

**Reference:** Saltbox Unit 3

**Project No:** 1818341

**Date:** 1st July 2021

## Technical Note

Re: Unit 3, Saltbox, Bognor Regis. Assessment of sound emissions from plant noise to the local neighbourhood and discharge of Planning Condition 20.

### Introduction

- 1 This Technical Note has been prepared by Sharps Redmore.
- 2 The purpose of this assessment is to gauge whether the sound levels for external plant, the details of which are shown as typical outdoor units for the type of applications for Unit 3, would satisfy the recommendations in Planning Condition 20.

### C20. Noise

*Noise Reports shall be submitted with the applications for reserved matters for Unit 1 and Unit 3 and the recommendations for approval in writing by the Local Planning Authority and the recommendations shall be implemented prior to first occupation of Unit 1 and Unit 3 on the Part 2 Development*

The Planning noise advice document for Sussex (March 2021) contains the following guidance:

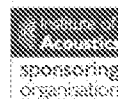
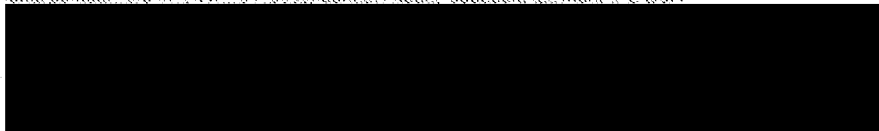
### 3.2 Guidelines and Criteria

*3.2.1. The rating level of the industrial or commercial sound source should, where practicable, achieve a level no greater than the representative background sound, when measured in accordance with BS 4142:2014 + A1: 2019.*

- 3 A noise survey has been previously undertaken by Sharps Redmore to accompany the planning application. This determined existing background and ambient levels at the boundary to the nearest noise sensitive receptors to the north of the site on Shripney Road at approximately 150m, over approximately a 24-hour period. The typical ambient and background levels as measured at nearest noise sensitive receptors to be as follows in table 1:

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**Table 1: - Survey Summary (representative of nearest residential property at Shripney Road)**

| Measurement Period     | Measured Free-Field Noise Level, dB |                          |                          |                       |
|------------------------|-------------------------------------|--------------------------|--------------------------|-----------------------|
|                        | $L_{Aeq,T}$                         | $L_{A10,15m}$<br>(range) | $L_{A90,15m}$<br>(range) | $L_{Amax}$<br>(range) |
| Daytime                | 55 dB                               | 53-60 dB                 | 35-50 dB<br>Typical 48dB | 64-79 dB              |
| Night Time (2300-0700) | 51 dB                               | 40-61 dB                 | 25-45 dB Typical 34dB    | 60-80 dB              |

- 4 Attended monitoring was undertaken over representative periods for day and night time over the 13th-14th July 2017. Monitoring position was were chosen to be representative of the proposal site and the nearest residential properties on Shripney Road, approximately 150m to the north of the proposal site. The noise climate at was dominated by road traffic noise.

#### **The Development**

- 5 Technical data from the Daikin website for the RZQG -L (8)Y1 external units has been used to inform this assessment and would be typical for the type of development. To provide robust assessment the noisiest model operating in worst-case heat mode has been selected from the range of units. Model RZQG140L7Y1B.
- 6 The distance from the plant elevation to the facades of the residential receptors is around 150 metres.

#### **The Plant**

- 7 In summary there are four items of plant sited externally, serving the individual units within Unit 3.
- 8 The plant being assessed as typical for this use is the Daikin RZQG140L7Y1B as mentioned above. The extract from the manufacturer's literature indicates sound source values at quoted as follows for worst case operation mode:

Daikin RZQG140L7Y1B

Sound Power Level  $L_w = 69\text{dBA}$  ( $x4=75\text{dBA}$ )

- 9 Calculations to the nearest noise sensitive receptor have been made using the sound power levels and using the equation  $\text{SPL} = \text{SWL} - 20\log(r) - 8$ . (Where  $r=150$ ) and SPL provided to give the cumulative SPL for the operation.

- 10 Table 2 sets out the procedure for predicting the plant sound level at 150m from the proposed plant, assuming all plant is running simultaneously. To provide robust assessment we have considered the Sussex criteria of not exceeding existing background levels measured at the survey as shown below in table 2.

**Table 2**

**Cumulative Proposed Plant. Sound level prediction at nearest residential.**

|                                                           | Predicted noise level |                   |
|-----------------------------------------------------------|-----------------------|-------------------|
|                                                           | Day (0700-2300)       | Night (2300-0700) |
| Daikin RZQG140L7Y1B x4 SWL                                | 75 dBA                | 75 dBA            |
| Distance attenuation (r=150). $SPL = SWL - 20\log(r) - 8$ | 53                    | 53                |
| Resultant External                                        | 22 dBA                | 22 dBA            |
| Typical Background $L_{A90}$                              | 48 dBA                | 34 dBA            |
| Difference                                                | -26                   | -12               |
| Sussex Noise Policy Requirement                           | 48 dBA                | 34 dBA            |
| Comply with Requirement and Condition                     | YES                   | YES               |

- 11 The expectation is that the totality of all plant operating at their highest sound output quoted, and simultaneously, would be 22 dB  $L_{Aeq,T,façade}$  at the nearest residential property.

**Assessment**

- 12 The planning condition 20 refers to a scheme to control noise being submitted and the Sussex Noise Policy recommends that any plant should not exceed existing background levels.
- 13 Given typical background levels, the operations during day and night time are significantly below background levels and in the context of the lowest daytime and night-time background sound levels of 35 dB  $L_{A90T}$  and 25 dB  $L_{A90T}$  respectively, the estimated level falls between 13 dB and 2 dB below respectively. Given existing ambient levels, distance involved, magnitude of difference and absolute levels it is not considered necessary to apply any feature corrections.
- 14 It is concluded that sound levels would be acceptable for the typical external plant associated with the proposal, satisfying the requirements of the condition, enabling condition 20 to be discharged.

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