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|---|---|---|---|
| Project: | The Raby Hunt Inn, Summerhouse | Subject: | Conversion of garage area to storage |
| To: | Russell Close, The Raby Hunt Inn | From: | Ross Latue |

# Noise impact statement – Conversion of garage area to storage

## 1.      Introduction

1.1     A development has been proposed at the Raby Hunt Inn, Summerhouse. Part of the development includes the conversion of an existing masonry garage to the rear of the site to an external store, understood to house refrigeration plant for use in the operation of the restaurant.

1.2     It is understood that the garage shares a separating masonry partition with an adjoining residential property and such an assessment of the potential noise impact from use of the store has been requested via Planning Condition to mitigate and minimise the likelihood of future adverse impacts upon the occupants of the neighbouring property.

1.3     Planning Condition 4 of Application Ref: 18/00577/CU is reproduced below:

> 4      Before the converted garage is brought into use, details shall be submitted to, approved in writing by the Local Planning Authority and thereafter implemented,   regarding noise attenuation within the garage rear and front internal walls.
>
> REASON - To protect the residential amenity of occupiers of neighbouring properties.

*Figure 1: Planning condition 4*

1.4     Apex Acoustics has been instructed to provide a statement on the potential impact from proposed mechanical plant within the storage area to address the requirements of the Planning Condition.

## 2. Assessment

2.1 It is understood that the area will be used for storage and such only a number of refrigeration units are proposed. Details of the proposed plant are presented in Table 1.

| Proposed plant | Make / Model | No. of units | Manufacturers noise data |
|---|---|---|---|
| Upright refrigeration unit | Polar CD 614 | 2 | 40 dB(A)* |

**Table 1: Summary of proposed mechanical plant within garage area**

*no further information has been provided by the manufacturer on these figures; assumed to be sound pressure level at 1m in the free field.*

2.2 No spectral information or information on the character of the sound has been provided by the manufacturer, however noise from this type of unit is typically broadband and continuous in nature.

2.3 The cumulative noise emission from numerous units can be calculated using the following equation:

$$L_{pn} = L_p + 10 \, \text{Log} \, (n)$$

Where $L_p$ is the sound pressure level of a singular unit, *n* is the number of units proposed and $L_{pn}$ is the sound pressure level of *n* no. units.

2.4 Hence for the purpose of the following calculations, the reverberant sound pressure level within the garage from two refrigeration units is expected to be no higher than 43 dB(A).

2.5 The garage is understood to be a masonry construction. Based on the sound insulation performance of 215mm solid brick, it can be assumed that a solid masonry partition will achieve a minimum level difference of 48 dB $D_{nt,w}$.

2.6 To ensure the sound insulation performance of the masonry partition is not compromised by small apertures in the masonry / mortar, we would suggest applying a parge coat to one side of the partition.

2.7 Based on the above source noise data for the refrigeration units and minimum level difference provided by a masonry partition, the noise impact within the adjacent property is expected to be inaudible and such is unlikely to cause any adverse impact.

## 3. Discussion

3.1 The potential impact from use of the space as a store with the 2 refrigeration units proposed is calculated to be negligible and unlikely to be audible in the adjoining property. No mitigation is required to control noise transmission.

3.2    Should the proposed mechanical plant differ than that defined in this report, the impact should be reassessed for feasibility.

3.3    Based on the information provided in this technical memo, no further mitigation is required to ascertain suitable internal noise levels in the adjacent property and such the requirements of the planning condition are calculated to be met with the existing condition of the garage.