# SURREY HEATH BOROUGH COUNCIL

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| ***From :*** | Head of Community | ***To :*** | PLANNING – ROSS CAHALANE |
| ***Date :*** | 10th September 2018 | ***Ext :*** | 7357 |
| ***My Ref :*** | PC/JRO/SGC | ***Your Ref :*** | 18/0557 |

# MEMORANDUM

**Ref: 18/0557 1-23 St. Georges Court, St. Georges Road, Camberley.**
**(Revision 1)**

1. Introduction.

1.1. This application is under Section 73A to vary conditions 10 and 11 of planning permission 2004/1050 (conversion of building to apartments) in order to revise the glazing specification required to 10:14:4 on St Georges Road and 10:12:6.4 on High Street elevations respectively, and to require individual glazing units to be corrected where incorrect glazing specification has been used; and condition 12 to ensure that whole building ventilation systems with acoustic trickle vents with a minimum attenuation of 40dB are installed to all windows within flats.

1.2. In support of the application a noise mitigation report by Stansted Environmental Services (SES reference ENVI-GEOR-042 dated 25 June 2018 Version 1) has been submitted. Appendix 1 and 2 of the same details the attenuation of the proposed windows as providing 37dBRw on St. George's Road and 36dBRw on the High Street.

1.3. Plans submitted with the application (Ref WH128/10/P/25.01) detail the works intended to each elevation in support of the variation.

2. Background.

2.1 My initial response to this consultation dated 12 July 2018 assessed this application against the noise climate that existed at the time of the initial 2004 application. Further to legal advice, I am advised that the assessment of this application is to be against the environmental noise climate currently existing. Accordingly the relevant guidance for determining the sound levels within the building is detailed within BS 8233:14 'Guidance on sound insulation and noise reduction for buildings', albeit that internal levels described therein are not intended for rooms that are occupied.

2.2 BS 8233:2014 provides information on the design of buildings that have internal acoustic environments appropriate to their functions and deals with control of noise from outside the building, noise from plant and services within it, and room acoustics for non-critical situations. It is applicable to the design of new buildings, or refurbished buildings undergoing a change of use, but does not provide guidance on assessing the effects of changes in the external noise levels to occupants of an existing building.

3. Relevant Internal Standards.

3.1. Within the BS guidance maximum indoor ambient noise levels for dwellings are set out at Section 7.7.2, Table 4 (reproduced below).

These are as follows;

| Room | Night Laeq 23:00-07:00 | Day Laeq 07:00-23:00 | dBLmax 23:00 - 07:00 |
|---|---|---|---|
| Bedrooms | 30 | | 45 |
| Living Rooms | | 35 | |

A series of notes provide context to the values of Table 4. The most relevant are as follows;

Note 1 advises that the indoor ambient noise levels are *"the sum total of structure-borne and airborne noise sources. Groundborne noise is assessed separately and is not included as part of these targets, as human response to groundborne noise varies with many factors such as level, character, timing, occupant expectation and sensitivity."*

Note 4 deals with individual events and advises that *"Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or LAmax,F, depending on the character and number of events per night. Sporadic noise events could require separate values".*

Note 7 provides a rider to the guideline values within Table 4, "*Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved" The note additionally states… "shorter measurement periods such as LAeq, 1 hour may be used by agreement, provided the selected shorter measurement period is shown to be representative of the entire night or day period".*

The levels apply when windows are closed and background ventilation is provided.

3.2. In the absence of documented guidance of the measurement assessment for 45 dBLa max it is common practice to use the level exceeded 10 - 15 times per night based on measurements taken during a noise survey. It should be noted that it is standard practice to adopt a typical maximum noise level and not the absolute worst-case. To take into account sporadic noise events and in accordance with Note 4 above I have considered using separate values such as $L_1$ or $L_{0.1}$ as an alternative.

3.3. $L_1$ is the sound level exceeded for 1% of the measured time. This means that for 1% of the time, the sound or noise has a level above $L_1$. For the rest of the time, the sound or noise has a sound level at or below $L_1$. This identifies the sound levels due to sporadic or intermittent events such as speech, shouting and traffic, and represent peaks or maximum values over a given time period.

3.4. As stated, generally excluded from the night time dBLa max are noises from road traffic and street speech noise, as the criteria applies to regular and individual sources such as aircraft and trains. However in the knowledge that the site is in the High Street, and that there is likely to be mixed exposure from the now limited (when compared to 2004) entertainment noise, a max internal level of 45dBLa would still be appropriate subject to the 5dB relaxation allowed under Note 7 of Table 4 in the BS8233:14 guidance.

4. Typical current noise levels.

4.1. There have been a number of acoustic surveys submitted in regard to this site and immediate area. These have confirmed that typical local Friday or Saturday night time measurements between 23:00 and 04:00 are as follows;
Table A. Local Noise Environment 2017/18

| Location | Night Laeq 8hr | dBLmax night | $L_1$ night |
|---|---|---|---|
| St. Georges Road | 58 | 73-81 | 80 |
| High Street | 62 | 73-80 | 80 |

The term L1 means that for a measurement time between 23:00 and 04:00 there would be 3 minutes where the sound level exceeded 80dB, and accordingly the sound level for the other 297 minutes would be below 80dB.

4.2. Night time Maximum Levels dBLa.

With the windows as proposed, the maximum level outside to achieve no more than 45dBLamax in the bedrooms at night, allowing for the attenuation provided by the windows, would be 45dB+37dB and 45dB+36dB i.e. 82 and 81dBLa max.

From the most recent survey, and confirmed by other recent acoustic surveys in the High Street and surround, the typical outside maximum levels on St Georges Road and the High Street are within the range 73 to 81dBLa: I found there is little or no difference between the dBLa max level exceeded 10 - 15 times per night and the dBL1 level and thus the typical dBLa max. level criteria remains valid.

4.3 Equivalent Continuous Sound Levels dBLaeq

Laeq is a notional steady level which would, over a given time period, deliver the same sound energy as the actual time-varying sound over the same time period. It allows fluctuating and intermittent sound levels to be described in terms of a single figure level.

Weston Homes state they installed or are to install windows to achieve a reduction of 37dBRw on St. George's Road and 36dBRw on the High Street elevations. They have provided technical data sheets to support this.

Daytime noise levels within the building were found to be satisfactory in meeting the 40dBLaeq 16hr standard (see Table B this memo). It is night time levels that are of concern due to the location and proximity to entertainment venues in the High Street and their associated activities. To account for the hours where sporadic noise occurs and in accordance with Note 7 to Table 4 of BS 8233:14, an adjustment by calculation of the leq level from 8 to 5 hours results in a max level of 37dB to which a 5 dB may be added. The night time maximum leq not to be exceeded within the bedrooms is thus 42dBLaeq 5 hours, but I consider the 37dBLaeq to be appropriate as the internal bedroom standard against which to assess the window attenuation.

5. Sound Insulation properties Rw + ctr

Ctr is a decibel reduction which takes into account the lower frequencies from low to medium speed road traffic and entertainment noise. The ctr element is not appropriate for this variation application since the Lmax criteria excludes traffic and people noise, (unsteady sound sources) and a number of the noisy night time low frequency entertainment venues in the vicinity have closed. It is not an additional parameter I would now be requesting when considering window attenuation properties at this location. However it is noted that if it were to be applied, the ctr addition for the proposed (-5dB) still results in internal levels within bedrooms below the 50dBLa maximum (Ref. +5dB allowance Note 7).

6. Ventilation

6.1. Condition 12 related to ventilation requirements across the whole building in order to satisfy the 45 - 50dB maximum night time internal level within bedrooms.

6.2. Whole building (or dwelling) ventilation is defined within Part F1 of the building regulations approved document as follows;
..is nominally continuous ventilation of rooms or spaces at a relatively low rate to dilute and remove pollutants and water vapour not removed by operation of extract ventilation, purge ventilation of infiltration, as well as supplying outdoor air into the building.
Section 4.16 of the document explains …. it is common to use intermittent extract fans for extract ventilation, trickle ventilators for whole building (house) ventilation and windows for purge ventilation.

6.3. Background ventilation for residential buildings is provided via one of the systems detailed in the Approved Document F. One system is commonly provided by trickle vents. Windows containing trickle vents should be designed to ensure that internal noise levels due to external incident noises are met during this background ventilation requirement.

6.4. Ventilators on windows facing the High Street and St George's Road are of the acoustic type offering 40dB attenuation. These enable background air ventilation of the bedroom to occur with the windows shut whilst ensuring that the night dBLa max standard is complied with.

6.5. An alternative acoustically treated means of background ventilation was required to the bedrooms facing London Road and Norwich House and my previous comments have stated; *To allow background ventilation of bedrooms at night when windows are closed, existing standard open vents on the Norwich House and London Road facing elevations to be replaced with acoustic trickle vents* ***or other*** *permanent through the wall acoustic ventilation product, that both offer at least a 30dBRw sound reduction.*

6.6. Those bedrooms facing Norwich House and London Road have been offered or provided with the same or better by the developers although this would need to be confirmed in writing by the applicants. As such this now represents compliance with the requirements of Condition 12 in regard to the current noise climate.

7. Summary.

If the windows in this application were installed by the developer, the levels within the flats could be expected to be as follows;

Table B. Performance of windows in meeting internal standards.

| Elevation | Installed or proposed to be. | dB Reduction offered by window | Typical laeq levels outside | Typical ext. Lmax | Resultant Internal Levels Laeq | Internal Laeq of 37 met? | Internal dBLmax 45-50 met? |
|---|---|---|---|---|---|---|---|
| St George's Road | 10:14:4 | -37 | 58 | 81 | 21 | Yes | Yes at 44 |
| High Street | 10:12:6.4 | -36 | 62 | 80 | 26 | Yes | Yes at 44 |

8. Conclusions.

8.1. With respect to the current noise environment, if the windows and acoustic vents were to be installed in accordance with this application for variation the standards of internal noise levels within bed and living rooms as determined within BS 8233:14 would be achieved.

8.2. Subject to confirmation in writing and submission of evidence by the applicants that trickle vents have been offered or replaced on bedroom windows to the London Road and Norwich House elevations, Condition 12 has been complied with.

9. Recommendations.

9.1. That in order to correct the anomalies in window specifications that have been installed the application to vary be permitted subject to conditions to link the proposed work with the submitted plan ref. WH128/10/P/25.01.

9.2. A verification report to be submitted to and agreed in writing by the LPA confirming by way of submitted evidence that the work required under Condition 9.1 above has been completed.

9.3. The application to vary condition 12 of 04/1050 is acceptable, subject to confirmation by way of evidence in writing that the stated trickle ventilator replacement work on London Road and Norwich House elevations has been completed.

10 September 2018
James Robinson, Chartered Environmental Health Officer.