

21.03224.FUL: Appendix B – Noise Policy Context

National Noise Policy

Noise Policy Statement for England, Department for Environment, Food & Rural Affairs, 2010 (NPSE, 2010)

National Planning Policy Framework (NPPF)

The original National Planning Policy Framework (NPPF) was published in March 2012 with revised versions published in 2019 and July 2021. It replaced previous national planning policies such as Planning Policy Guidance PPG24: Planning and Noise. In terms of noise, the most relevant paragraphs are:

- **Paragraph 174** which states, “*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 .. noise pollution ...*”

- **Paragraph 185** which states, “*Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from this development. In doing so they should:*
 - (a) *mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*”

Planning Practice Guidance (PPG) – Noise (Government Guidance)

The Government launched the PPG March 2014 and refreshed it in July 2019. The section on noise (PPG-Noise) provides tabulated descriptions of likely human response to noise exposure and example outcomes based on the noise effect categories introduced in the NPSE, 2010 based on the likely average response e.g. for No Observed Effect Level (NOEL), the Lowest Observed Adverse Effect Level (LOAEL) and the Significant Observed Adverse Effect Level (SOAEL). It also adds a fourth category termed Unacceptable Adverse Effect (UAE).

The PPG-Noise recognises that due to the subjective nature of noise there is not a simple relationship between measured or predicted noise levels and the resultant impact, and that this will depend on how various factors combine. Factors which are considered most of relevance to this application are:

- The source and absolute level of the noise together with the time of day it occurs.
- The spectral content of the noise (i.e. whether or not the noise contains particular high or low frequency content) and the general character of the noise (i.e. whether or not the noise contains particular tonal characteristics or other particular features).
- The local topology and topography – local arrangement of buildings, surfaces and the extent to which it reflects or absorbs noise.
- The existing or, where appropriate, planned character of the area.
- The cumulative impacts of more than one source of noise.
- Whether any adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time (and the effect this may have on living conditions). In both cases a suitable alternative means of ventilation is likely to be necessary.
- In cases where existing noise sensitive locations already experience high noise levels, a development that is expected to cause even a small increase in the overall noise level may result in a significant adverse effect occurring even though little to no change in behaviour would be likely to occur.

The NPSE also states that it is not possible to have a single objective noise-based measure that defines SOAEL an indeed LOAEL or NOAEL that are mandatory and applicable to all sources of noise in all situations. Consequently, the SOAEL etc is likely to be different for different noise sources, for different receptors, in different locations (due to varying background noise levels) and at different times. It is acknowledged that further research is required to increase the understanding of what may constitute a significant adverse impact on health and quality of life from noise.

Local Noise Policy

- Cambridge City Council –Cambridge Local Plan 2018: Policy 35
- Greater Cambridge Shared Planning – Sustainable Design and Construction: Supplementary Planning Document (GCSP-SPD, 2020) – relevant noise sections.
- Local Plan - Policy 83: Aviation Development
- Cambridge East Area Action Plan (2008) - Policy CE/26: Noise

Technical Guidance – Noise

- British Standard 5228-1:2009+A1:2014 ‘Code of practice for noise and vibration control on construction and open sites. Part 1: Noise’ (2014).

- British Standard 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Part 2: Vibration' (2014).
- British Standard 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' (BS 4142).
- British Standard 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings' and
- World Health Organization 'Guidelines for Community Noise'

Noise Impact Assessment Methodology/Standard

- **BS4142:2014+A1:2019**

In the circumstances of this planning application, BS 4142 is considered the most appropriate significance of noise impact assessment methodology: the proposed radar is an industrial noise source.

BS 4142 describes the methodology for rating and assessing sound of an industrial and/or commercial nature - existing, proposed, new, modified or additional source(s). The methods described use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident.

The standard describes the recommended methodology to measure and determine ambient, background and residual sound levels, and the rating levels of industrial/commercial sound. BS 4142: 2014 requires consideration of the level of uncertainty in the data and associated calculations.

BS 4142 refers to the sound produced by an assessed source at a sensitive receptor (e.g. outside a façade of a residential building) as 'specific' sound, in this case the proposed main source of noise the radar motor cabin enclosure. The specific sound level (radar cabin noise) is determined by calculating or measuring the equivalent continuous A-weighted sound pressure level of the source over the assessment time period 'T' (LAeq,T).

Where certain acoustic features are present in the source's sound at the assessment location, the Standard requires an acoustic feature correction to be added to the specific sound level to obtain the 'rating level'. Corrections can be included for any of the following acoustic features / characteristics of the sound:

- tonality,
- impulsivity,
- intermittency, and
- other sound characteristics that make it "readily distinctive".

The procedure contained in BS 4142 gives an indication of the degree of significance of any potential impact of sound by determining the margin by which

the rating level of the specific sound source exceeds the existing representative background sound level, examining also the context in which the sound occurs or will occur. The following key parameters are relevant:

- **Specific sound source** is the sound source being assessed.
- **Specific sound level** is the sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T_r .
- **Residual sound** is defined in BS 4142: 2014 as "*ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound*". (without specific).
- **Ambient sound** is defined in BS 4142: 2014 as "*totally encompassing sound in a given situation at a given time, usually composed of sound from many sources near and far*". It comprises the residual sound and the specific sound when present.
- **Rating level** is the specific sound level plus any adjustment for the characteristics of the sound (tone, impulse, intermittent or other acoustic feature). The standard describes subjective and objective methods to establish the appropriate adjustment.
- **Background noise** is the sound level at a given location and time, measured in the absence of intermittent noises, any other extraneous or sound sources under consideration.

The background sound level is the $LA_{90, T}$ of the residual sound level, and is the underlying level of sound. Measurements of background sound level should be undertaken at the assessment location where possible or at a comparable location.

The magnitude / significance of any impact is assessed by comparing the rating level of the specific sound source with the background sound level. Typically, the greater the difference the greater the magnitude of the impact, depending on the context. The standard states:

- 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.
- The lower the rating level is relative to the measured background sound level (+4dB and lower), 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 (0dB and below i.e. a minus level -1 to -5 to -10 and downwards), this is an indication of the specific sound source having a low impact, depending on the context.
- **Greater Cambridge Shared Planning – Sustainable Design and Construction: Supplementary Planning Document (GCSP-SPD, 2020)**

With respect to Noise Generating Development (NGD), including industrial sound sources such as the proposed radar, Table 3.11 of the Greater Cambridge Shared Planning – Sustainable Design and Construction: Supplementary Planning Document (GCSP-SPD, 2020) which relates to new noise generating development – external noise standards for ‘non anonymous noise’ sets local ‘Noise Significance Risk’ and ‘Noise Significance of Effect’ categories, having regard to the principles of BS 4142 outcome criteria and adopting the terminology advocated in the NPSE (2010) and PPG-Noise i.e. for No Observed Effect Level (NOEL), Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL).