

Ref: AS7569.171019.L2.1

19 October 2017

Mr D Melhuish
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Dear David

AS7569 THE GYM GROUP

Coram Street Plantroom Extract Fans Noise Study

Clarke Saunders Associates has undertaken a desktop study to assess noise emissions associated with the proposed change of plant room extract fans serving the gym on Coram Street, London WC1N 1HB.

The two new fans proposed to replace the current four units are both of the type Vent Axia Model LCA7131440, with discharge sound power levels as confirmed below:

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | Total |
|------------------------|----|-----|-----|-----|----|----|----|----|-------|
| Sound Power Level (dB) | 75 | 75 | 73 | 71 | 72 | 70 | 64 | 57 | 81 |

The retained vertical exhaust air duct will be fitted with an attenuator providing the following insertion losses:

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
|--------------------------------|----|-----|-----|-----|----|----|----|----|
| Attenuator Insertion Loss (dB) | 5 | 11 | 21 | 33 | 37 | 36 | 27 | 18 |

From experience of previous developments in the Russell Square/Bloomsbury area, it is expected the night-time background noise level in the vicinity of the gym is unlikely to fall below around L_{90} 45dB(A).

Calculations of expected fan and plantroom noise emissions, attached to this report, show that the attenuator will be capable of controlling the overall level to around 28dB(A) at the nearest receptor. i.e. some 17dB below the background noise level.

Policy A4 of the Camden Local Plan 2017 states that,

The Council will seek to ensure that noise and vibration is controlled and managed.

Development should have regard to Camden's Noise and Vibration Thresholds (Appendix 3).'

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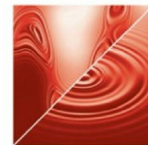
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Appendix 3 advises noise thresholds for industrial and commercial sources as;

Where appropriate and within the scope of the document it is expected that British Standard 4142:2014 'Methods for rating and assessing industrial and commercial sound' (BS 4142) will be used. For such cases a 'Rating Level' of 10 dB below background (15dB if tonal components are present) should be considered as the design criterion).

Noise emissions from the fans and plant are not expected to be perceived as being clearly or highly tonal at the receptor locations. The predicted noise emissions, therefore, comply with the requirements of Policy A4.

We trust the above to be of assistance and sufficient for your requirements. Please do not hesitate to contact us with any queries you may have.

Yours sincerely

for CLARKE SAUNDERS ASSOCIATES



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Encl.

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clarke saunders | acoustics

**AS7569 - The Gym Group General File
Coram Street Plant Noise Assessment**

| Plantroom exhaust fan noise | | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1 kHz | 2 kHz | 4 kHz | 8 kHz | dB(A) |
|--|-------------------------|--------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|
| Vent Axia LCA7131440 | Lw | 75 | 75 | 73 | 71 | 72 | 70 | 64 | 57 | 76 |
| Number of Units | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| Fan total | Lw | 78 | 78 | 76 | 74 | 75 | 73 | 67 | 60 | |
| Contribution from condensing plant (86dB(A) predicted plantroom noise level) | Lw | 89 | 83 | 81 | 78 | 71 | 65 | 59 | 53 | |
| Total energy imparted into duct | Lw | 89 | 84 | 82 | 80 | 77 | 74 | 68 | 61 | |
| Attenuator | | -5 | -11 | -21 | -33 | -37 | -36 | -27 | -18 | |
| End reflection at top of duct | | -1 | | | | | | | | |
| Location directivity (hemisphere) | | -8 | -8 | -8 | -8 | -8 | -8 | -8 | -8 | |
| Propagation directivity (60 degree slant) | | 1 | -1 | -3 | -5 | -6 | -6 | -6 | -6 | |
| Distance Loss | 17m | -25 | -25 | -25 | -25 | -25 | -25 | -25 | -25 | |
| Noise Level at Receiver | L_{eq,T} | 52 | 40 | 26 | 9 | 1 | 0 | 2 | 4 | 28 |