APPENDIX 11.1A
POLICY AND GUIDANCE

Technical Appendices

Appendix 11.1 Policy and guidance

Key Legislation.

1.1201.107 In England there are two legislative instruments that address noise and vibration: The *Environmental Protection Act 1990* (EPA), and the *Control of Pollution Act 1974* (CoPA). The *Noise at Work Regulations 2005* provides legal limits for noise exposure to employees.

Environmental Protection Act (EPA), 1990.

1.1211.108 The EPA provides powers to control noise where a statutory noise nuisance exists. Section 80 describes the powers of the Local Authority to serve a notice requiring the abatement of a nuisance or prohibition of its occurrence/reoccurrence. Section 82 gives individuals subject to a statutory nuisance the right to make representations to the courts and for the courts to take action against the originator of that nuisance such that it is abated.

Control of Pollution Act (CoPA), 1974.

1.1221.109 The CoPA requires that 'Best Practicable Means' (as defined in section 72 of CoPA) are adopted to control construction noise on any given site. The CoPA refers to British Standard (BS) 5228 as providing examples of best practicable means.

1.1231.110 Section 60 provides Local Authorities with the power to impose operating conditions on a construction site at any time for the purpose of minimising noise. Section 61 allows the developer to negotiate a set of operating procedures with the Local Authority prior to commencement of site works.

Noise at Work Regulations, 2005.

1.1241.111 The Noise at Work Regulations 2005 provide legal limits for noise exposure to employees. It sets thresholds at which employers need to undertake workplace noise risk assessments and provide training, a further threshold at which employers must provide mandatory hearing protection, and a limiting noise exposure value not to be exceeded on a daily, or weekly, basis.

Key National Planning Policy.

1.51.3 National Planning Policy Framework 20231.

1.1251.112 The *National Planning Policy Framework* (NPPF) sets out the Government's planning policies for England and how they are expected to be applied. Paragraph 18074 of the NPPF states that

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

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

~~1.126~~1.113 Paragraph 1918~~5~~ of the NPPF states:

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

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

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

Noise Policy Statement for England

~~1.127~~1.114 The *Noise Policy Statement for England* (NPSE) advises that noise impacts should be assessed on the basis of adverse and significant adverse effect. The NPSE does not provide any specific guidance on assessment methods or noise limits. However, the concepts summarised in **Table 11.15~~Table 11.14~~** are introduced and can be applied when considering the significance of noise impacts.

Table 11.15~~16~~ – Observed Effect Levels

EFFECT LEVEL	DESCRIPTION
No Observed Effect Level (NOEL)	The noise level below which no effect can be detected. Below this level of noise, there is no detectable effect on health and quality of life due to the noise being assessed.
Lowest observed adverse effect level (LOAEL)	This is the level of noise above which adverse effects on health and quality of life can be detected.
Significant observed adverse effect level (SOAEL)	This is the level of noise above which significant adverse effects on health and quality of life occur.

Planning Practice Guidance

~~1.128~~1.115 Online *Planning Practice Guidance* (PPG) has been published to provide greater details in relation to the relevance of noise to the planning process following the introduction of the NPPF and NPSE.

~~1.129~~1.116 The PPG explains that "*where noise is not perceived to be noticeable, there is by definition no effect*". As noise exposure increases, a point will be reached where it becomes noticeable.

~~1.130~~1.117 PPG sets out a hierarchy of noise exposure which relates example responses back to the effect levels set out within the NPSE, which is reproduced below.

Table 11.16~~17~~ – Example responses to increased noise effect

PERCEPTION	EXAMPLES OF OUTCOMES	INCREASING EFFECT LEVEL	ACTION
No observed affect level (NOEL)			

Not noticeable	No Effect	No observed Effect	No specific measures required
Noticeable and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No observed adverse effect	
Lowest observed adverse effect level (LOAEL)			
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; closing windows for some of the time because of the noise. Potential for non-awakening sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed adverse effect	Mitigate and reduce to a minimum
Significant observed adverse effect level (SOAEL)			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. having to keep windows closed most of the time, avoiding certain activities during periods of intrusion. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant observed adverse effect	Avoid
Noticeable and disruptive	Extensive and regular 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.	Unacceptable adverse effect	Prevent

~~1.131~~1.118 As with the NPSE, PPG does not provide any specific guidance on numeric limits or specific noise parameters.

~~1.132~~1.119 It is explained that there is no simple relationship between noise levels and the impact on those affected, and that the impact could be affected by other factors such as:

- The source and absolute level of the noise, together with the time of day that noise is occurring
- For a new noise source, how the noise from it relates to the existing sound environment
- For non-continuous sources of noise, the number of noise events and the frequency and pattern of occurrence of the noise
- The spectral content of the noise (i.e. whether the noise contains particular tonal characteristics or other features)
- Cumulative impacts of more than one noise source

~~1.133~~1.120 PPG also sets out that there are several approaches that can be taken to mitigate noise; whether through engineering methods to reduce noise at source, optimising layouts to reduce noise effects, securing mitigation with planning conditions, or the introduction of physical mitigation to reduce noise (e.g. building envelope design, acoustic screens).

~~1.6~~1.4 Key Local Planning Policy

~~1.7~~1.5 Cambridge Local Plan

1.1341.121 The proposed development site is located within the boundaries of Cambridge City Council. Planning services for development within the city are administered by the Greater Cambridge Shared Planning Service (GCSPS).

1.1351.122 In terms of noise and vibration, Policy 35 of the Cambridge Local Plan 2018 places a responsibility upon developers to mitigate and reduce adverse noise impacts associated with new development.

1.1361.123 The GCSPS's *Sustainable Design and Construction Supplementary Planning Document* (SPD) expands upon the strategic objectives of the Local Plan and sets out the technical expectations for the control of noise associated with new development.

1.81.6 Other Relevant Standards & Guidance

British Standard (BS) 5228 Parts 1 and 2

1.1371.124 British Standard 5228: 2009 + A1 2014 *Code of practice for noise and vibration control on construction and open sites* (BS 5228) provides guidance on a range of considerations relating to construction noise including the legislative framework, general control measures, example methods for estimating construction noise levels and example criteria which may be considered when assessing the significance of any effects. BS 5228-1 relates to construction noise, whilst BS 5228-2 relates to construction vibration.

British Standard (BS) 8233

1.1381.125 BS 8233: 2014 *Guidance on sound insulation and noise reduction for buildings* provides criteria for the assessment of internal sound levels for various types of development and building uses. BS 8233 Table 2 and 6 provide desirable internal ambient sound levels for spaces in non-domestic buildings when they are unoccupied which reproduced below in **Table 11.17~~Table 11.16~~**.

Table 11.1718 – Indoor ambient sound levels in non-domestic building

LOCATION	DESIGN RANGE (dB $L_{Aeq,T}$)
Boardroom	35 - 40
Meeting room / cellular office	35 - 45
Open plan offices / laboratories	45 - 50
Corridors / circulation space / toilets / changing rooms	45 - 55

1.91.7 British Standard (BS) 4142

1.1391.126 BS 4142: 2014 + A1 2019 *Methods for rating and assessing industrial and commercial sound* describes an objective method for the assessment sound from commercial activities; including noise emissions from fixed building services plant. The standard is based upon the evaluation of a 'rating level' of sound from a new source experienced at a noise sensitive receiver. The rating level is assessed against the prevailing background sound levels at the same receiver. Where the sound displays a particular acoustic characteristic, such as tonality, the sound rating attracts a penalty. The size of the penalty is relative to the significance of the acoustic feature.

1.1401.127 The general principle is that the lower the rating level relative to the existing background sound, the less likely that the new sound source will have an adverse effect on the noise sensitive receiver. The standard states that:

- A difference of around +10 dB or more is likely to be an indication of a significant adverse effect, depending upon the context,
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context,
- 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.

1.1411.128 It is noted within the standard that not all adverse impacts will lead to complaint, and equally that not every complaint is proof of an adverse impact.

1.101.8 World Health Organisation Guidelines

1.1421.129 The WHO has published a series of guidelines that relate to acceptable levels of noise from a health perspective. These are detailed in three separate documents: the *Guidelines for Community Noise* (2000) ; the *Night Noise Guidelines for Europe'* (2009) ; and the *Environmental Noise Guidelines for the European Region* (2018)

1.1431.130 The *Guidelines for Community Noise* provides guidance on internal sound levels within dwellings and external amenity space that could result in adverse health effects; ranging from sleep disturbance to annoyance. These sound levels formed the basis of the recommendations made within BS 8233 as described above.

1.1441.131 The *Night Noise Guidelines for Europe* provide further criteria that relate external noise levels at dwellings to specific health effects. These criteria were produced with the intention of supplementing the criteria that were given in the 'Guidelines for Community Noise'.

1.1451.132 The *Night Noise Guidelines* are, however, set in terms of the L_{night}, outside, which is the average night time noise level experienced outside the building over a year. It does not take into account mitigation measures that may be designed into the building envelope and requires knowledge of the noise levels experienced at the development site over the course of a full year. As such, the L_{night}, outside measurement descriptor is not appropriate for assessing the acceptability of noise affecting the Proposed Development and will therefore not be considered further in this assessment.

1.1461.133 Although the *Environmental Noise Guidelines for the European Region* supersede the *Guidelines for Community Noise*, they do not provide recommendations for indoor noise levels. Therefore, the indoor sound values in the *Guidelines for Community Noise* are still valid.

1.111.9 Calculation of Road Traffic Noise

1.1471.134 In the UK, the *Calculation of road traffic noise* (CRTN) document provides the standard method for predicting noise from road traffic. Predictions are made using input parameters, such as traffic flow, composition, speed and type of road, and distance of the receptor from the road. This method enables the calculation of average noise levels over a period of either 18 hours or 1 hour, presented in terms of the parameter L_{A10}.

1.1481.135 The document states that where the total number of vehicles is below 1000 over an 18 hour day, predictions become unreliable. As such, there is no established methodology for calculation of road traffic noise for very low flows.

1.121.10 Design Manual for Roads & Bridges

1.1491.136 The *Design manual for roads and bridges* (DMRB) was originally published by the Department of Transport in 1993 and sets out procedures for undertaking the design of highways schemes.

1.1501.137 *LA111 Noise and Vibration* sets out a methodology for assessing the impacts of noise and vibration. This volume was last updated in May 2020 (Rev2). Table 3.54a within LA111 provides guidance on the magnitude of short-term road traffic noise impacts, which are reproduced in **Table 11.1Table** 11.18~~7~~ below.

Table 11.18~~19~~ – Classification of Magnitude of Short Term Road Traffic Noise Impacts

NOISE CHANGE dB $L_{A10, 18hour}$ OR L_{Night}	MAGNITUDE OF IMPACT
Less than 1.0	Negligible
1.0 – 2.9	Minor
3.0 – 4.9	Moderate
Greater than or equal to 5.0	Major

IEMA Guidelines for Environmental Noise Impact Assessment 2014

1.1511.138 The *Guidelines for Environmental Noise Impact Assessment* published by the Institute for Environmental Management and Assessment (IEMA) in 2014 provide guidance on all aspects of environmental noise impact assessment.

1.1521.139 The guidance advises that, for broadband sounds that are similar in all but magnitude, a change in noise level of 1 dB may be just perceptible under laboratory conditions, whilst a change of 3 dB is just perceptible under most normal conditions.