ROOF TERRACE AT THE FORMER BHS, YORK

ACOUSTIC REPORT REVIEW

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1 INTRODUCTION

An application to convert the former BHS store on New Street, York into a bar and nightclub was granted permission in April 2017. Following this, an additional application (reference number 16/02639/FUL) for a roof top terrace and bar on the site has been submitted. This application included an acoustic report undertaken by ACA Acoustics (ref: 170604-R002) to assess noise impacts on the nearby noise sensitive receptors.

This report is a review of the AQA Acoustics report submitted as part of the roof top terrace and bar application, to determine whether noise impacts have been properly assessed. Each section of the AQA report has been reviewed in turn, and a summary of our findings provided at the end.

2 REVIEW

2.1 Consultation

The ACA report does not include any reference to consultation undertaken with the York City Council environmental health department, or any other relevant consultees. While not strictly necessary, consultation with environmental health can help inform consultants on any local issues, and any specific guidance that might be appropriate to assess against.

2.2 Criteria and Method of Noise Assessment

The report states that;

'There is no specific formal method for undertaking an assessment of noise from patrons potentially affecting nearby residential receptors'

The report goes on to reference other guidance, such as the NPPF, NPPG, BS 8233:2014 and the Guidelines for Environmental Noise Impact Assessment as being suitable for the assessment of noise from the rooftop terrace and bar. No reference is made to the *Institute of Acoustics Good Practice Guide on the Control of Noise from Pubs and Clubs* (2003). This document provides guidance for the assessment and control of noise affecting noise-sensitive properties from the public use of clubs, discos and other similar premises. The main sources considered in this document are music, PA systems, beer gardens, people in general and plant and machinery. It is therefore our opinion that this guidance would cover a rooftop terrace and bar, where music will be played and people will presumably be talking and shouting, and as such should have been used to assess noise from the Development. In addition to providing guidance on the control of noise, the document states that;

'for premises where entertainment takes place on a regular basis, music and associated sources should not be audible inside noise-sensitive property at any time.'

It is anticipated that because the bar/rooftop terrace will be open most nights it can be considered that entertainment will take place on a regular basis, and should therefore be inaudible inside noise sensitive receptors.

2.2.1 BS 8233:2014

The AQA report goes on to reference BS 8233:2014 *Guidance on sound insulation and noise reduction for buildings*. It reproduces Table 4 of BS 8233:2014, which provides target internal levels in bedrooms for sleeping and resting (35 dB $L_{Aeq16hour}$ during daytime hours and 30 dB $L_{Aeq,8hour}$ during night). It should be noted however that immediately above this table, the standard states that;

'In general, for steady external noise sources, it is desirable that the internal ambient noise level does not exceed the guideline values in Table 4.'

It is not considered that music and patron noise from a bar/club is a 'steady' noise source, and as such, the target levels provided in the report are not appropriate to ensure impact on nearby receptors has been properly assessed. It should also be noted that the BS 8233:2014 target levels '*assume normal diurnal fluctuations in external noise*' and that in cases where the local conditions do not follow typical pattern (i.e. where levels increase significantly from approximately 6 – 11 pm while a bar is operational), an alternative period may be used. The AQA report has not considered this.

BS 8233:2014 states that in terms of regular individual noise events a guideline value may be set in terms of SEL or $L_{Amax,f}$, depending on the character and number of events per night. While no specific level is provided in BS 8233, the World Health Organisation's Guidelines for Community Noise advises that:

'For a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45 dB,L_{Amax} more than 10-15 times per night'.

The ACA report does not take into account individual noise events, which from a rooftop terrace and bar are likely to be considerable. It should also be noted that York City Council often set a more stringent noise limit of no individual noise event exceeding 50 dB, L_{Amax} at any point during night-time periods; again, this has not been considered in the AQA report.

The ACA report states that:

'BS 8233:2014 advises that sound transmission through an open window limits the sound insulation through the façade to 15 dBA.'

While BS 8233:2014 does specify that an open window reduces insulation to approximately 15 dB (not dBA), it goes on to state that this can vary significantly depending on the window type and the frequency content of the external noise. It should be noted that the ACA report does not assess the windows of the nearest receptor, or take into account the frequency content of noise from the development. In this instance, the nearest window is single glazed unit, and the low frequency content of most modern music is likely to mean that in practice 15 dB reduction is unlikely to be achieved.

2.2.2 Section 2.4 Guidelines for Environment Noise Impact Assessment

In section 2.4 of the ACA report, it is stated that where there is no formal assessment methodology, a new noise source should be considered as to whether it is likely to cause a significant increase in the level and character of noise, compared to the existing ambient noise climate. As discussed previously, it is considered that the IOA Guidance on Control of Noise from Pubs and Clubs provides guidance and a limit (inaudibility inside the nearest receptor), which is appropriate for this assessment.

The ACA report uses the Guidelines for Environmental Noise Impact Assessment to determine the significance of any change noise levels from a new noise source. It argues that because the nearest receptor is a hotel (Judges Court Hotel), a relaxed criterion may be appropriate during daytime periods as residents are less likely to be in to room during daytime. No context or judgement is used to justify this relaxed criterion. The hotel has a history of noise complaints from hotel guests, which makes this receptor more sensitive, rather than less.

The ACA report states that a moderate impact is acceptable during daytime hours, between 3 dB to 4.9 dB change in sound level. A moderate impact, as described in Table 4 of the ACA report would be in intrusive perception, where the noise impact can be heard and cause change in behaviour and/or attitude, with a potential for non-awakening sleep disturbance. Given that hotel patrons already complain of sleep disturbance at times, any potential for increase in disturbance would not be acceptable.

2.3 Background Sound Level Survey

Section 4.1 of the report specifies that a background sound survey was undertaken between Friday 9th and Monday 12th June (i.e. a weekend period). Due to the busy city centre location, it is likely that noise levels during weekend periods will be higher than those during weekday periods. It is likely that the bar will be open throughout the week, and as such it is considered that the background survey, is not representative of the likely operating hours.

The report does not contain any photographs of the equipment in situ, or drawings showing the location of the monitoring position. There is no discussion of the existing sound environment, identification of the main noise sources or an explanation of why the equipment was placed in the selected location. The report states that '*the weather was primarily dry and calm*' however there is no explanation as to how this was determined (i.e. weather station?), or whether periods that were not dry were omitted from the results. Due to the elevated and exposed monitoring location, it is considered that wind could have a significant impact on the results, however no information on wind speeds during the survey has been provided.

This information is generally required as best practice, in order to ensure that any monitoring is representative and easily replicable.

2.4 Assessment of Noise from Roof Terrace and Bar

In order to assess noise from the use of the roof terrace and bar, the report states that average conversational speech is 60 dB(A) at 1 m from the speaker, while raised voices are 65 dB(A). It is considered that noise from the use of a busy terrace, where patrons will be socialising and drinking, is likely to be at least the level of 'raised voices' and could often be nearer to 'shouting', which can be as loud as 78 dB(A) at 1 m[1]. Again, maximum levels have not been considered as part of the assessment.

The report states that a noise model was used to calculate an accumulation of 42 patrons talking simultaneously, which is understood to be half the total capacity of 84 people. Notwithstanding the fact that the patron noise levels could have been underestimated by some 13 dB, the report states that the model has been based on the terrace and bar at half capacity, which could further underestimate levels by around 3 dB in total. It should

[1] http://www.engineeringtoolbox.com/voice-level-d_938.html

also be noted that the capacity in the report is based on the number of seats, when in practice is it likely that a significant amount more people could be on the terrace if standing.

The report states that the barrier is 2.6 m high, which also appears to be the height used in the calculations provided in Appendix A. A drawing[2] submitted as part of the development however shows this height as 2.1 m.

Section 5 of the report states that:

'It is anticipated that no music would be played in the external roof terrace and that music in the second-floor bar will be played at 'background' volume only, such that it is inaudible outside nearby noise-sensitive receptors.'

The application should confirm that music would not be played in the external roof terrace, rather than anticipated. No information is provided as to what 'background' volume is, or how it is assumed that it would be inaudible at the nearest property. It would be a reasonably easy calculation to determine the maximum speaker level for any music by reverse calculating an inaudible level (e.g. NR15 internally) at the nearest receptor. In our personal experience, this type of bar is unlikely to play music at 'background' level, and music from the bar should be modelled as per other noise sources. If necessary, a noise limit on music noise should be set to ensure the level remains at 'background'.

The report ends by stating that 'occasional individual shouts or laughter may be perceptible', which is likely to be an understatement, and given the existing noise issues experienced by the Hotel, is not considered acceptable.

3 CONCLUSION

In summary, it is considered that the report submitted as part of the planning application does not fully assess noise from the roof bar and terrace, as follows;

- The effects have noise have been assessed against incorrect criteria;
  - It does not consider the IOA *Guide on the Control of Noise from Pubs and Clubs*, which states that noise from clubs should be inaudible at the nearest noise sensitive receptors;
  - The limits contained in BS 8233:2014 are for the assessment of 'steady' noise sources;
  - The assessment does not take into account individual noise events or max levels which could interrupt and disturb sleep;
  - It does not consider the YCC criteria of no individual noise events exceeding 50 dB(A) internally; and
  - Makes no assessment of the window of nearby receptors to determine whether 15 dB reduction is likely to be achieved;
- The assessment has not used best practice;
  - No consultation has been undertaken with York City Council;
  - The report argues that a relaxed noise criterion is appropriate, despite the hotel experiencing existing noise problems and therefore being more sensitive to additional noise;

[2] 17_01590_FUL_ELEVATIONS_AND_ROOF_PLAN_AS_PROPOSED-1894385

  - The survey does not include a significant amount of information required as best practice to ensure measurements are representative and repeatable; and
  - The background sound survey did not include quieter weekday periods, and therefore cannot be considered worst case;

- The assessment underestimates predicted noise level from use of the bar and terrace.
  - Assessment assumes 65 dB(A) for raised voices, when the level could be as high as 78 dB(A) for shouting;
  - Predictions based on the bar and terrace at half capacity, potentially underestimating results by around 3 dB;
  - Predictions have been based on a 2.6 m high barrier, while the elevations and roof plan drawing submitted with the application shows this barrier to be 2.1 m high; and
  - No assessment has been made of music from the bar, only states that music would be played at 'background' volume. No information as to what this level is, or how it would be controlled is provided.