

DAVID TREVOR-JONES ASSOCIATES
CONSULTANTS IN ACOUSTICS, NOISE AND VIBRATION

By Email:

Graham Lea
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The Sanctuary,
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Our ref. DTJ762/L1/02

Your ref.

13 December 2017

Graham Lea 

Dear Graham,

**38-40 Windmill Street
Objection to Application 2017/5692/P**

I am grateful to you for your recent enquiry on behalf of Adriana Giordano. I understand your instruction to be to review the planning application made for development at 4-8 Crabtree Place and associated documents with a view to supporting Adriana's objection to it.

The proposed development includes the addition of five rooftop pavilions housing the stairs up from the dwellings below at 4-8 Crabtree Place to five new roof terraces, each with a small paved area. These would be lower than the fourth floor of 38-40 Windmill Street and so would be over-looked from rather than overlook the closest window on the rear (north) façade of the fourth floor flat. Four of the five would be actually, or close to being immediately below that residential façade.

I cannot assume any unlawful use of the proposed facilities for the purpose of a planning evaluation. I can only anticipate and evaluate the effects of, lawful, predictable use. I imagine that this could include regular small-scale social gatherings on summer evenings. There could be occasional larger scale parties.

I can estimate the propagation of vocal sounds over the distance between the proposed terraces and the north façade of 38-40 Windmill Street. However, I am uncertain about my interpretation of ADZ Architects' drawings as the plans (specifically Site Plan Proposed, PL03 Rev A) do not seem to tie in with the sections (specifically Sectional Analysis, PL09 Rev -). The shortest propagation distance from the closest point on the southern boundary of the proposed roof terraces to the fourth-floor façade of 38-40 Windmill Street is 9.6 metres measured from the sectional analysis, PL09. The proposed development includes a 'green wall' spanning between each pair of pavilions. The best estimate I can make of the height of the proposed green walls comes from drawing PL07 'South Elevation Existing and Proposed' in which it appears to be less than 2 metres. Given the angle of view from our client's flat above, I have ignored any barrier effect from the proposed green walls against sound

propagation from the terraces but could accept that they might contribute a very slight, probably insignificant, attenuation owing to their acoustic absorption.

I have adopted vocal source sound levels from a table of vocal effort values provided in BS EN ISO 9921:2003¹. These represent adult male speech on a scale from “relaxed” to “very loud”. Taking the value for “raised”, given that from my experience of younger men talking in London pubs ‘raised’ seems to be the present normal, a person speaking straight from the closest point on the proposed roof terraces straight towards the rear of Windmill Street would generate about 55dB at the façade (A-weighted speech sound pressure level ignoring reflection). In reality that would only occur if an adult male emerged from the stairs onto the roof and leaned on the green wall directly facing Windmill Street while speaking conspicuously loudly, perhaps, for example, into his mobile phone.

Conversation around a table on the closest terrace would probably not generate that kind of level both because of the slightly greater distance and barrier effect and, more importantly, because any particular speaker would be less likely to be facing Windmill Street directly. I can speculate that a party of standing speakers on that terrace trying to talk over one-another would generate more sound energy than the single loud male and would be more likely to include individuals directly facing our client’s façade. However, human voice sounds do not add in the same way that machinery noise does and I cannot say that ten adult males speaking with raised voices will generate ten times the energy of one at any specific time. A ‘loud’ voice pitched over the ‘raised’ level would individually generate a decibel or two over 60dB at the closest point on the Windmill Street façade.

The transmission of sound through a façade from outside to inside is rather complicated and difficult to calculate accurately, but a rough rule-of-thumb often used to guesstimate a value takes the attenuation through an open window into an averagely absorptive room as 10dB. By that measure the loud adult male speaker would be heard in the room at about 45dB and the loud party voice at just over 50dB (A-weighted sound pressure levels, LpA).

We can selectively hear sound with a distinctive characteristic or information content, speech being perhaps the archetype, over and through background noise. The average ambient sound level at the rear of 38-40 Windmill Street through the late afternoon and evening is 56dB (LAeq,15min) over a background level of 55dB (LA90,15min). The correspondence of the propagated voice level value at the residential façade with the ambient and background levels does not mean that it would be inaudible. However, without having performed detailed calculations in the frequency domain to prove the point, it probably does mean that it would be unintelligible.

There is no standard or guideline for the acceptability or otherwise of human activity sound including speech. In my experience, such cases are weighed on merits.

I shall be happy to answer any questions and to discuss the facts to assist you and/ counsel in any way I can.

¹ BS EN ISO 9921:2003 Ergonomics — Assessment of speech communication. British Standards Institution, Chiswick.

Yours sincerely

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David Trevor-Jones CPhys, MInstP, FIOA

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