

Ventilation/Extraction Statement

The application involves the creation of floorspace falling within planning use class E(b), relating to a member café which would be ancillary to the main padel tennis facility proposed.

In accordance with the validation criteria for planning applications for Mid-Sussex District Council (published September 2024), please find enclosed the following ventilation and extraction statement, prepared by DG Acoustics. This statement is an extract from the wider Noise Impact Assessment (NIA) document prepared by DG Acoustics.

The new commercial kitchen will benefit from a dedicated extraction system that complies with all relevant industry standards, ensuring safe and efficient usage.

Odour Assessment

For clarity purposes, an odour assessment was not carried out in relation to the proposal, and as such does not form part of this ventilation/extraction statement.

The proposed café area will be mainly serving pre-prepared, ready-to-eat food and drinks. As such, minimal cooking will likely be required, and the service will include heating at most.

It is not expected that the café would warrant a separate odour assessment to be carried out, with the extraction fan limiting any potential odour ability. Natural ventilation is also provided through openable doors onto the café terrace.

8 Noise Impact Assessment – Kitchen Extract System

Proposal

- 8.1 The proposal would involve the installation of a kitchen extraction fan and associated ductwork to serve the café.
- 8.2 The extraction fan itself would be located within the kitchen of the café, with the ductwork running vertically and the flue terminating at the roof level. The proposed upper ground floor plan is shown in the figure below, with the location of the extraction fan and vertical flue highlighted in yellow:

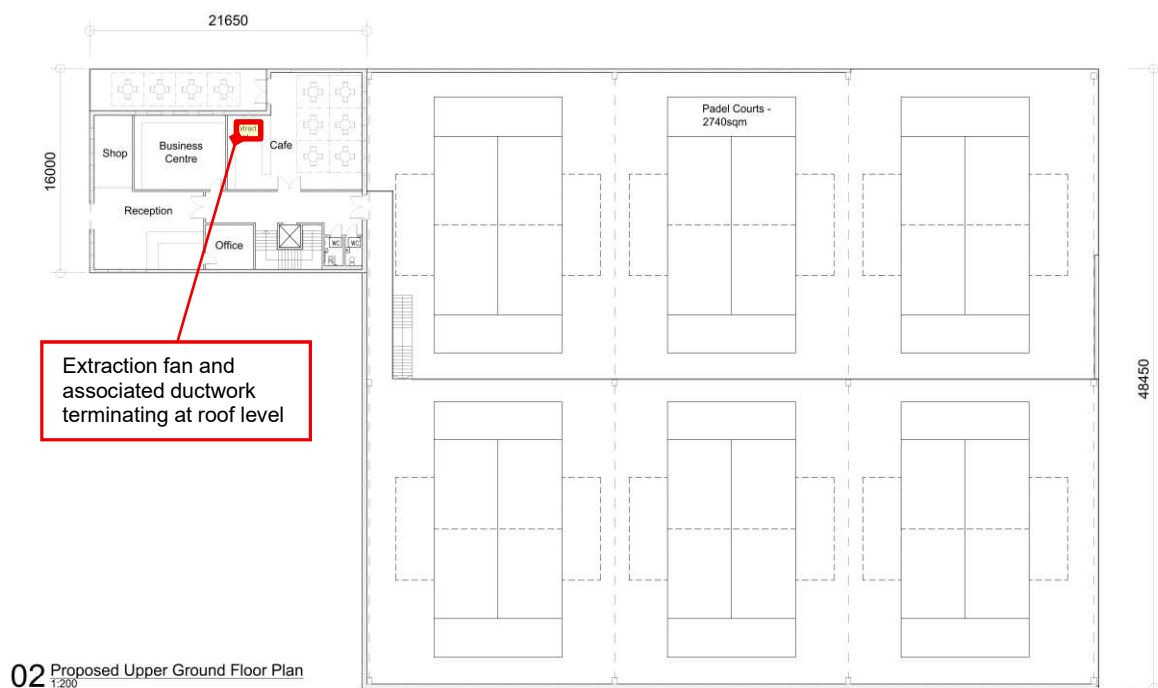


Figure 8.1: Upper ground floor plan showing proposed installation location of kitchen extraction fan and associated ductwork

- 8.3 The proposed make and model number of the fan, and the single octave band/overall sound levels sourced from the manufacturer, are detailed in **Table 8.1**.

Helios Gigabox GBW500/4	Octave Band Centre Frequency, dB							dB(A)
	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
Exhaust sound power levels	72	75	76	78	75	71	67	83

Table 8.1: Sound power levels of the proposed kitchen extraction fan

- 8.4 The kitchen extract system is expected to operate during the café opening hours, which are anticipated to fall within daytime and early evening periods. The system is not expected to operate during night-time hours (23:00–07:00).

- 8.5 For the purposes of this assessment, a daytime assessment period of 1 hour has been adopted, consistent with BS 4142 methodology.

Local Authority Guidance

- 8.6 'Planning Noise Advice Document: Sussex' states that new noise-generating plant and equipment should be assessed in accordance with BS 4142:2014+A1:2019. A summary of this British Standard is presented below.

BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'

- 8.7 BS 4142:2014+A1:2019 provides a method for assessing the impact of industrial and commercial sound on noise-sensitive receptors by comparing the Rating Level of the specific sound source with the background sound level (L_{A90}).
- 8.8 The initial estimate of impact is based on the difference between the Rating Level and background sound level:
- A difference of around +10 dB or more indicates a likely significant adverse impact.
 - A difference of around +5 dB indicates a potential adverse impact.
 - Where the Rating Level is equal to or below the background level, this indicates a low impact.
- 8.9 The Rating Level is derived from the Specific Sound Level (L_{Aeq}) with the addition of acoustic feature corrections, where applicable, to account for characteristics such as tonality, impulsivity, intermittency, or other distinctive features.
- 8.10 The assessment also requires consideration of context, including:
- The absolute sound levels, particularly in very quiet or very noisy environments;
 - The character of the sound relative to the existing acoustic environment and its potential to be distinguishable or incongruous; and
 - The sensitivity of the receptor, including any existing mitigation such as façade insulation or acoustic screening.
- 8.11 Background sound levels used in the assessment should be representative of typical conditions during the relevant assessment periods. The standard reference periods are 1 hour during the daytime (07:00–23:00) and 15 minutes during the night-time (23:00–07:00).
- 8.12 The outcome of the assessment is determined through a combination of the initial quantitative comparison and professional judgement, taking into account the specific context of the site and surrounding environment.

Background Sound Levels

- 8.13 The background sound levels have been derived from the baseline survey undertaken by Pace Consult, as detailed in Report Reference PC-25-0047-RP1 dated 12th March 2025.
- 8.14 The lowest measured daytime background sound level across all monitoring locations was L_{A90} 46 dB. This value has been adopted for the purposes of assessment as a robust and conservative representation of background sound conditions, ensuring that the assessment reflects a worst-case scenario.
- 8.15 It is noted that background sound levels at individual receptor locations may be higher than this value; therefore, the use of L_{A90} 46 dB is considered to provide a suitably precautionary basis for assessment.

Calculated Sound Levels at the Closest Noise Sensitive Receptors

- 8.16 The noise model produced as part of the padel tennis exercise has been adapted to calculate the Specific Sound Level of the extraction fan at the closest noise-sensitive receptors (NSRs).
- 8.17 The sound power of the extraction system has been set to the source sound power levels detailed in **Table 8.1**, and input within the model as a point source at 1.5 metres above the roof level to reflect the termination point of the flue.
- 8.18 A summary of the noise model output is shown in **Figure 8.2**.

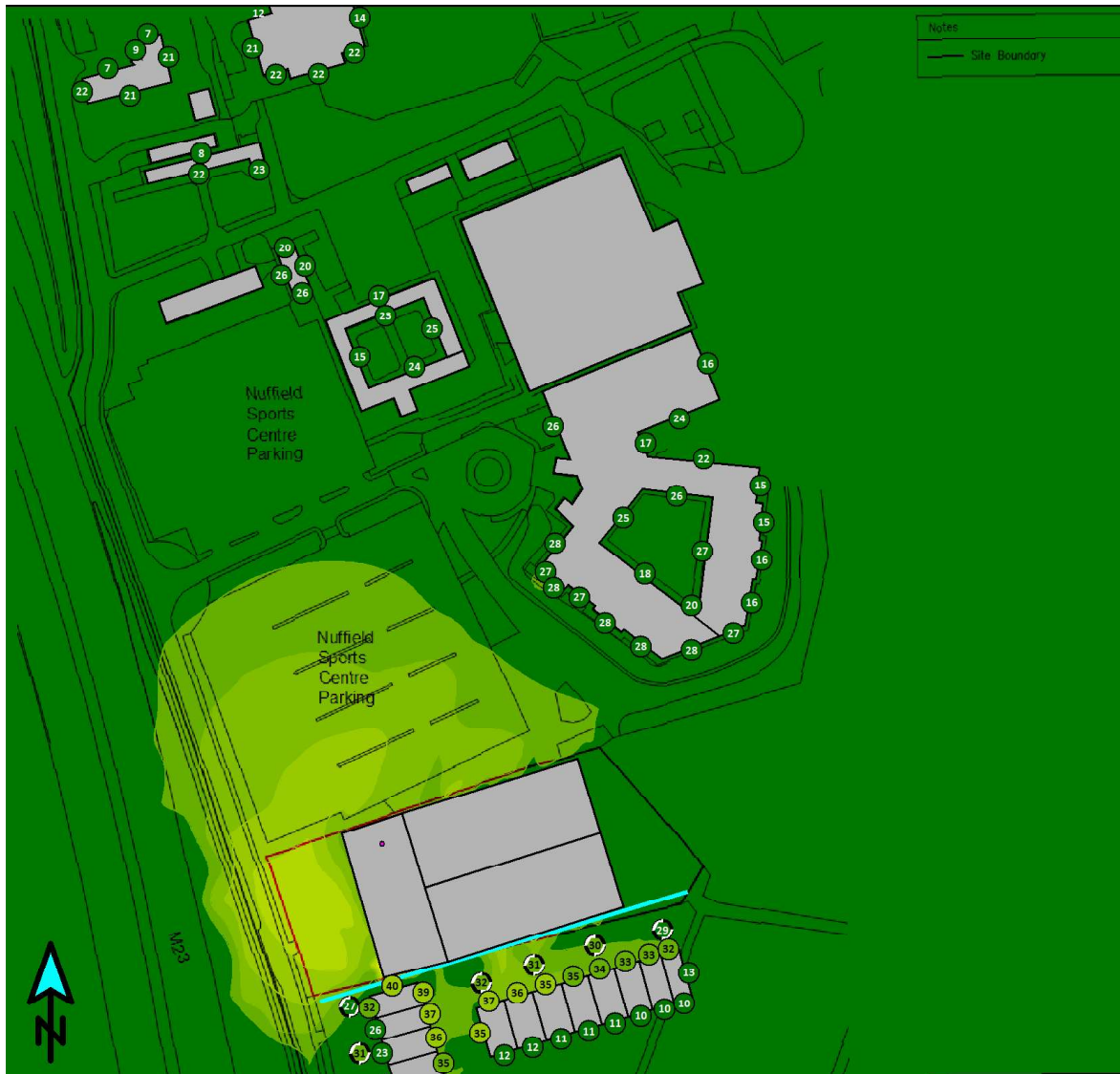


Figure 8.2: Noise map of kitchen extraction system noise emissions (Specific Sound Level calculation)

- 8.19 In accordance with BS 4142, acoustic feature corrections have been considered at the receptor locations to account for any perceptible characteristics such as tonality, impulsivity or intermittency.
- 8.20 The need for such corrections depends on the audibility and perceptual prominence of the specific sound relative to the prevailing background sound environment.
- 8.21 At the existing receptors (NSRs 1 & 2), the predicted Specific Sound Levels are significantly below the representative background sound level. In such circumstances, the sound from the plant would be effectively masked by the existing sound environment and would be unlikely to be perceptible. On this basis, no acoustic feature corrections have been applied.
- 8.22 At the future receptor (NSR 3), the predicted Specific Sound Level is closer to the background sound level and may be just perceptible under certain conditions. As a

precautionary approach, a +2 dB correction for potential tonal characteristics has been applied.

8.23 No corrections for impulsivity or intermittency are considered necessary, as the plant is expected to operate steadily and continuously.

8.24 **Table 8.2** compares the Rating Sound Level calculated at each receptor location against the minimum background sound level during daytime hours, when the extraction fan might be in use.

Receptor	Background Sound Level dB $L_{A90, T}$	Worst-Case Specific Sound Level at Receptor dB $L_s = L_{Aeq, Tr}$	Worst-Case Rating Level at Receptor dB $L_{Ar, Tr}$	+/- Compared vs Minimum Background Sound dB
Existing	46	28	28	-18
Future (allocated housing)		40	42	-4

Table 8.2: Summary of the unmitigated Rating Levels at the receptor façade

8.25 As noted in BS 4142:2014+A1:2019, “the lower the rating level is relative to the measured background sound level, the less likely it is that there will be an adverse impact or significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound having a low impact, depending on the context”.

8.26 In the case of the existing receptors (NSRs 1 and 2), as the Rating Level is so far below the background sound level, it is clear that the introduction of this source would result in no impact, irrespective of the context.

8.27 In the case of the future receptor (NSR 3), the Rating Level is calculated to be slightly below the adopted background sound level. In accordance with BS 4142, this indicates a low impact.

8.28 However, given:

- the potential for future residential development in closer proximity to the site; and
- the desire to ensure a robust and future-proof design,

8.29 it is recommended that additional mitigation be incorporated to provide a further margin below the background sound level.

8.30 A design target of achieving a Rating Level of approximately 5–10 dB below the background sound level is considered appropriate to ensure that plant noise remains effectively imperceptible in the context of the future sound environment.

8.31 This can be achieved through the incorporation of an in-line attenuator within the ductwork.

- 8.32 This level of mitigation could typically be achieved through the incorporation of an appropriately specified in-line attenuator within the ductwork.
- 8.33 The final selection of attenuation measures should be confirmed at detailed design stage, taking into account:
- required acoustic performance across octave bands;
 - system pressure drop;
 - regenerated noise; and
 - overall system efficiency.
- 8.34 It is recommended that a condition be attached to any planning consent requiring that fixed plant and equipment associated with the development shall be designed and installed such that the Rating Level, as determined in accordance with BS 4142, does not exceed a level minus 10 dB below the representative background sound level at the nearest noise-sensitive receptors.
- 8.35 This will ensure that plant noise does not give rise to adverse impacts on residential amenity.