AIRO

ACOUSTICAL INVESTIGATION &
RESEARCH ORGANISATION LTD

Duxons Turn
Maylands Avenue
Hemel Hempstead
Hertfordshire
HP2 4SB

Registered in England No. 603110 Secretary R C Harding BSc

Consultants in Acoustics, Noise Control and specialist Electro-Acoustic Systems, Laboratory and On-Site Testing Services

Director
A J Jones BSc PhD CPhys MInstP HonFIOA
Principal Consultants
R C Hill BSc FIOA MBCS CITP
W R Stevens MIOA
D L Watts BEng CEng FIOA
Laboratory Supervisor
M Sawyer MIOA

Telephone: 01442 247146
Facsimile: 01442 256749
E-mail: AIRO@bcs.org.uk
URL: http://www.airo.co.uk/

DJB/KH/6982/L2

Mr S Dicocco
Planning Officer
Welwyn Hatfield Borough Council
The Campus
Welwyn Garden City
Hertfordshire
AL8 6AE

27 July 2017

Dear Mr Dicocco,

Planning Application: 6/2017/0400/FULL

We write on behalf of our client, GPL 2014 Ltd, in relation to the planning application detailed above, and in particular to provide further information in reply to comments received from the Environmental Health Officer (EHO).

The comments received from the EHO are provided in bold with our response directly beneath each one.

Prior to this however, it may be useful to outline the noise related documents submitted in support of the planning application.

We understand that to date one AIRO noise measurement and assessment report has been submitted, AIRO Report No. DJB/R6982/D dated 12 May 2017. This report detailed the noise level measurements carried out on the roof of Fountain House and the assessment of the noise mitigation of the building envelope required in relation to the noise sources measured.

Assessments of other noise sources and transmission paths that are more significant in relation to first and second floor levels of Fountain House, such as through the structure of the building itself, have also been completed. These assessments were prepared for submission in relation to the first and second floor level permitted development application (currently withdrawn) with the rationale being that if planning permission was granted for first and second floor levels,

Continued/....

the mitigation proposed would adequately protect the third floor level. These reports are now submitted in relation to this application.

Table 1 provides a summary of the newly submitted reports.

Table 1 – Newly Submitted Noise Reports		
Report Ref.	**Issue Date**	**Content**
DJB/6982	26/04/2017	Sound insulation tests: 1st & 2nd floor main offices
DJB/6982/A	26/04/2017	Sound insulation tests: Club 67 to Foundation House
DJB/6982/B	26/04/2017	Sound insulation tests: Ground floor to first floor offices
DJB/6982/C	26/04/2017	Sound insulation tests: 1st & 2nd floor level extension offices
DJB/6982/E	19/05/2017	Noise and vibration measurement survey for proposed first and second floor residential development
DJB/6982/F	26/05/2017	Noise Mitigation Assessment for First and Second Floor Level Redevelopment
DJB/6982/G	27/07/2017	Roof Mounted Condensers Plant Noise Assessment

It may further be noted that AIRO Report No. DJB/6982/F considers the following areas:

1) Noise levels in proposed dwellings due to general external noise levels
2) Noise levels in proposed dwellings due to Club 67 / Pub patron activity outside the entrance to their premises
3) Noise levels in proposed dwellings due to Club 67 event activity
4) Vibration levels in proposed dwellings due to Club 67 event activity
5) Noise levels in proposed dwellings due to ground floor commercial premises activity
6) Noise levels in proposed dwellings due to The Two Willows pub noise levels

In reply to the EHO comments we respond as follows:

1. The mechanical ventilation system proposed takes no account of cooling matters. We require the following standards: A system that provides for purge ventilation during the summer months and for cooling provision that does not require windows to be opened. The report does not indicate that this is the system which will be installed (i.e. a mechanical heat recovery ventilation/cooling system).

Our report (DJB/R6982/D dated 12 May 2017) provides the noise specification required from outside to inside and leaves the final selection open as other requirements outside of our expertise are also required to be satisfied.

Continued/….

In relation to comment 1 our client, GPL 2014 Ltd, states as follows:

"We are proposing that each dwelling will have air conditioning (heating and cooling) together with a mechanical extract system that complies with Building Regulations Part F- System 3. The specification of the mechanical ventilation is continuous mechanical extraction (with a boost setting) and supply via through-wall vents of high acoustic parameters in accordance with our acoustic report. Furthermore, regarding purge ventilation, the Building Regulations guidance on this matter is specific in three areas; continuous, intermittent and for the purposes of thermal comfort.

For clarity an extract from Approved Document F is provided below:

- ***Purge ventilation** throughout the building to aid removal of high concentrations of pollutants and water vapour released from occasional activities such as painting and decorating or accidental releases such as smoke from burnt food or spillage of water.*
  ***Purge ventilation** is intermittent, i.e. required only when such occasional activities occur.*
  ***Purge ventilation** provisions may also be used to improve thermal comfort, although this is not controlled under the Building Regulations.*

Taking each of the above points;

- *Continuous; the approved document confirms that purge ventilation for wet rooms can be achieved using the proposed extract system, albeit that moisture will take longer to clear. (AD(F) – Table 5.2c). In terms of the habitual environment (cooking of food, decorations etc), this can be considered both continuous and intermittent. As such, where it is continuous (cooking of food), the current system proposed is sufficient given the boost extraction facility, coupled together with a mechanical extract outlet above the cooker and a re-circulating cooker hood with carbon/ charcoal filters to further aid the removal of any associated odours.*
- *Intermittent; where purge ventilation is considered intermittent or occasional (i.e. burning of food), we propose that any purge ventilation is dealt with via the manual operation of the windows to further assist with the immediate removal of odours which will be in addition to the boost extraction system and a re-circulating cooker hood currently proposed.*
- *Lastly, where the issue of purge ventilation and thermal comfort is concerned, we are proposing to install an air conditioning system (heating and cooling) in each dwelling which will assist in the control and regulation of the local environment within the dwelling."*

Continued/….

2. The noise survey undertaken does not appear to consider low frequency noise sources transmission through the building (i.e. bass music from the club etc).

The issue of low frequency noise from the club is primarily dealt with in the reports relating to the first and second floor levels (DJB/6982/F). A buffer zone at second floor level over the top of the club is proposed which will result in there being two separating floors and a full floor level void between the club and the third floor level dwellings. This should adequately reduce the noise transmitted directly through the building via the separating floors. Results from sound insulation testing (see AIRO Report No DJB/6982/A dated 26 April 2017) between the club and the 2nd floor office space at Fountain House demonstrate an existing performance 9 dB better than the minimum values set out in Approved Document E of the Building Regulations. Given that there will be a discontinuity to the third floor level mansard roof / external walls and the proposed platform floor it is considered that flanking transfer from the club to the extension (two storeys above) is unlikely to be significant.

3. The author of the noise report has suggested that mitigation measures ?are perceived t be required? to limit noise and/or vibration from the restaurant/pub ducting. This comment is not helpful, as the consultant must explain whether additional mitigation is necessary or not necessary to deal with noise or vibration. If they are needed then they must state so. In any event the ducting is owned and operated by an different occupier and so there is no provision is the planning application for requiring non-applicants to modify their equipment.

We understand that the ducting in question forms part of the premises controlled by a tenant of our client and therefore that any requirement to extend or alter the current formation can be arranged.

Our report stated that in relation to the sample noise level measurement result of 55 dB L_{Aeq}, 1 metre away from the termination of one of the ducts, the facade mitigation measures outlined elsewhere in the report would reduce the indoor noise levels to below the World Health Organisation thresholds. Given that the noise emissions breaking out through the duct walling are likely to be lower than those emitted from the termination the proposed mitigation should be satisfactory.

With the above information in mind we consider that satisfactory mitigation can be provided and that if any further assessments are deemed necessary this could be secured through use of a condition attached to the planning consent with wording similar to that provided below:

"Noise from extract plant shall not exceed a rating level 10 dB below the representative background noise level 1 metre from the façade of the nearest noise

Continued/….

sensitive premises. Rating levels and background noise levels to be determined according to BS 4142:2014."

4. Little comment is made about possible ambient noise (internal people, music, operations) from the commercial premises directly underneath the proposed residential flats.

The noise level measurements carried out on the roof of Fountain House were carried out over a period including both a weekday and weekend and includes all external noise sources (i.e. inclusive of people using the commercial premises and also the road traffic etc.). It also included any noise transmitted from the activity within the building(s) below. The facade mitigation specifications outlined in the report are therefore suitable to cover all of these noise sources.

Further specific consideration including further noise level measurements of the noise associated with the nearby club (two floor levels below the proposed new build extension of this application) is provided in AIRO Report Nos. DJB/6982/E dated 19 May 2017 and DJB/6982/F dated 31 May 2017 in relation to the re-development proposals at first and second floor levels.

It may be noted that the first and second floor level assessments were based on further noise level measurements, inside Fountain House. The period of measurement was chosen by reviewing the calendar of events for Club 67 and selecting the event that was considered likely to give rise to representative 'worst case' noise levels.

5. The applicant and noise consultant has not addressed the issues with people noise (shouting, laughing, singing etc) which are associated with the licensed premises (we have had a number of complaints about these commercial premises).

The noise level measurements carried out on the roof of Fountain House included all external noise sources (i.e. inclusive of people outside the licensed premises). The facade mitigation specifications outlined in the report should therefore be suitable to reduce the external noise levels from all sources including patron noise to no more than the World Health Organisation indoor guideline noise level values.

Specific consideration of patron noise is considered in the report relating to the first and second floor levels (DJB/6982/F) based on noise level measurements made during an event at the club. As mentioned above in relation to comment 4, the measurements were carried out during an event considered likely to give rise to 'worst case' noise levels from the club.

It was found that the noise levels associated with patron activity outside the premises were in line with the overall noise levels used for the general mitigation

Continued/….

specifications and therefore, bearing in mind that the building will partially shield the top floor residential units by a similar amount as when considering the general situation (i.e. all external noise sources), the general building envelope mitigation specification provided in report DJB/R6982/D in relation to the third floor level should be satisfactory.

6. Deliveries take place early at some of the commercial premises, especially at the front rear of the premises (bin collections bottle collections etc). Again little consideration has been given to these matters.

The external and indoor measurement surveys were focused on noise coming from Parkway and Howardsgate as these were deemed to be the areas where the dominant noise sources were located. The rear of the building was not specifically covered and therefore we do not have measurements of delivery / collection noise directly. Positions 4 and 6 of the indoor noise survey (see reports '/E' and '/F') were in rooms that had windows to the rear of the building and therefore include any deliveries but it is difficult to separate out any deliveries from the other noise levels.

7. The data was recorded 1st- 5th July 2106. I am not comfortable with using old data and in any event find it difficult if not impossible to believe that noise from the Club 67 (directly below) was not the dominant noise source. The extractor system from the restaurant has not been assessed using BS: 4142: 2014 despite the claim that this is a significant source. The acoustic consultant has not indicated or provided the actual number of LA Max "noise events" which exceeded 80dB they have simply stated the highest noise event level and not then explained the LA max level of 92dB.

We do not consider that the noise level data measured between 1 and 5 July 2016 on the roof of Fountain House is 'old'. For it to be considered as such there would need to be a change in the prevailing noise climate, and by extension a change to either the building construction or the surrounding activities. The only change in the immediate area that we know of that may have affected the noise level measurements is the vacating of the office space directly below. As far as we are aware the club and the other commercial operations continue in the same manner that they did at the time of the measurements.

It is recognised that if the condenser units mounted on the roof that served the offices operated throughout the weekend night-time periods this could lead to elevated lowest background noise levels, which when used as part of future plant noise assessments could lead to an underestimate of the noise impact. However, we have analysed the noise levels measured and are confident that the condenser units were not running when the lowest background noise levels were measured and therefore that the measured noise levels are representative of the lowest

Continued/….

background noise levels at the site in the absence of the condenser units (page 8 of AIRO Report No. DJB/R6982/D dated 12 May 2017 provides time histories that clearly show when the condensers were active towards the end of the survey, and that the noise levels associated were not a feature earlier on the survey period).

With regard to which noise sources were dominant; we were not present for the duration of the survey period to witness firsthand the noise climate on the roof and therefore stated in the report the dominant noise sources witnessed at the start and end of the noise level survey period whilst setting up / collecting the equipment.

The noisy indoor activity associated with Club 67 is situated effectively two floor levels below where the external rooftop noise levels were measured, and the new dwellings are proposed. The sound insulation performance between the club and the measurement positions should therefore have been substantial.

AIRO Report No. DJB/6982/A dated 26 April 2017 includes details of measurements of the sound insulation performance between the club and the now vacant office space above. A performance of 52 dB $D_{nT,w} + C_{tr}$ was achieved, 9 dB above the minimum performance requirement set out in Approved Document E for conversion projects. With the roof structure (that will be modified to become a separating floor construction) also between the club and the external measurement positions a good level of sound insulation performance can be expected.

It may also be noted that the noise level time histories for the roof top positions do not indicate that club noise was clearly dominant but rather show the expected patterns mainly associated with road traffic noise.

(Further information in relation to the extractor system is provided in reply to comment 3.)

With regard to L_{AFmax}:

The root cause of the measured 92 dB L_{AFmax} is unknown but it is clear that it was untypical in comparison with the rest of the survey period. Towards the bottom of page 13 of our report DJB/R6982/D we stated that for design purposes an L_{AFmax} of 80 dB was more appropriate. This was based on analysis of the measured noise levels and no more than 10 - 15 exceeedances of the indoor noise level limit throughout the night-time period, as WHO document Guidelines for Community Noise sets out is allowable whilst maintaining reasonable sleeping conditions.

Continued/….

We trust the information provided is of assistance.

Yours sincerely

D J Boaden

D J Boaden BSc MInstP MIOA
Managing Consultant