SANDY BROWN

Consultants in Acoustics, Noise & Vibration

The Chairman
Bloomsbury Association
c/o 8 Gower Street
London
WC1E 6DP

15306-L01-C

17 November 2015

112A Great Russell Street, planning application 2015/3605/P
Acoustics review

Dear Sir

At the request of the Bloomsbury Association, Sandy Brown Associates (SBA) has reviewed the most recent acoustics related information submitted as part of planning application 2015/3605/P, which includes:

- Noise Impact Assessment from Hawkins Environmental (HE) dated 6 November 2015
- Draft hotel management plan (HMP) dated November 2015

The proposal is understood to comprise the construction of 166 small windowless hotel rooms in the lowest levels of the building's car park. This requires new heat rejection plant and power provision located at ground level, the relocation of some existing plant at lower levels, and a large amount of air to be moved in and out of the space by a mechanical ventilation system from ground level. There are also concerns with potential noise from increased pedestrian traffic and noise from congregating, servicing and construction.

A previous review on the planning documents was carried out in August 2015. A letter, reference 15306-L01-C, was issued with our concerns on 19 August 2015. Since then, a new environmental noise survey over a longer time period has been undertaken and the results incorporated into a new noise impact assessment report.

Noise Impact Assessment report review

The updated noise impact assessment prepared by HE is version 9 of the report we first reviewed as version 3. It includes data from the updated survey undertaken from Thursday 8 to Monday 12 October 2015 and provides further detail in line with the comments SBA had made previously.

The first sections give an overview of the project and the relevant guidance and requirements determining the environmental noise criteria for the project.

Noise measurement study

Section 3 gives details of the new noise survey that was undertaken, summarises the results and sets new criteria levels for plant noise egress.

The previous noise report used data from a survey carried out for a single weekday in 2012. As there were concerns that noise from existing plant did not meet requirements then, and experience that the Sunday night to Monday morning period is many times quieter than weekdays, even in central London, a new survey was undertaken to give more confidence to the neighbours that the right background noise levels were known.

To this end, a location was offered by the neighbours on a balcony of the residences across Adeline Place to be more clearly representative of the receiver noise levels. The installation of the equipment was witnessed by Reena Mahtani of SBA. The location was considered suitable for representative measurements, and based on the microphone location would be considered to have measured facade levels.

The results are summarised by giving the logarithmically averaged L_{Aeq} and L_{A90}, and the highest L_{Amax} for each day, evening and night period of the survey. The results show that the noise measured was just slightly less than that measured three years ago. Noise on Thursday and Sunday nights was generally similar but varied during the day and evening.

- It bears mention that the existing noise levels on this balcony are from 4 to 13 dB higher (night to day, respectively) than what is currently recommended as an upper guideline level for outdoor amenity space (L_{Aeq} 55 dB, as per BS 8233), so it is important that new development not add to this.

The report then discusses the reasoning for using the 2014 version of British Standard 4142 to set the levels used to establish noise egress criteria. Traditionally, the lowest background noise level (L_{A90}) measured during the period at which the plant would operate was used, particularly in London. The new procedure instead recommends statistical analysis of the measurements obtained for each period (day, evening and night).

Key reasons for using the lowest level were to better combat noise creep in urban areas and to better ensure that complaints were unlikely. Using the lowest level would both better protect the hotel from complaints and the neighbours from rising noise levels, so it will continue to be something developers may choose to be good neighbours, and it can continue to be something local authorities choose to further their need to reduce high noise levels in their jurisdiction.

However, as can be seen in the report, the differences in the two methods are only resulting in a negligible 1 dB relaxation at night, and with adjustments only 2 dB during the day, so it is likely best to set this discussion aside.

Looking at the histograms in Figures 3.2 to 3.4 and the resulting typical noise levels declared, our observations are:

- For each, the report takes the modal value as the 'typical' noise level. Though BS 4142 specifically states that neither the minimum nor modal value should necessarily be considered the typical value, for this set of data the mode appears reasonable.
- While it is not stated in the report, the night-time histogram (Figure 3.4) is looking only at one night (based on the 'number of occurrences'), apparently Thursday night. This is the quietest night of the four measured, and results in a typical background noise level (based on the mode) of L_{A90} 50 dB, which is just 1 dB higher than the lowest value.
- However, the daytime histogram (Figure 3.2) presents data from all days, including the louder and less typical Friday and Saturday. This could only be used to determine a 'typical' level if a full week of data was measured. To protect the neighbours, the level from the quietest day should be used instead, which is L_{Aeq} 55 dB from Sunday.
- The evening histogram (Figure 3.3) is also including all four evenings, which could not be considered 'typical' unless an entire week was measured. The typical level from the quietest evening should be used instead, which is L_{Aeq} 52 dB from Sunday evening.

The resulting typical background noise level for each period should thus be L_{A90} 55 dB, 52 dB and 50 dB for the day, evening and night periods, respectively. For comparison, these levels are no more than 2 dB higher than would have been determined using the traditional practice we recommended, and thus not a significant loss of amenity.

However, the day and evening values currently in the report (L_{A90} 58 dB and 56 dB, respectively) are not representative of typical conditions, and are not acceptable.

Plant noise impact assessment

Section 4 gives an assessment of the noise impact of the plant items proposed.

As understood to be agreed with Camden, noise from the cumulative operation of new plant shall not exceed a level 10 dB lower than the typical background levels from the new survey when calculated/measured at the noise sensitive receivers. This is understood to take into account that plant will have inherent notes and impulses. Based on the previous section, these values would be L_{Aeq} 45, 42 and 40 dB, for the day, evening and night periods, respectively.

A breakdown of the plant items proposed by Hoare Lea has been provided along with the noise data available. Final selections have not been made at this time, which is understandable, so typical plant and calculations have been presented. The report mentions that a full assessment will be needed as the design progresses.

- It should be required by condition that a full analysis of the plant proposed for the project is undertaken and submitted to the local authority for approval before its

installation, and a test is conducted of the installed plant showing compliance before its operation is allowed to commence.

The analysis of noise takes into account 5 air-source heat pumps (ASHP), louvred intake/exhaust for the internal air-handling units (AHU) and the plant within the substation. The assumptions are understandable for an analysis at this stage of the project, and the calculation to the Bedford Court Mansions appears reasonable:

- The 3 dB correction added to each calculation is indeed required to allow comparison with the survey levels, which were facade levels.
- It is noted the losses taken through the louvres are for specialist acoustic louvres, not standard weather louvres. Care should be taken with the final calculations as to their spectral performance in relation to the plant selected.
- The current calculation relies on the attenuation of the AHUs to keep noise levels at the intake/exhaust louvres 10 dB or more lower than the levels for the ASHPs.
- The calculation for the ASHPs cuts very close to the night time limit of L_{Aeq} 40 dB. Careful consideration will be needed to select quiet units, limit their number and keep them maintained. We expect more than just the acoustic louvre will be required.

Note the generator has not been included in the above calculation. See the next section.

Generator

The standby generator is stated in the report to only be needed for life-safety, and as such can have a relaxed criterion of 10 dB above the typical background. The specific use of this generator needs to be made clearer before such a relaxation can be acceptable:

- If the generator will only operate life-safety systems such as power for evacuation lighting and the fire-fighting lift, then the relaxed criterion for emergency only use would be warranted, and it is unlikely to be an issue for the neighbours.
- If the generator will provide power to allow continued occupation of the hotel in a power outage (standby power), meaning it could be used to run the ventilation system all night, then it could no longer be classified as an emergency generator, and should instead comply with the same limits as the other plant.

In both cases, testing of the generator needs to be limited by condition to a certain time period and duration. The report suggests once a month, during the day, which is fairly typical, though it should be for no more than one hour if possible.

Hotel noise impact assessment

The updated impact assessment covers many of the issues raised in our original review. However, as is stated in the next section, the remaining issue will be how this is enforced going forward.

Hotel management plan review

A number of our previous concerns have been covered in this version of the HMP, including staffing at the entrance, restricted group bookings, security at ground level, limits on deliveries, management of the bin store, staff smoking, plant maintenance, and a number of measures meant to reduce the burden of policing the plan as in the S106 outline requirements (eg, community liaison, code of conduct instructions to all patrons).

Still some information is still needed:

- How enforcement will be maintained over the life of the hotel (including any successor owners), what measures will be taken if there are violations and within what timeframe, and how it can be improved as needed over time.
- How the loading from delivery trucks onto the electric vehicle will be handled without causing disturbance to the neighbours, and how the noise of this vehicle will be controlled.

Conclusions

Overall, the new survey has resolved a number of concerns there were with the previous survey. The analysis of the results to determine the background noise levels need to be adjusted for the day and evening periods, however, as detailed herein.

1. The noise egress assessment will need to be redone as the design of the mechanical services systems is finalised, which is typical. Approval of this should be required by condition, as should eventual measurement of the installation before occupation.
2. The generator's operation needs to be clarified; otherwise it must be seen as normal plant that should comply with the standard noise limits established.

The hotel management plan is improved over what was previously reviewed, though there are lingering questions about its continued enforcement and with noise associated with deliveries.

This completes our comments at this time. Please do contact us if you require additional information.

Yours sincerely

[redacted]

Jason Swan
Partner

For and on behalf of
Sandy Brown Associates LLP