

TECHNICAL NOTE	
Project	Alchemy Way, St Helens
Subject	EHO Comments
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Introduction

This technical note provides additional information to Network Space Holdings Ltd to be read in conjunction with the BS4142:2014+A1:2019 Impact Assessment (R2092-REP01C-JW dated 28 September 2022). It is understood that the Local Planning Authority consultee on noise (Environmental Health) has requested additional information in relation to the following items:

- *The report details that the assessment is using the worst-case assessment with typical noise levels for a vehicle repair workshop, however the planning permission is for use class E(G)(II)(III) or B2 or B8 use for the 2 units. The B2 use can be any general industry and therefore the worst case has not been assessed.*
- *The report details that the movements of HGVs set to 2 per hour per unit and 1 per hour per space – How many units / car park spaces were inputted into the assessment software?*
- *There could be the potential for forklift trucks to be used within the industrial units, the reversing beepers of vehicles have not been assessed.*

These points are addressed below:

With regard to noise impact from the proposed uses, an assumption has to be made about the typical use for the whole development without knowledge of the end user. The noise data for a busy vehicle repair workshop is a reasonable assumption for a typical noisy environment to give an indication of noise impact, particularly considering that the assessment assumes this as a reverberant level throughout several very large units operating simultaneously for a worst case assessment. That said, as the development has been demonstrated to generate very little impact to the receptor on this assumption we have allowed for a significantly more noisy internal environment within the noise model to demonstrate this further.

Red Acoustics recently measured the internal level at an industrial unit specialising in cutting, shaping and polishing granite. Adjacent to the machinery a level of 83.3dBA was measured. Although this process occurred for only a few minutes at a time it has been assumed that the level will be continuous for this assessment purpose. By utilising this data as an internal reverberant level in all units simultaneously this would represent an assessment that is worst case. It would be unreasonable to assume this reverberant level would be continuous in all units in reality.

Table T1 below presents the octave band acoustic measured data for a granite processing cutting and polishing machine used within the noise model for comparison with Table 5.1 of the Impact Assessment Report. This has been inputted into the noise propagation model in place of the internal level used for the initial Impact Assessment Report.

Table T1: Measured Internal Operating Level (Granite Cutting and Polishing)

Item	L _{Aeq,t}	Octave Band Centre Frequency (dB)								
		31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1.0 kHz	2.0 kHz	4.0 kHz	8.0 kHz
Loudest 3min period	83.3	69.6	77.0	78.3	74.7	76.9	81.7	74.5	68.8	66.0

With regard to the use of fork lift trucks internally within the buildings, the level allowed for above is as a reverberant level throughout, much greater than that which would be generated by the use of such machinery indoors. We have also allowed for the use of fork lift trucks externally in response to the query for completeness. Red Acoustics holds on file measured data for a fork lift truck loading and unloading bailed recycling onto a HGV flatbed including the reversing alarm/beeper. This measured data is shown in Table T2 below.

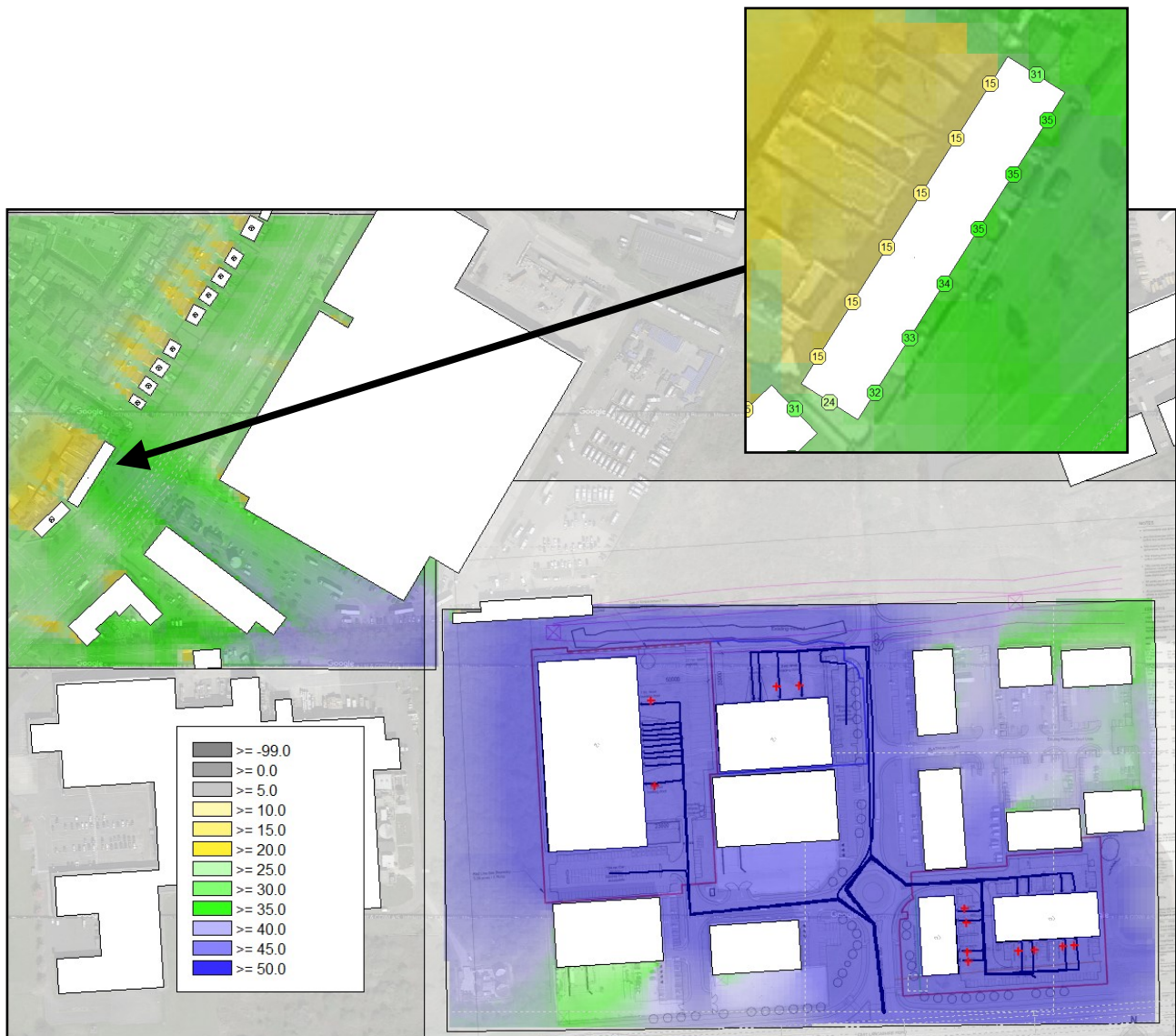
Table T2: Measured FLT Loading and Unloading HGV Including Reversing Beeper

Item	L _{Aeq,t}	Octave Band Centre Frequency (dB)								
		31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1.0 kHz	2.0 kHz	4.0 kHz	8.0 kHz
FLT @ 3m	70.3	72.4	71.8	68.0	66.8	67.2	63.9	64.9	57.4	49.3

Within the updated noise model we have allowed for a fork lift truck loading/unloading a HGV at each of the 8 ground level loading bays across the proposed development. As each of these bays allows for one HGV per hour we have inputted the fork lift truck operating for 30 minutes of the daytime hour in each case and for the full 15 minute night-time period.

With regard to the number of vehicles allowed for within the noise model we would clarify that we have allowed for one HGV entering and leaving for each bay of the development in each hour in the daytime period and either entering or leaving in the night-time 15 minute assessment period. This results in 26 HGVs entering and leaving in each hour to and from their respective bays in the daytime and 26 HGVs either entering or leaving in the night-time. With regard to cars we have allowed for a car entering or leaving each space within the development in each assessment period. This results in 280 cars entering or leaving the site distributed across the parking bays and routes to them.

Based on the above amendments to the noise model which result in a prediction now significantly over that which would be worst case in reality, Figure T1 below shows the resultant noise prediction for comparison with Figure 6.1 of the Impact Assessment Report. Tables T3 & T4 below provide comparative BS4142 assessment tables with regard to Section 7.0 of the Impact Assessment Report.

Figure T1: Predicted Specific Sound Level (dB $L_{Aeq,1hour}$) - NSPs

It can be seen in Figure T1 above that, with a very significant increase in the allowed for noise level within the proposed development, the noise impact/specific sound level prediction increases from 23dBA to 35dBA.

Table T3: BS4142 Assessment Period - Nearest NSPs Daytime

	Period (07:00 - 19:00)
Specific Noise Level (Predicted)	35dB
Corrections	Internal sound level assumed to be the case for the entire 1 hour assessment period in all units simultaneously. Vehicle movements assessed as clarified above with vehicle movements per hour built into the noise propagation model. No further corrections necessary.
Rating Level dB	35dB
Typical Background $L_{A90,t}$	60dB
Difference	-25dB
Conclusion	No/Low Impact

It can be seen that the noise impact is predicted to be low as the rating level is 25dB below the typical daytime background sound level. It should be noted that it would be unreasonable to assume internal noise levels this high within all parts of all units and that this has been presented to show more than worst case low impact.

Table T4: BS4142 Assessment Period - Nearest NSP Evening/Night-time

	Period (19:00 - 07:00)
Specific Noise Level (Predicted)	35dB
Corrections	Internal sound level assumed to be the case for the entire 15min assessment period in all units simultaneously. Vehicle movements assessed as clarified above with vehicle movements per 15 minutes built into the noise propagation model. No further corrections necessary.
Rating Level dB	35dB
Typical Background $L_{A90,t}$	43dB
Difference	-8dB
Conclusion	Low Impact

It can be seen that the noise impact is predicted to be low as the rating level is 8dB below the typical daytime background sound level. It should be noted that it would be unreasonable to assume internal noise levels this high within all parts of all units and that this has been presented to show more than worst case low impact.

We trust that the additional information provided in this technical note further demonstrates that the proposed development is of low impact in terms of noise. The initial assessment of typical levels which demonstrated -37dBA and -20dBA sound levels relative to the existing daytime and night-time background sound levels respectively. This leaves significant room for greater impact and to demonstrate this further we have allowed for unrealistic levels of noise impact within the updated model prepared for this technical note and can demonstrate that impact remains low.