2.2.2 Noise Assessment

Consultation Response

Project	Horton Road, Poyle		
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Response to Environmental Health Comments – Noise

Introduction

This technical note has been prepared by BWB Consulting Ltd to respond to comments received from Environmental Health at Slough Borough Council following submission of the planning application at Horton Road, Poyle (P/09811/002).

This response relates specifically to the comments made to the Principal Planner on 7th June 2023. The headings and points are reproduced below, shown in blue, and BWB's response is shown in grey.

This technical note should also be read in conjunction with the Noise Impact Assessment Report (232244 XXX-BWB-ZZ-ZZ-RP-YA-0001_NIA_S1_P04, dated 19th April 2023, submitted in support of the planning application for the scheme.

Assessment Methodology

An environmental noise assessment has been prepared by BWB Consulting Limited in support of this application. The assessment is informed by a noise survey period Friday 24th March to Tuesday 28th March 2023, with the measurement location 30m north of Horton Road within the site boundary, supported by noise modelling using CADNA A to determine the noise impact at the receptors at Poyle Park (static caravan park).

The survey period determined that the dominant noise sources on site were road traffic noise originating from Horton Road and aircraft noise associated with Heathrow Airport. Fixed plant is known to exist on site however this was not audible during the survey period.

Large amounts of the monitoring data have been omitted due to unrepresentative noise sources being present at the time of the survey (geotechnical drilling on 27th and 28th March), and unsuitable meteorological conditions on 24th and 25th March until 19:00, 25th March night and 26th March day time. The resultant monitoring periods after data omission are as follows:

- Saturday daytime 1900 – 2300;
- Sunday night-time 2300 - 0700;
- Monday daytime 1700 – 2300; and
- Monday night-time 2300 - 0700.

It is questionable whether a representative noise sample has been obtained, as there is no monitoring representative of a typical working day (07:00-17:00). **It is recommended that this**

data is compared with other monitoring surveys undertaken in the area to verify the validity of the data. Nevertheless, the remainder of the assessment has been reviewed under the assumption that this data is acceptable.

The use of the evening periods during the daytime i.e. 1700 – 2300 represents a worst case scenario as this is the quietest part of the day, when noise levels are likely to be lower. Notwithstanding this, the measured noise levels used within the assessment have been compared to those measured as part of the noise assessment (Report Ref PJB8998/20036/V1.0 dated 22/10/2020) to support the previous application on the site (Ref P/09811/001).

It is worth noting at this stage that the previous baseline noise survey was undertaken in September 2020 when the country was experiencing the effects of COVID-19. The comparison is shown below in **Table 1**.

Table 1: Comparison of measured noise levels between 2020 and 2023 for the daytime period

Day of the Week	2020 baseline noise survey dB $L_{A90,16h}$	2023 baseline noise survey dB $L_{A90,T}$	Difference dB $L_{A90,T}$
Friday	61	59	-2
Saturday	53	55	+2
Sunday	50	48	-2
Monday	59	58	-1

The results show that the L_{A90} values used within the noise assessment are within 3dB of the previously measured L_{A90} values, and are therefore considered to be representative of the noise levels at the existing receptors.

Similarly to the air quality assessment, the noise assessment considers B8 use only, to provide worst case HGV movements and deliveries. The noise modelling assumptions provided within Section 4.3 ensure a worst case approach has been followed in terms of screening and noise reflection. This is accepted.

Proposed Receptor Impact

The report suggests that the dominant aircraft noise results in the southern façade being exposed to 64dB L_{Aeq16h}, which can be mitigated through the implementation of mechanical ventilation and glazing with a sound reduction performance of 30dB R_w. This was very briefly discussed in the report and has very little supporting evidence. **It is expected that further details of the glazing and ventilation options are provided as condition, with evidence that the internal noise levels are acceptable for office use after implementation.**

It is agreed that this can be secured through a suitably worded planning condition.

Existing Receptor Impact

On site operations of the proposed development include HGV deliveries and forklift truck movements, associated with dock levelling activities and entry level door operations. These activities have been incorporated into a noise model using library noise data provided by BWB Consulting. The Transport data suggests that there will be 10 two-way movements in a worst-case hour during the daytime and 6 two-way movements in a worst case hour during the night,

which equates to 1.5 per 15 minute period. To provide a robust assessment, two movements in a 15 minute night time period has been considered, with two level access doors utilised during this period. It is also assumed that all operations including forklift truck movement, dock leveller and entry level door noise, occur during each delivery.

The noise levels at the residential facades of receptors in Poyle Park have been assessed in reference to BS4142. To account for impulsivity, a 3dB penalty has been applied to represent those receptors who have direct line of sight with the service yard.

During weekdays, noise levels at the nearest noise sensitive receptor is 11dB and 7dB below the background noise level during the day and night, respectively. During the weekend, noise levels are 8dB below background during the day but are 7dB above background during the night, **which is deemed an adverse impact**.

Noise from L_{Amax} levels resulting from HGV reversing noise and forklift movements has been considered, comparing to a 60dB L_{Amax} level at the façade which equates to a 45dB L_{Amax} internal level assuming a 15dB reduction through a partially opened window. The results indicate that both operational activities are below this criterion. It is questionable whether the 15dB reduction is applicable here since a static caravan is unlikely that to have the sound noise reduction capabilities as a built property, however if applying a more conservative 10dB reduction due to a partially opened window instead of 15dB still results in compliance (HGV noise and forklift noise at 44dB and 35dB L_{Amax}, respectively). This is therefore accepted.

Plant noise has been considered however plant details are not available at this stage of the development, therefore a plant noise limit which does not exceed background noise levels has been suggested (weekdays: 58dB daytime and 55dB night time; weekend: 55dB daytime and 41dB night time). **This will be secured via condition.**

It is agreed that this can be secured through a suitably worded planning condition.

Mitigation

To address the 7dB above background exceedance, an acoustic barrier has been proposed which is located adjacent to the plant compound. Implementation of this barrier reduces the night time noise impact by 2dB, resulting in mitigated noise levels 5dB above background noise levels. This would typically be deemed unacceptable in regards to noise impact. It is strongly recommended that the applicant seeks additional mitigation options to reduce the noise level further. Options may include:

- Providing additional acoustic barriers alongside the cycle store area to reduce noise transmission from the service yard.
- Restricting use of the level access doors to one per delivery during the night.
- Undertaking continuous noise monitoring during operation to proactively control noise.

Although it is explained in the report that the noise level is likely to be acceptable due to context and the existing ambient noise level being above the background noise level, the applicant should demonstrate that they have taken every practicable measure to reduce their noise levels as far as possible. As such, it is strongly recommended that the above mitigation measures are explored to determine whether the noise level can be reduced further. In the past, the LPA has accepted a 2dB above background noise level therefore the applicant should endeavour to reduce noise levels to meet this criteria as a minimum.

To address the above during the night-time on a weekend, the benefit afforded by the acoustic barrier and the specific on-site operations have been explored further to reduce the noise impact at NSRs as much as practicable.

The original noise assessment assumes that there could be two fork-lift trucks operating at the same time at both the level access doors. This number has been reduced to one for the night-time weekend period as it is considered unlikely that both level access bays would be in use at the same time. In addition, the 1.8m high acoustic barrier has been extended to wrap around the cycle area, as shown in **Figure 1** below.

Figure 1: Proposed acoustic barrier location

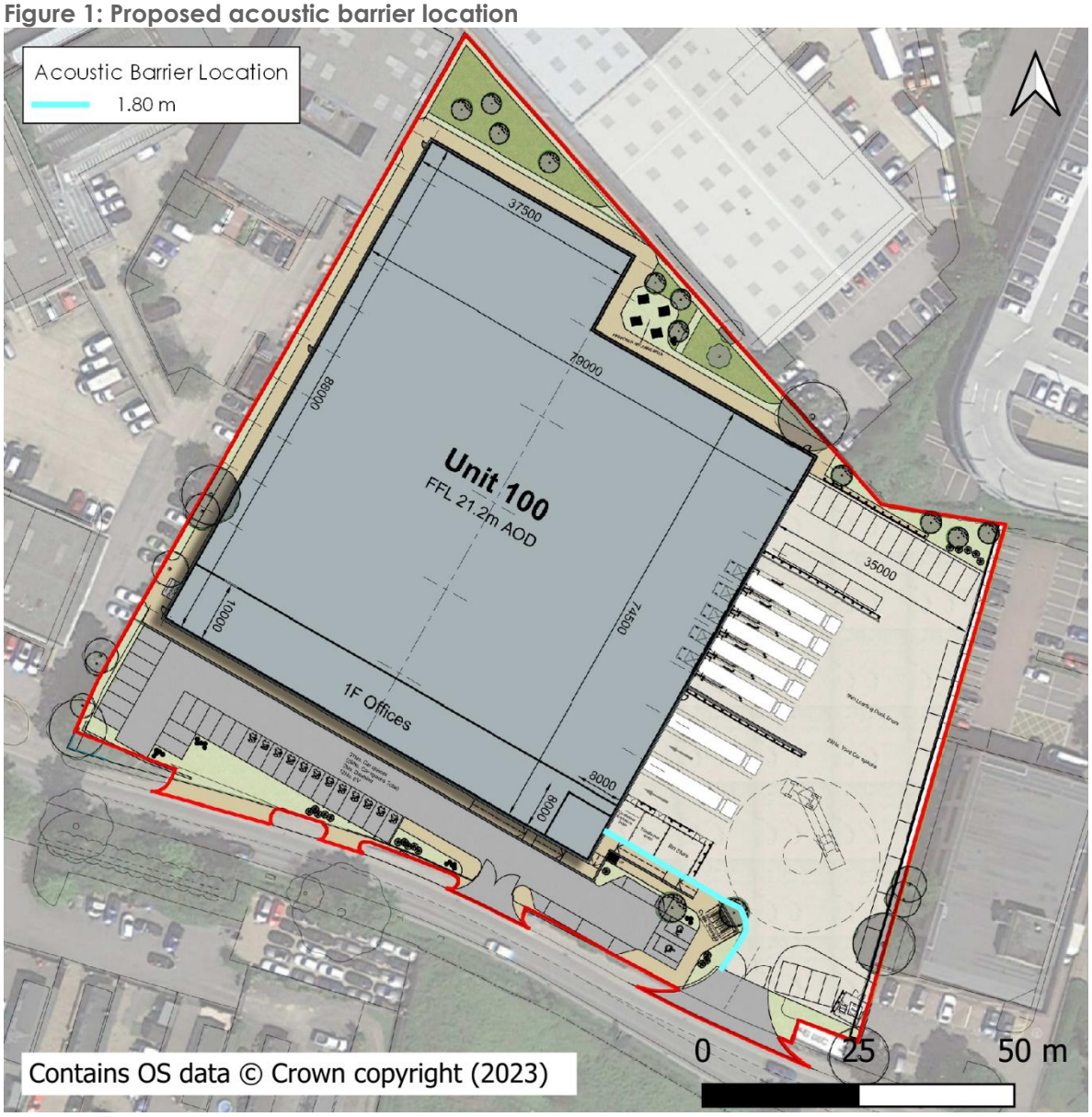
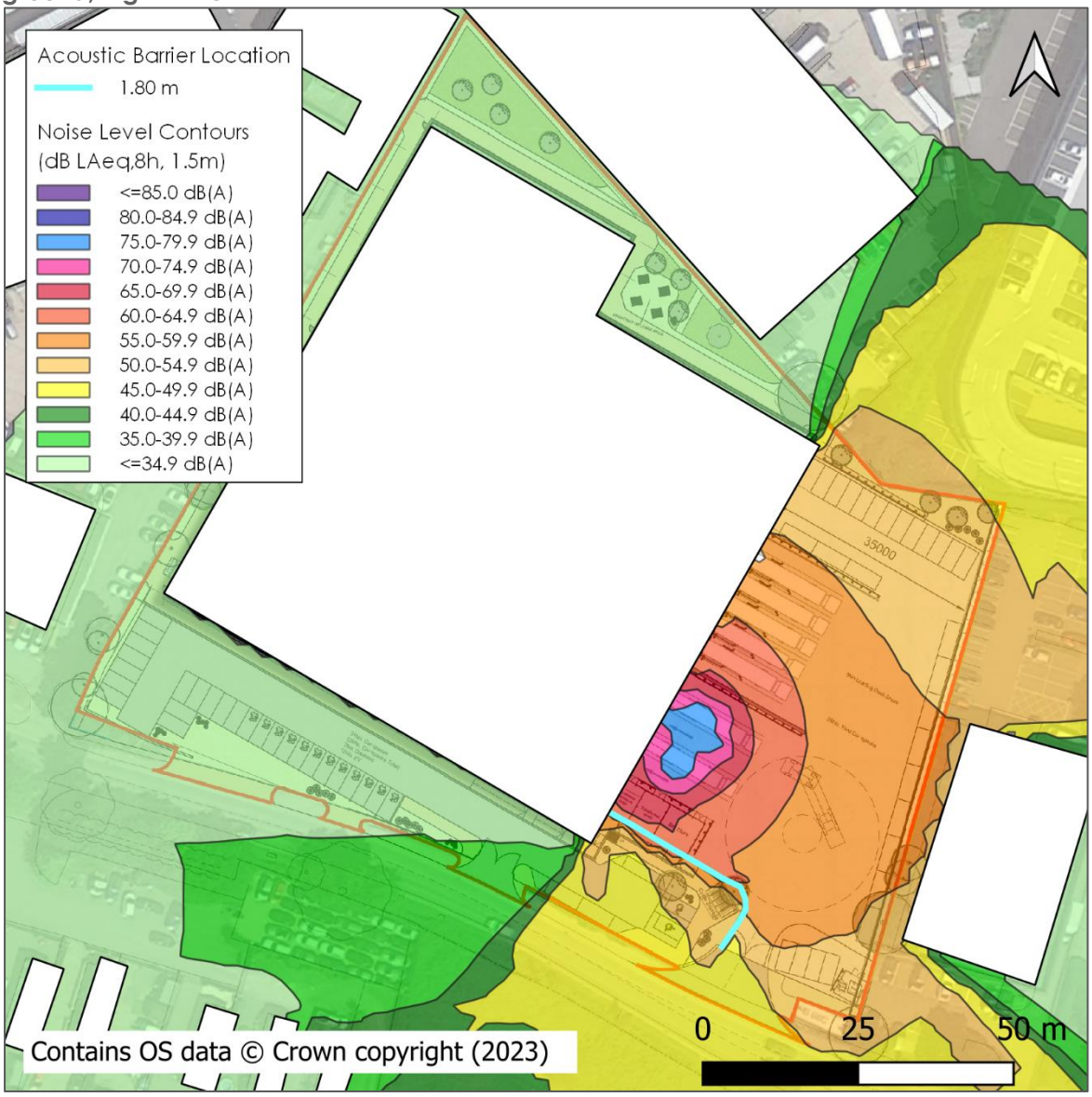


Figure 2 shows the resultant night-time noise contour at 1.5m in height with the extended acoustic barrier in place.

Figure 2: Noise contour plot with additional mitigation measures, dB $L_{Aeq,15m}$, 1.5m above ground, night-time



The BS 4142 assessment has been updated with the proposed additional mitigation in place, to demonstrate the resultant noise levels at the ESRs. In line with the original assessment, a 3dB penalty has been applied to account for impulsivity that is likely to be just perceptible at the nearest NSRs which have a direct line of sight to the service yard.

Table 2: Delivery noise assessment, night-time weekend

Description	Weekend Sound Level dB	Relevant BS 4142 Clause
Specific sound level ($L_{Aeq,T}$)	40	7.3.5
Acoustic feature correction	+3	9.2
Rating level ($L_{Ar,T}$)	43	9.2

Description	Weekend Sound Level dB	Relevant BS 4142 Clause
Background sound level ($L_{A90,T}$)	41	8
Excess over background	+2	-
BS 4142 impact	**Low Impact**	-

During the night-time periods on a weekend, the results indicate that the rating levels ($L_{A,r}$) from the proposed operations are predicted to be 2dB above the background (L_{A90}) noise levels at existing NSRs, therefore demonstrating a low impact. This also meets the minimum criteria requested by Slough Borough Council.

It is considered that two fork-lift trucks could operated during the daytime on a weekday and weekend, and night-time on a weekend without causing an adverse impact at NSRs.

Summary

In summary, the following clarifications and recommendations are requested:

- Due to the large amount of omitted data, it is recommended that survey data recorded in this assessment is compared with other monitoring surveys undertaken in the area to verify the validity of the data.
- Additional mitigation measures to reduce noise impacts to the Poyle Park receptors.

An analysis of the measured data has been undertaken and the measured data is considered to be representative of the noise levels in the vicinity of the NSRs. Additional mitigation has also been recommended to reduce the noise impact at NSRs during the night-time on a weekend. With the additional mitigation in place, the resultant impact is predicted to be low, in accordance with BS 4142:2014+A:2019[1]. In addition, it has been demonstrated that the minimum criteria as requested by Slough Borough Council can be achieved.

The following conditions are also required:

- It is expected that further details of the glazing and ventilation options to mitigate noise impact to on-site receptors are provided, with evidence that the internal noise levels are acceptable for office use after implementation.
- Implementation of a plant noise limit which does not exceed background noise levels (weekdays: 58dB daytime and 55dB night time; weekend: 55dB daytime and 41dB night time).

It is agreed that this can be secured through a suitably worded planning condition.

[1] BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound