SANDY BROWN

Consultants in Acoustics, Noise & Vibration

Memo:	M004-A	**Date:**	22 March 2024
Project:	023295	**Pages:**	2
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Comments on commercial noise transfer to apartments

This memo presents an assessment of potential noise transfer via the party wall between the ground floor commercial unit and adjacent apartment, following comments received from Manchester City Council (MCC) in relation to the s73 application for Eliza Yard.

Potential noise transfer from the commercial unit is expected to be suitably controlled and generally inaudible.

Introduction

The previously approved scheme had vertical adjacency between ground floor commercial unit and level 1 apartment above. Potential noise transfer via this adjacency is controlled by the structural floor.

There is now also a horizontal adjacency between commercial unit and apartment, at ground floor. The party wall has an enhanced sound insulation performance (with sound insulation performance equivalent to the level 1 floor) to control potential noise transfer from the commercial unit to the apartment. This memo presents an assessment of potential noise transfer via this partition.

Partition build-up

The proposed on-site sound insulation performance of the partition between the ground floor commercial unit is $D_{nT,w}+C_{tr}$ 53 dB, which corresponds to an 8 dB uplift compared to the minimum performance requirements of Approved Document E, to protect residents from potential noise transfer from the commercial unit.

The proposed partition build-up comprises 140 mm medium density blockwork (1450 kg/m^3) with independent lining comprising 2 x 15 mm SoundBloc on 70 mm 'I' studs forming 80 mm cavity with 50 mm insulation to the cavity. This can achieve the proposed on-site performance.

Potential commercial activity noise

The specific use of the proposed commercial unit is not yet known. Use class E (a), (c) and (g), (i) as per planning application 130354/FO/2021 covers retail, financial/professional/ other appropriate services and operative/administrative offices, respectively. These are not expected to be noisy uses. There will be no amplified sound or music within the commercial units.

Assessment of noise transfer

MCC Planning and Noise technical guidance (October 2022) does not provide specific criteria with regards to potential noise transfer from commercial units (other than where entertainment noise may be present).

It is proposed that commercial activity noise should be generally inaudible within the apartment (ie, NR 15, with low frequency limits L_{eq} 47 dB at 63 Hz and 41 dB at 125 Hz).

Based on the proposed partition build-up, noise levels of up to L_{Aeq} 75 dB are expected to be allowable within the commercial unit, with low frequency limits L_{eq} 70 dB at 63 Hz and 125 Hz. These limits should be included within the tenant lease agreement to help protect residents from potential noise transfer. However, any of the proposed used (eg, retail, office) are expected to result in noise levels lower than this.

For reference, noise levels greater than L_{Aeq} 75 dB would be close to the Control of Noise at Work Regulations level at which employers must assess the risk to worker's health. Noise levels within the proposed uses (eg retail/office) are expected to be lower than this.