19	-	-5	Minor
463	7 Brooks Green	GF	39.9	-5	Minor	10	-	-17	None/Negligible	-2	-
463	7 Brooks Green	F 1	41.5	-3	-	12	Major	-15	-	-1	Minor
468	7 Coach House Mews	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
468	7 Coach House Mews	F 1	37.5	-7	-	8	Moderate	-19	-	-5	Minor
469	7 College Lane	GF	35.3	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
469	7 College Lane	F 1	37.1	-8	-	7	Moderate	-20	-	-5	Minor
473	7 Ellis Gardens	GF	37.2	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
473	7 Ellis Gardens	F 1	38.8	-6	-	9	Moderate	-18	-	-3	Minor
475	7 Gerard Hudson Gardens	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
475	7 Gerard Hudson Gardens	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
483	7 Hillside Close	GF	31.8	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
483	7 Hillside Close	F 1	32.4	-12	-	2	Minor	-24	-	-10	None/Negligible
492	7 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
492	7 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
503	7a Bobbins Way	GF	30.6	-14	None/Negligible	1	-	-26	None/Negligible	-11	-

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
503	7a Bobbins Way	F 1	31.7	-13	-	2	Minor	-25	-	-10	None/Negligible
513	8 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
513	8 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
514	8 Bobbins Way	GF	30.1	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
514	8 Bobbins Way	F 1	31.3	-14	-	1	Minor	-26	-	-11	None/Negligible
516	8 Brooks Green	GF	40.6	-4	Minor	11	-	-16	None/Negligible	-1	-
516	8 Brooks Green	F 1	42.1	-3	-	12	Major	-15	-	0	Minor
521	8 Coach House Mews	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
521	8 Coach House Mews	F 1	37.5	-7	-	8	Moderate	-19	-	-5	Minor
522	8 College Lane	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
522	8 College Lane	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
527	8 Ellis Gardens	GF	37.3	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
527	8 Ellis Gardens	F 1	38.8	-6	-	9	Moderate	-18	-	-3	Minor
536	8 Hillside Close	GF	31.8	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
536	8 Hillside Close	F 1	32.5	-12	-	3	Minor	-24	-	-10	None/Negligible
546	8 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
546	8 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
563	9 Bishop Pelham Court	GF	35.1	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
563	9 Bishop Pelham Court	F 1	36.9	-8	-	7	Moderate	-20	-	-5	None/Negligible
564	9 Bobbins Way	GF	30.3	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
564	9 Bobbins Way	F 1	31.4	-13	-	1	Minor	-25	-	-11	None/Negligible
566	9 Bridle Lane	GF	35.5	-9	None/Negligible	6	-	-21	None/Negligible	-7	-
566	9 Bridle Lane	F 1	37.5	-7	-	8	Moderate	-19	-	-5	Minor
571	9 College Lane	GF	35.3	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
571	9 College Lane	F 1	37.1	-8	-	7	Moderate	-20	-	-5	Minor
575	9 Ellis Gardens	GF	37.3	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
575	9 Ellis Gardens	F 1	38.9	-6	-	9	Moderate	-18	-	-3	Minor

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
577	9 Gerard Hudson Gardens	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
577	9 Gerard Hudson Gardens	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
585	9 Hillside Close	GF	31.8	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
585	9 Hillside Close	F 1	32.6	-12	-	3	Minor	-24	-	-9	None/Negligible
589	9 Low Road	GF	29.3	-16	None/Negligible	-1	-	-28	None/Negligible	-13	-
589	9 Low Road	F 1	30.1	-15	-	0	Minor	-27	-	-12	None/Negligible
591	9 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
591	9 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
610	10 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
610	10 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
611	10 Bobbins Way	GF	30.2	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
611	10 Bobbins Way	F 1	31.4	-13	-	1	Minor	-25	-	-11	None/Negligible
617	10 College Lane	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
617	10 College Lane	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
622	10 Ellis Gardens	GF	37.4	-7	None/Negligible	7	-	-19	None/Negligible	-5	-
622	10 Ellis Gardens	F 1	39.0	-6	-	9	Moderate	-18	-	-3	Minor
631	10 Hillside Close	GF	31.8	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
631	10 Hillside Close	F 1	32.7	-12	-	3	Minor	-24	-	-9	None/Negligible
639	10 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
639	10 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
653	11 Bishop Pelham Court	GF	35.0	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
653	11 Bishop Pelham Court	F 1	36.8	-8	-	7	Moderate	-20	-	-5	None/Negligible
654	11 Bobbins Way	GF	30.4	-14	None/Negligible	0	-	-26	None/Negligible	-12	-
654	11 Bobbins Way	F 1	31.5	-13	-	2	Minor	-25	-	-11	None/Negligible
656	11 Bridle Lane	GF	35.6	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
656	11 Bridle Lane	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
663	11 Ellis Gardens	GF	37.5	-7	None/Negligible	8	-	-19	None/Negligible	-5	-

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
663	11 Ellis Gardens	F 1	39.0	-6	-	9	Moderate	-18	-	-3	Minor
665	11 Gerard Hudson Gardens	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
665	11 Gerard Hudson Gardens	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
672	11 Hillside Close	GF	32.1	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
672	11 Hillside Close	F 1	32.9	-12	-	3	Minor	-24	-	-9	None/Negligible
679	11 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
679	11 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
694	12 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
694	12 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
700	12 College Lane	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
700	12 College Lane	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
704	12 Ellis Gardens	GF	37.4	-7	None/Negligible	7	-	-19	None/Negligible	-5	-
704	12 Ellis Gardens	F 1	39.0	-6	-	9	Moderate	-18	-	-3	Minor
719	12 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
719	12 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
735	13 Bishop Pelham Court	GF	35.6	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
735	13 Bishop Pelham Court	F 1	37.3	-8	-	7	Moderate	-20	-	-5	Minor
737	13 Bridle Lane	GF	35.6	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
737	13 Bridle Lane	F 1	37.7	-7	-	8	Moderate	-19	-	-4	Minor
743	13 Ellis Gardens	GF	37.1	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
743	13 Ellis Gardens	F 1	38.9	-6	-	9	Moderate	-18	-	-3	Minor
744	13 Gerard Hudson Gardens	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
744	13 Gerard Hudson Gardens	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
755	13 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
755	13 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
768	14 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
768	14 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
776	14 Ellis Gardens	GF	36.8	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
776	14 Ellis Gardens	F 1	38.7	-6	-	9	Moderate	-18	-	-3	Minor
791	14 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
791	14 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
802	15 Bishop Pelham Court	GF	35.5	-9	None/Negligible	6	-	-21	None/Negligible	-7	-
802	15 Bishop Pelham Court	F 1	37.2	-8	-	7	Moderate	-20	-	-5	Minor
804	15 Bridle Lane	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
804	15 Bridle Lane	F 1	37.9	-7	-	8	Moderate	-19	-	-4	Minor
810	15 Ellis Gardens	GF	36.7	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
810	15 Ellis Gardens	F 1	38.7	-6	-	9	Moderate	-18	-	-3	Minor
811	15 Gerard Hudson Gardens	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
811	15 Gerard Hudson Gardens	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
823	15 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
823	15 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
834	16 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
834	16 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
842	16 Ellis Gardens	GF	36.7	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
842	16 Ellis Gardens	F 1	38.7	-6	-	9	Moderate	-18	-	-3	Minor
855	16 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
855	16 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
864	17 Bishop Pelham Court	GF	35.5	-9	None/Negligible	6	-	-21	None/Negligible	-7	-
864	17 Bishop Pelham Court	F 1	37.2	-8	-	7	Moderate	-20	-	-5	Minor
865	17 Bridle Lane	GF	35.7	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
865	17 Bridle Lane	F 1	37.8	-7	-	8	Moderate	-19	-	-4	Minor

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
871	17 Ellis Gardens	GF	36.7	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
871	17 Ellis Gardens	F 1	38.6	-6	-	9	Moderate	-18	-	-3	Minor
872	17 Gerard Hudson Gardens	GF	36.0	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
872	17 Gerard Hudson Gardens	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
883	17 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
883	17 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
894	18 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
894	18 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
901	18 Ellis Gardens	GF	36.6	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
901	18 Ellis Gardens	F 1	38.6	-6	-	9	Moderate	-18	-	-3	Minor
912	18 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
912	18 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
921	19 Bishop Pelham Court	GF	35.0	-10	None/Negligible	5	-	-22	None/Negligible	-7	-
921	19 Bishop Pelham Court	F 1	36.8	-8	-	7	Moderate	-20	-	-5	None/Negligible
923	19 Bridle Lane	GF	35.7	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
923	19 Bridle Lane	F 1	37.8	-7	-	8	Moderate	-19	-	-4	Minor
928	19 Ellis Gardens	GF	36.6	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
928	19 Ellis Gardens	F 1	38.6	-6	-	9	Moderate	-18	-	-3	Minor
929	19 Gerard Hudson Gardens	GF	36.0	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
929	19 Gerard Hudson Gardens	F 1	37.7	-7	-	8	Moderate	-19	-	-4	Minor
938	19 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
938	19 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
947	20 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
947	20 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
953	20 Ellis Gardens	GF	36.5	-8	None/Negligible	7	-	-20	None/Negligible	-6	-

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
953	20 Ellis Gardens	F 1	38.5	-6	-	9	Moderate	-18	-	-4	Minor
963	20 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
963	20 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
971	21 Bishop Pelham Court	GF	35.5	-9	None/Negligible	6	-	-21	None/Negligible	-7	-
971	21 Bishop Pelham Court	F 1	37.2	-8	-	7	Moderate	-20	-	-5	Minor
973	21 Bridle Lane	GF	35.6	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
973	21 Bridle Lane	F 1	37.7	-7	-	8	Moderate	-19	-	-4	Minor
978	21 Ellis Gardens	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
978	21 Ellis Gardens	F 1	38.5	-6	-	9	Moderate	-18	-	-4	Minor
979	21 Gerard Hudson Gardens	GF	36.0	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
979	21 Gerard Hudson Gardens	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
987	21 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
987	21 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
995	22 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
995	22 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1000	22 Ellis Gardens	GF	36.3	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1000	22 Ellis Gardens	F 1	38.5	-6	-	9	Moderate	-18	-	-4	Minor
1010	22 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1010	22 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1016	23 Bishop Pelham Court	GF	35.6	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1016	23 Bishop Pelham Court	F 1	37.3	-8	-	7	Moderate	-20	-	-5	Minor
1018	23 Bridle Lane	GF	36.1	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1018	23 Bridle Lane	F 1	38.3	-7	-	8	Moderate	-19	-	-4	Minor
1023	23 Ellis Gardens	GF	36.3	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1023	23 Ellis Gardens	F 1	38.4	-6	-	8	Moderate	-18	-	-4	Minor

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1024	23 Gerard Hudson Gardens	GF	36.0	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1024	23 Gerard Hudson Gardens	F 1	37.7	-7	-	8	Moderate	-19	-	-4	Minor
1032	23 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1032	23 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1038	24 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1038	24 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1042	24 Ellis Gardens	GF	36.2	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1042	24 Ellis Gardens	F 1	38.4	-6	-	8	Moderate	-18	-	-4	Minor
1050	24 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1050	24 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1056	25 Bridle Lane	GF	36.2	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1056	25 Bridle Lane	F 1	38.4	-6	-	8	Moderate	-18	-	-4	Minor
1061	25 Ellis Gardens	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1061	25 Ellis Gardens	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1062	25 Gerard Hudson Gardens	GF	36.0	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1062	25 Gerard Hudson Gardens	F 1	37.7	-7	-	8	Moderate	-19	-	-4	Minor
1070	25 Quintin Gurney House	GF	36.6	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
1070	25 Quintin Gurney House	F 1	38.2	-7	-	8	Moderate	-19	-	-4	Minor
1076	26 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1076	26 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1079	26 Ellis Gardens	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1079	26 Ellis Gardens	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1087	26 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1087	26 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1094	27 Bridle Lane	GF	36.2	-9	None/Negligible	6	-	-21	None/Negligible	-6	-

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1094	27 Bridle Lane	F 1	38.4	-6	-	8	Moderate	-18	-	-4	Minor
1098	27 Ellis Gardens	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1098	27 Ellis Gardens	F 1	37.9	-7	-	8	Moderate	-19	-	-4	Minor
1099	27 Gerard Hudson Gardens	GF	36.0	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1099	27 Gerard Hudson Gardens	F 1	37.7	-7	-	8	Moderate	-19	-	-4	Minor
1105	27 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1105	27 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1110	28 Bishop Pelham Court	GF	35.7	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1110	28 Bishop Pelham Court	F 1	37.3	-8	-	7	Moderate	-20	-	-5	Minor
1113	28 Ellis Gardens	GF	35.7	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1113	28 Ellis Gardens	F 1	37.9	-7	-	8	Moderate	-19	-	-4	Minor
1120	28 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1120	28 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1126	29 Bridle Lane	GF	36.3	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1126	29 Bridle Lane	F 1	38.4	-6	-	9	Moderate	-18	-	-4	Minor
1130	29 Ellis Gardens	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1130	29 Ellis Gardens	F 1	37.9	-7	-	8	Moderate	-19	-	-4	Minor
1136	29 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1136	29 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1140	30 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1140	30 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1143	30 Ellis Gardens	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1143	30 Ellis Gardens	F 1	37.9	-7	-	8	Moderate	-19	-	-4	Minor
1150	30 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1150	30 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1156	31 Bridle Lane	GF	36.3	-9	None/Negligible	6	-	-21	None/Negligible	-6	-

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1156	31 Bridle Lane	F 1	38.5	-6	-	9	Moderate	-18	-	-4	Minor
1159	31 Ellis Gardens	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1159	31 Ellis Gardens	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1166	31 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1166	31 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1169	32 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1169	32 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1173	32 Ellis Gardens	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1173	32 Ellis Gardens	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1181	32 Quintin Gurney House	GF	36.5	-8	None/Negligible	7	-	-20	None/Negligible	-6	-
1181	32 Quintin Gurney House	F 1	38.1	-7	-	8	Moderate	-19	-	-4	Minor
1188	33 Ellis Gardens	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1188	33 Ellis Gardens	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1192	33 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1192	33 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1195	34 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1195	34 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1197	34 Ellis Gardens	GF	36.0	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1197	34 Ellis Gardens	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1204	34 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1204	34 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1211	35 Ellis Gardens	GF	36.0	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1211	35 Ellis Gardens	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1214	35 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1214	35 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1217	36 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1217	36 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
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				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1219	36 Ellis Gardens	GF	36.0	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1219	36 Ellis Gardens	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1225	36 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1225	36 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1230	37 Ellis Gardens	GF	36.1	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1230	37 Ellis Gardens	F 1	38.1	-7	-	8	Moderate	-19	-	-4	Minor
1234	37 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1234	37 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1237	38 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1237	38 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1240	38 Ellis Gardens	GF	36.1	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1240	38 Ellis Gardens	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1244	38 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1244	38 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1249	39 Ellis Gardens	GF	36.1	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1249	39 Ellis Gardens	F 1	38.1	-7	-	8	Moderate	-19	-	-4	Minor
1252	39 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1252	39 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1255	40 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1255	40 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1258	40 Ellis Gardens	GF	36.1	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1258	40 Ellis Gardens	F 1	38.1	-7	-	8	Moderate	-19	-	-4	Minor
1261	40 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1261	40 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1268	41 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1268	41 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1271	42 Bishop Pelham Court	GF	35.8	-9	None/Negligible	6	-	-21	None/Negligible	-6	-

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				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1271	42 Bishop Pelham Court	F 1	37.5	-7	-	8	Moderate	-19	-	-5	Minor
1274	42 Quintin Gurney House	GF	36.6	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
1274	42 Quintin Gurney House	F 1	38.2	-7	-	8	Moderate	-19	-	-4	Minor
1278	43 College Lane	GF	37.8	-7	None/Negligible	8	-	-19	None/Negligible	-4	-
1278	43 College Lane	F 1	39.4	-5	-	9	Moderate	-17	-	-3	Minor
1281	43 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1281	43 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1285	44 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1285	44 Bishop Pelham Court	F 1	37.5	-7	-	8	Moderate	-19	-	-5	Minor
1288	44 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1288	44 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1293	45 College Lane	GF	37.9	-7	None/Negligible	8	-	-19	None/Negligible	-4	-
1293	45 College Lane	F 1	39.4	-5	-	9	Moderate	-17	-	-3	Minor
1297	45 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1297	45 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1301	46 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1301	46 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1304	46 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1304	46 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1312	47 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1312	47 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1315	48 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1315	48 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1319	48 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1319	48 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1324	49 Quintin Gurney House	GF	36.8	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
1324	49 Quintin Gurney House	F 1	38.4	-6	-	8	Moderate	-18	-	-4	Minor

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				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1327	50 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1327	50 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1329	50 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1329	50 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1335	51 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1335	51 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1338	52 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1338	52 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1340	52 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1340	52 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1346	53 Quintin Gurney House	GF	36.4	-8	None/Negligible	6	-	-20	None/Negligible	-6	-
1346	53 Quintin Gurney House	F 1	38.0	-7	-	8	Moderate	-19	-	-4	Minor
1348	54 Bishop Pelham Court	GF	35.9	-9	None/Negligible	6	-	-21	None/Negligible	-6	-
1348	54 Bishop Pelham Court	F 1	37.6	-7	-	8	Moderate	-19	-	-4	Minor
1405	Almond Villa	GF	32.4	-12	None/Negligible	2	-	-24	None/Negligible	-10	-
1405	Almond Villa	F 1	33.1	-12	-	3	Minor	-24	-	-9	None/Negligible
1424	Applegrove	GF	32.8	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1424	Applegrove	F 1	33.6	-11	-	4	Minor	-23	-	-8	None/Negligible
1427	Ashley House	GF	31.0	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1427	Ashley House	F 1	32.1	-13	-	2	Minor	-25	-	-10	None/Negligible
1433	Baytrees	GF	30.9	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1433	Baytrees	F 1	31.9	-13	-	2	Minor	-25	-	-10	None/Negligible
1434	Beauville	GF	32.2	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1434	Beauville	F 1	33.0	-12	-	3	Minor	-24	-	-9	None/Negligible
1438	Bennelong	GF	32.5	-12	None/Negligible	3	-	-24	None/Negligible	-10	-
1438	Bennelong	F 1	33.2	-12	-	3	Minor	-24	-	-9	None/Negligible
1443	Borrans	GF	30.2	-15	None/Negligible	0	-	-27	None/Negligible	-12	-

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				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1443	Borrans	F 1	31.3	-13	-	1	Minor	-25	-	-11	None/Negligible
1448	Brackenwood	GF	32.8	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1448	Brackenwood	F 1	33.9	-11	-	4	Minor	-23	-	-8	None/Negligible
1473	Cavell Barn	GF	32.7	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1473	Cavell Barn	F 1	33.1	-12	-	3	Minor	-24	-	-9	None/Negligible
1474	Cavell House	GF	32.7	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1474	Cavell House	F 1	33.3	-12	-	3	Minor	-24	-	-9	None/Negligible
1477	Chalcott	GF	30.7	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1477	Chalcott	F 1	31.8	-13	-	2	Minor	-25	-	-10	None/Negligible
1485	Cherry Tree Cottage	GF	31.3	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1485	Cherry Tree Cottage	F 1	32.2	-13	-	2	Minor	-25	-	-10	None/Negligible
1506	Common View	GF	31.1	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1506	Common View	F 1	32.1	-13	-	2	Minor	-25	-	-10	None/Negligible
1507	Commonside	GF	31.8	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1507	Commonside	F 1	32.4	-12	-	2	Minor	-24	-	-10	None/Negligible
1516	Crossroads	GF	32.1	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1516	Crossroads	F 1	33.0	-12	-	3	Minor	-24	-	-9	None/Negligible
1521	Dairy Cottage	GF	30.3	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
1521	Dairy Cottage	F 1	31.5	-13	-	2	Minor	-25	-	-11	None/Negligible
1528	Drifters	GF	32.1	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1528	Drifters	F 1	32.9	-12	-	3	Minor	-24	-	-9	None/Negligible
1534	East Gates	GF	31.9	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1534	East Gates	F 1	32.8	-12	-	3	Minor	-24	-	-9	None/Negligible
1540	Enfield House	GF	30.8	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1540	Enfield House	F 1	31.7	-13	-	2	Minor	-25	-	-10	None/Negligible
1546	Fairview	GF	31.9	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1546	Fairview	F 1	32.7	-12	-	3	Minor	-24	-	-9	None/Negligible

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				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1553	First House at Roadside Nurseries	GF	30.3	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
1553	First House at Roadside Nurseries	F 1	31.3	-14	-	1	Minor	-26	-	-11	None/Negligible
1574	Glebe House	GF	29.9	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
1574	Glebe House	F 1	30.8	-14	-	1	Minor	-26	-	-11	None/Negligible
1578	Glenresa	GF	30.7	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1578	Glenresa	F 1	31.6	-13	-	2	Minor	-25	-	-10	None/Negligible
1582	Gowthorpe Manor	GF	31.7	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1582	Gowthorpe Manor	F 1	33.4	-11	-	3	Minor	-23	-	-9	None/Negligible
1592	Hall Farm Cottage	GF	30.6	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1592	Hall Farm Cottage	F 1	31.5	-13	-	2	Minor	-25	-	-11	None/Negligible
1593	Hall Farm House	GF	33.0	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1593	Hall Farm House	F 1	34.1	-11	-	4	Minor	-23	-	-8	None/Negligible
1603	High Paddock	GF	31.6	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1603	High Paddock	F 1	32.2	-13	-	2	Minor	-25	-	-10	None/Negligible
1612	Hillside	GF	32.0	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1612	Hillside	F 1	32.8	-12	-	3	Minor	-24	-	-9	None/Negligible
1613	Hillsley	GF	32.2	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1613	Hillsley	F 1	33.0	-12	-	3	Minor	-24	-	-9	None/Negligible
1616	Hollybank	GF	31.8	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1616	Hollybank	F 1	32.4	-12	-	2	Minor	-24	-	-10	None/Negligible
1617	Hollyview	GF	44.1	-1	Minor	14	-	-13	None/Negligible	2	-
1617	Hollyview	F 1	46.2	1	-	16	Major	-11	-	4	Minor
1623	House on the Hill	GF	40.6	-4	Minor	11	-	-16	None/Negligible	-1	-
1623	House on the Hill	F 1	42.4	-2	-	12	Major	-14	-	0	Minor
1629	Iview	GF	30.2	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
1629	Iview	F 1	31.7	-13	-	2	Minor	-25	-	-10	None/Negligible

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				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1633	Keswick Lodge	GF	32.6	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1633	Keswick Lodge	F 1	33.7	-11	-	4	Minor	-23	-	-8	None/Negligible
1634	Keswick Old Hall	GF	29.9	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
1634	Keswick Old Hall	F 1	30.6	-14	-	1	Minor	-26	-	-11	None/Negligible
1635	Kingsmead	GF	30.6	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1635	Kingsmead	F 1	31.7	-13	-	2	Minor	-25	-	-10	None/Negligible
1646	Longacre	GF	32.8	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1646	Longacre	F 1	33.7	-11	-	4	Minor	-23	-	-8	None/Negligible
1649	Low Cottage	GF	29.3	-16	None/Negligible	-1	-	-28	None/Negligible	-13	-
1649	Low Cottage	F 1	30.2	-15	-	0	Minor	-27	-	-12	None/Negligible
1651	Lynwood	GF	30.3	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
1651	Lynwood	F 1	31.4	-13	-	1	Minor	-25	-	-11	None/Negligible
1655	Mangreen Cottage	GF	43.7	-1	Minor	14	-	-13	None/Negligible	2	-
1655	Mangreen Cottage	F 1	45.6	1	-	16	Major	-11	-	4	Minor
1656	Mangreen Hall (north)	GF	38.1	-7	None/Negligible	8	-	-19	None/Negligible	-4	-
1656	Mangreen Hall (north)	F 1	40.4	-4	-	10	Major	-16	-	-2	Minor
1657	Mangreen Hall (south)	GF	37.9	-7	None/Negligible	8	-	-19	None/Negligible	-4	-
1657	Mangreen Hall (south)	F 1	40.2	-5	-	10	Major	-17	-	-2	Minor
1658	Mangreen Hall Farmhouse	GF	36.6	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
1658	Mangreen Hall Farmhouse	F 1	38.7	-6	-	9	Moderate	-18	-	-3	Minor
1680	Nans House Roadside Nurseries	GF	30.1	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
1680	Nans House Roadside Nurseries	F 1	31.2	-14	-	1	Minor	-26	-	-11	None/Negligible
1685	North Cottage	GF	30.8	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1685	North Cottage	F 1	31.9	-13	-	2	Minor	-25	-	-10	None/Negligible
1694	Oberau	GF	32.0	-13	None/Negligible	2	-	-25	None/Negligible	-10	-

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1694	Oberau	F 1	32.5	-12	-	3	Minor	-24	-	-10	None/Negligible
1696	Old Hall Stables	GF	29.7	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
1696	Old Hall Stables	F 1	30.6	-14	-	1	Minor	-26	-	-11	None/Negligible
1707	Park View Cottage	GF	43.8	-1	Minor	14	-	-13	None/Negligible	2	-
1707	Park View Cottage	F 1	45.9	1	-	16	Major	-11	-	4	Minor
1708	Park View House	GF	34.4	-10	None/Negligible	4	-	-22	None/Negligible	-8	-
1708	Park View House	F 1	36.4	-8	-	6	Moderate	-20	-	-6	None/Negligible
1709	Park View House Annexe	GF	34.3	-11	None/Negligible	4	-	-23	None/Negligible	-8	-
1709	Park View House Annexe	F 1	36.4	-8	-	6	Moderate	-20	-	-6	None/Negligible
1710	Peartree Cottage	GF	30.3	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
1710	Peartree Cottage	F 1	31.5	-13	-	2	Minor	-25	-	-11	None/Negligible
1715	Pipers Moon 1 Keswick Hall	GF	36.9	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
1715	Pipers Moon 1 Keswick Hall	F 1	38.6	-6	-	9	Moderate	-18	-	-3	Minor
1717	Pond Cottage	GF	44.2	-1	Minor	14	-	-13	None/Negligible	2	-
1717	Pond Cottage	F 1	46.3	2	-	16	Major	-11	-	4	Minor
1725	Red House	GF	30.6	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1725	Red House	F 1	31.6	-13	-	2	Minor	-25	-	-10	None/Negligible
1733	Rose Cottage	GF	30.8	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1733	Rose Cottage	F 1	31.8	-13	-	2	Minor	-25	-	-10	None/Negligible
1736	Roseacre	GF	33.0	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1736	Roseacre	F 1	33.8	-11	-	4	Minor	-23	-	-8	None/Negligible
1739	Rowancroft	GF	30.6	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1739	Rowancroft	F 1	31.7	-13	-	2	Minor	-25	-	-10	None/Negligible
1747	Square Cut	GF	31.4	-13	None/Negligible	1	-	-25	None/Negligible	-11	-
1747	Square Cut	F 1	32.1	-13	-	2	Minor	-25	-	-10	None/Negligible
1749	St Giles	GF	30.9	-14	None/Negligible	1	-	-26	None/Negligible	-11	-

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1749	St Giles	F 1	31.9	-13	-	2	Minor	-25	-	-10	None/Negligible
1756	Summer Cottage	GF	30.4	-14	None/Negligible	0	-	-26	None/Negligible	-12	-
1756	Summer Cottage	F 1	31.5	-13	-	2	Minor	-25	-	-11	None/Negligible
1765	The Berries	GF	30.2	-15	None/Negligible	0	-	-27	None/Negligible	-12	-
1765	The Berries	F 1	31.3	-14	-	1	Minor	-26	-	-11	None/Negligible
1772	The Coach House	GF	37.0	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
1772	The Coach House	F 1	39.2	-6	-	9	Moderate	-18	-	-3	Minor
1782	The Gables	GF	33.1	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1782	The Gables	F 1	33.8	-11	-	4	Minor	-23	-	-8	None/Negligible
1787	The Hay Loft	GF	36.9	-8	None/Negligible	7	-	-20	None/Negligible	-5	-
1787	The Hay Loft	F 1	39.1	-6	-	9	Moderate	-18	-	-3	Minor
1788	The Highlands	GF	30.8	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1788	The Highlands	F 1	31.9	-13	-	2	Minor	-25	-	-10	None/Negligible
1789	The Hollies	GF	30.8	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1789	The Hollies	F 1	31.9	-13	-	2	Minor	-25	-	-10	None/Negligible
1790	The Homestead	GF	30.4	-14	None/Negligible	1	-	-26	None/Negligible	-12	-
1790	The Homestead	F 1	31.4	-13	-	1	Minor	-25	-	-11	None/Negligible
1792	The Laurels	GF	32.7	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1792	The Laurels	F 1	33.4	-11	-	3	Minor	-23	-	-9	None/Negligible
1796	The Lodge	GF	32.8	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1796	The Lodge	F 1	33.5	-11	-	4	Minor	-23	-	-9	None/Negligible
1805	The Old School House	GF	30.6	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1805	The Old School House	F 1	31.5	-13	-	2	Minor	-25	-	-10	None/Negligible
1809	The Paddock	GF	32.6	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1809	The Paddock	F 1	33.3	-12	-	3	Minor	-24	-	-9	None/Negligible
1817	The Smithy	GF	32.8	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1817	The Smithy	F 1	33.5	-11	-	4	Minor	-23	-	-9	None/Negligible

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact Magnitude without mitigation				Impact Magnitude with mitigation of -12 dB			
				Day - Ground Floor		Night - First Floor		Day - Ground Floor		Night - First Floor	
				Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude	Rating level dB diff.	Impact Magnitude
1821	The White Cottage	GF	31.7	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1821	The White Cottage	F 1	32.4	-12	-	2	Minor	-24	-	-10	None/Negligible
1822	The White House	GF	31.7	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1822	The White House	F 1	32.3	-13	-	2	Minor	-25	-	-10	None/Negligible
1823	The Yews	GF	31.7	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1823	The Yews	F 1	32.3	-13	-	2	Minor	-25	-	-10	None/Negligible
1826	Three Pines	GF	31.8	-13	None/Negligible	2	-	-25	None/Negligible	-10	-
1826	Three Pines	F 1	32.5	-12	-	3	Minor	-24	-	-10	None/Negligible
1827	Three Trees	GF	32.5	-12	None/Negligible	3	-	-24	None/Negligible	-10	-
1827	Three Trees	F 1	33.2	-12	-	3	Minor	-24	-	-9	None/Negligible
1832	Trafalgar Cottage	GF	31.3	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1832	Trafalgar Cottage	F 1	32.1	-13	-	2	Minor	-25	-	-10	None/Negligible
1844	Valley View	GF	32.8	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1844	Valley View	F 1	33.4	-11	-	3	Minor	-23	-	-9	None/Negligible
1848	Virginia Cottage	GF	31.0	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1848	Virginia Cottage	F 1	32.2	-13	-	2	Minor	-25	-	-10	None/Negligible
1855	Wattle Cottage	GF	42.6	-2	Minor	13	-	-14	None/Negligible	1	-
1855	Wattle Cottage	F 1	44.7	0	-	15	Major	-12	-	3	Minor
1857	Well Yard Cottage	GF	30.9	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1857	Well Yard Cottage	F 1	32.0	-13	-	2	Minor	-25	-	-10	None/Negligible
1861	White	GF	31.3	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1861	White	F 1	32.1	-13	-	2	Minor	-25	-	-10	None/Negligible
1875	Windy Ridge	GF	32.9	-12	None/Negligible	3	-	-24	None/Negligible	-9	-
1875	Windy Ridge	F 1	34.1	-11	-	4	Minor	-23	-	-8	None/Negligible
1876	Winsley Cottage	GF	31.0	-14	None/Negligible	1	-	-26	None/Negligible	-11	-
1876	Winsley Cottage	F 1	32.0	-13	-	2	Minor	-25	-	-10	None/Negligible

Table A.2: Operational noise levels - onshore HVAC booster station.

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact without mitigation			
				Day / Ground Floor		Night / First Floor	
				Rating level dB diff.	Impact	Rating level dB diff.	Impact
13	1 Dotsel Cottages	GF	20.9	-10	None/Negligible	-5	-
13	1 Dotsel Cottages	F 1	21.4	-10	-	-5	Minor
49	2 Dotsel Cottages	GF	21.0	-10	None/Negligible	-5	-
49	2 Dotsel Cottages	F 1	21.4	-10	-	-5	Minor
69	2 Shrubbs Farm Cottages	GF	15.7	-10	None/Negligible	-5	-
69	2 Shrubbs Farm Cottages	F 1	22.2	-10	-	-5	Minor
82	3 Dotsel Cottages	GF	21.0	-10	None/Negligible	-5	-
82	3 Dotsel cottages	F 1	21.4	-10	-	-5	Minor
219	Annexe	GF	17.3	-15	None/Negligible	-10	-
219	Annexe	F 1	20.7	-9	-	-4	Minor
244	Blackhall Farm	GF	20.2	-10	None/Negligible	-5	-
244	Blackhall farm	F 1	20.6	-10	-	-5	Minor
268	Caravan Site At	GF	19.9	-14	None/Negligible	-9	-
268	Caravan Site At	F 1	21.0	-10	-	-5	None/Negligible
318	Dotsel Farm	GF	21.0	-11	None/Negligible	-6	-
318	Dotsel Farm	F 1	21.5	-10	-	-5	None/Negligible
334	Field End	GF	20.9	-11	None/Negligible	-6	-
334	Field End	F 1	21.4	-10	-	-5	Minor
348	Fuel Farm	GF	23.4	-10	None/Negligible	-5	-
348	Fuel Farm	F 1	23.5	-10	-	-5	Minor
349	Fuel Farm Cottage	GF	23.5	-10	None/Negligible	-5	-
349	Fuel Farm Cottage	F 1	23.6	-10	-	-5	Minor
426	Keepers Cottage	GF	24.7	-8	None/Negligible	-3	-
426	Keepers Cottage	F 1	24.7	-8	-	-3	Minor
476	Oak Farm	GF	17.3	-8	None/Negligible	-3	-
476	Oak Farm	F 1	20.7	-7	-	-2	Minor
503	Pimlico House	GF	23.8	-6	None/Negligible	-1	-

Reference	Receptor	Floor	Predicted specific noise level dB $L_{Ar,Tr}$	Impact without mitigation			
				Day / Ground Floor		Night / First Floor	
				Rating level dB diff.	Impact	Rating level dB diff.	Impact
503	Pimlico House	F 1	23.8	-6	-	-1	Minor
526	Range Farm	GF	20.3	-14	None/Negligible	-9	-
526	Range Farm	F 1	20.5	-10	-	-5	None/Negligible
562	Shrubbs Farm	GF	17.6	-7	None/Negligible	-2	-
562	Shrubbs Farm	F 1	22.3	-7	-	-2	Minor
563	Shrubbs Farm Cottage	GF	15.7	-11	None/Negligible	-6	-
563	Shrubbs Farm Cottage	F 1	22.2	-11	-	-6	None/Negligible
582	Sycamore Cottage	GF	20.4	-13	None/Negligible	-8	-
582	Sycamore Cottage	F 1	20.6	-9	-	-4	Minor

Table A.3: Onshore HVDC converter/HVAC substation – residential property impact summary.

Impact Magnitude	Without mitigation		With further mitigation of -12 dB	
	Day	Night	Day	Night
None/Negligible	302	0	315	114
Minor	13	102	0	201
Moderate	0	197	0	0
Major	0	16	0	0
Rep. background, night	30 dB L_{A90}		Consider mitigation of -12 dB	
Rep. background, day	45 dB L_{A90}		-7 dB of attenuation to achieve no Major adverse impacts. -12 dB of attenuation to achieve no Moderate or Major adverse impacts	

Table A.4: Onshore HVAC booster station – residential property impact summary.

Impact Magnitude	Without Mitigation	
	Day	Night
None/Negligible	18	5
Minor	3	13
Moderate	0	0
Major	0	0
Representative background, day	31 dB LA90	
Representative background, night	26 dB LA90	

Table A.5: Operational noise residual impacts associated with varying levels of mitigation at the onshore HVDC converter/HVAC substation.

Magnitude of impact	Mitigation / dB attenuation / Property counts																		
	0 dB	-1 dB	-2 dB	-3 dB	-4 dB	-5 dB	-6 dB	-7 dB	-8 dB	-9 dB	-10 dB	-11 dB	-12 dB	-13 dB	-14 dB	-15 dB	-16 dB	-17 dB	-18 dB
None/Negligible	0	0	0	0	0	0	7	44	78	100	102	102	114	198	291	299	302	306	310
Minor	102	102	114	198	291	299	295	262	232	210	209	211	201	117	24	16	13	9	5
Moderate	197	200	192	112	19	12	11	9	5	5	4	2	0	0	0	0	0	0	0
Major	16	13	9	5	5	4	2	0	0	0	0	0	0	0	0	0	0	0	0