

From: Richard Sharland {
Sent: 19 June 2014 10:28
To:
Subject: KS Bar - Acoustic Appraisal

Katarzyna, Simon

Following my site visit last week, please find below a brief summary of the findings, and recommendations for means by which the current situation may be improved.

Firstly, let me confirm that the Local Authority will wish to see any noise escaping from the basement bar limited to a level which is barely audible in any adjacent residential property. In order to equate this to an objective level for the purposes of predictions and calculations, I have interpreted this requirement to equate to an overall noise level of no greater than 25 dB(A) in adjacent flats. In addition, we must give particular consideration to the low frequency element of the noise and hence there is a secondary target that the residual noise does not exceed a Noise Rating limit of NR20 (this gives limits frequency-by-frequency to ensure, here, that you don't have all of the acoustic energy concentrated in one low frequency band).

Having carried out a sound insulation test from the basement room to Flat 2, I have established the current sound level difference between the proposed bar and the two bedrooms of the flats.

If no works were undertaken in the basement, any amplified music would need to be controlled to a level of about 80 dB(A) in the room. You might be able to push this to an overall level of 85 dB(A) but you have to attenuate the low frequency signal to a very signal to such a degree that you would end up with a very 'tinny' sound.

During the testing, it was clear that the dominant noise transmission path was via the flanking walls of the building (i.e. those structural walls which run right up the building from basement to first floor flat). There may be a secondary component of direct noise transmission (through the floor into the ground floor bar and then through next floor into the flats) but this is currently masked by the flanking noise transmission.

Therefore any improvement will initially be depending treating the flanking walls. I have recommended that the three 'external' walls of the basement bar be lined with an independent system. This will comprise a timber or metal studwork frame set 10mm clear of the walls and fixed at head and foot only (no fixings back to the wall). Fill the studwork frame with 50mm insulation quilt and then face with 2 x 15mm plasterboard. Here, SoundBloc board would be better than Wallboard, but the difference in overall effect will be marginal.

I would hope that, with this treatment in place, you would see an improvement of at least 5 dB(A) in the allowable noise levels within the bar. Thereafter, the situation will no doubt be limited by the direct sound transmission. You indicated that you are not in a position to effect remedial works to the floor structure at this time. I therefore suggest that you instigate the flanking treatment discussed and that a check is then made with a PA system in the room to determine the limit for acceptable noise at that time. We can then discuss further works which would allow music volumes to be increased subsequently, and these works could form a second phase of the project to be undertaken at a later date.

In respect of controlling the PA system, there are two approached to discuss with your PA people. The preferred solution is a digital SoundWeb controller which provides very detailed control of the PA output - both in overall volume and any frequency of concern. A lesser alternative would be a Formula Sound Automotive Volume Control (AVC) Sentry system, which fits into the PA rack and also provides a limit on the output from the amplifiers to the speakers. The third option is a Castle Electronic Orange. This operates by monitoring the sound level in the room and, if a predefined limit is exceeded, a warning light by the DJ is illuminated. If the light stays on for a predetermined period (e.g. 3 seconds), the power to the P A is cut, for another pre-defined period. This break is very effecting in persuading a DJ to moderate the volume and

avoid the hiatus.

Please have a chat with your supplier and come back to me with any queries.

Regarding the speaker design, my advice is to have as many speakers as you can, as small as you can, distributed around the bar. This means you will have the most efficient coverage and will need to put the least energy into the room to achieve a particular volume. Bass bins (if any) must be located on a spring-mount bass (I can provide further details on receipt of the bass bin details). Any wall mounted speakers should be on anti vibration brackets, such as the Power Drive (<http://mypowerdrive.com/products/light-duty-anti-vibration-wall-bracket-max-10kg-black-or-white-wms-50av/>)

I hope this brief note will enable you to progress matters, but please do not hesitate to contact me with any queries arising.

With best regards

Richard

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Director

PLEASE NOTE, I WILL BE AWAY FROM THE OFFICE FROM MONDAY 7th JULY UNTIL MONDAY 28th JULY

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