



Project

Land at Grange Moor
Planning Report

Prepared for

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PI	13/01/2023	First Issue	Joe Bear BEng MIOA

Summary

PC Specialist Ltd have asked SRL to provide support for their planning application to relocate from their existing site to a larger site approximately 150m to the south. SRL have measured noise levels in the area, set limits for noise from plant and fixed equipment and assessed the potential impact of vehicle movements and mobile operations on the site.

Proposed limits for plant and fixed equipment are set out in Table 2 of this report.

A simple assessment of noise from vehicle movements on the site shows noise from daytime deliveries, and any associated activity, will be well below the existing daytime ambient noise levels at the receptors. If deliveries are required at night, our calculations show that these may be audible at the nearby houses in the short term but at substantially lower levels than transient noise from existing traffic on local roads which are much closer to these receptors.

Contents

Summary.....	3
Contents.....	4
1.0 Introduction.....	5
2.0 Planning Policy & Noise Guidance.....	7
3.0 Noise Survey	9
4.0 Noise Limit for Fixed Plant and Services.....	12
5.0 Noise from Vehicle Movements and Mobile Operations On Site.....	13
Appendix A - Survey Details	14
Appendix B – Survey Data.....	15

1.0 Introduction

PC Specialist is a custom build PC workshop located in Grange Moor, Wakefield. The company currently operates out of Unit 12 of Jubilee Business Park, Grange Moor, WF4 4TD. The company are applying for permission to construct a new workshop and office building with associated HGV delivery and car parking facilities on land approximately 150m south of the existing site, just across the A642 link road between Wakefield and Huddersfield. The location of the existing and proposed site are shown in Figure 1.

Figure 1 – Existing (red) and proposed (blue) site locations



The new site is currently a vehicle scrapyards and open green space. The proposed new PC Specialist building will occupy the north section of the new site, in the areas occupied by the existing scrapyards. The green spaces to the south of the new site will be retained and landscaped. Figure 2 shows the proposed site layout for the finished PC Specialist building.

Figure 2 - Proposed new site layout



SRL Technical Services Ltd have assessed the potential noise impact of the new building at nearby noise sensitive receptors to support the planning application for this development. As PC Specialist currently operates out of a facility 150m to the north of the proposed site, the relocation is not expected to result in any significant changes in traffic noise levels from the surrounding roads and this has therefore not been assessed in this report.

2.0 Planning Policy & Noise Guidance

2.1 National Policy

The NPPF does not provide any specific numerical criteria relating to noise impacting on (or generated by) new developments. However, Section 11 “Conserving and enhancing the natural environment” does state the following:

“109. The planning system should contribute to and enhance the natural and local environment by: preventing both new and existing development from... being adversely affected by unacceptable levels of [noise] pollution.”

2.2 Local Policy

Policy LP52 from the Kirklees Local Management Plan states:

“Proposals which have the potential to increase pollution from noise, vibration, light, dust, odour, shadow flicker, chemicals and other forms of pollution or to increase pollution to soil or where environmentally sensitive development would be subject to significant levels of pollution, must be accompanied by evidence to show that the impacts have been evaluated and measures have been incorporated to prevent or reduce the pollution, so as to ensure it does not reduce the quality of life and well-being of people to an unacceptable level or have unacceptable impacts on the environment.

Such developments which cannot incorporate suitable and sustainable mitigation measures which reduce pollution levels to an acceptable level to protect the quality of life and well-being of people or protect the environment will not be permitted.

Where possible, all new development should improve the existing environment.”

2.3 Kirklees Council Comments

SRL contacted Kirklees Council Planning Authority by email for comment on our assessment methodology prior to undertaking our noise survey but did not receive a response.

2.4 BS4142:2014+A1:2019

I have set the noise limits for plant and operational noise at this site in accordance with the methodology set out in BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’. This document provides a method to assess whether “sound of an industrial and/or commercial nature” is likely to have an adverse impact at noise sensitive receptors.

BS 4142's assessment methodology considers how loud the noise is and its character (e.g. whether it contains hisses, bangs, or clicks). The assessment is then based on how loud (and how annoying) the source noise is compared with the existing background LA90 level at the receptor.

The following corrections can potentially be applied for the acoustic character:

- Tonality – a correction of up to +6 dB can be applied depending on how tonal the specific noise is.
- Impulsivity – a correction of up to +9 dB can be applied if the noise is impulsive.
- Intermittency – when an item of plant switches on and off, and this is clearly noticeable, a correction of up to +3 dB can be applied.
- Other sound characteristics – where the noise source has another (non-tonal or impulsive) characteristic that is clearly noticeable, a correction of up to +3 dB can be applied.

If the source is both tonal and impulsive it is usual to only apply the correction for the characteristic which is most dominant.

The rating level is determined by applying these corrections to the specific level. The rating level can then be compared with the measured background LA90 level to indicate the expected impact of the commercial or industrial noise source on the local noise environment.

2.5 IEMA guidelines

The Institute of Environmental Management & Assessment guidelines for Environmental Noise Impact Assessment were published in 2014. This document provides useful guidance on the key principles of noise impact assessment for developments of any size. The guidelines define core methods and techniques, used within the noise impact assessment process and are relevant to all types of projects, regardless of size and is particularly useful in assessing the impacts of noise sources not covered by standard assessment methodologies.

3.0 Noise Survey

SRL Technical Services Attended this site on the 13th and 14th of December 2022 to measure typical ambient noise levels at this site. Prior to attending site, the nearest noise sensitive receptors are 1 Barnsley Road, located approximately 300m south-east of the proposed building and 2, 4 & 8 Liley Lane approximately 500m north of the proposed building.

A series of attended measurements were taken during the day and night hours on the 13th and 14th of August 2022, including near the closest noise sensitive receptors to the site. The noise monitoring and receptor positions are shown in Figure 3.

Ambient levels were dominated by noise from regular local traffic passing the site and distant traffic on the surrounding road network. Maximum noise levels were generated by HGV passes in the daytime and by light vehicle passes at night.

Figure 3 - Noise measurement positions, new building (blue) & nearest receptors (red)



Figure 4 - Summary of attended measurements, dB

Measurement Position	Day		Night		
	L _{Aeq} ¹	Lowest L _{A90} ²	L _{Aeq} ¹	Lowest L _{A90} ¹	L _{AFmax} ³
ST1	75	40	59	29	82
ST2	77	56	59	27	85
ST3	71	55	60	30	82
ST4	73	55	61	29	83

¹ Average L_{Aeq} during the measurement periods

² Lowest measured L_{A90} during the measurement periods

³ Highest measured L_{AFmax} during the measurement periods

4.0 Noise Limit for Fixed Plant and Services

The nearest noise sensitive receptor to the proposed site is 1 Barnsley Road, located approximately 300m south-east of the proposed building and 2, 4 & 8 Liley Lane approximately 500m north of the proposed building.

Table 2 – Recommended limits for noise from building plant and fixed equipment on the site

Time Period	Measured background noise level, dB L_{AF90}	Rating noise limit, dB $L_{Ar,Tr}$
Day (07:00-23:00)	40	40
Night (23:00-07:00)	29	35

BS4142:2014 states that “where levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background.” In the absence of any specific thresholds in the current standard, The Association of Noise Consultant guidance for use of BS4142 recommend that the figures of 30 dB L_{AF90} and 35 dB $L_{Ar,T}$ can be used.

As the background levels measured at this site fall below 30dB L_{A90} , I would therefore suggest a plant noise limit of 35dB $L_{Ar,T}$ is likely to be acceptable, given the measured ambient L_{Aeq} levels at the receptor were approximately 60dB at night, plant noise would be completely inaudible if limited to 35dB $L_{Ar,T}$.

The plant noise limits in Table 2 represent the upper limit for cumulative noise from internal and external plant and fixed equipment and at the boundary of the receptor, inclusive of any penalties for tonality, impulsivity or intermittency. If these limits are met, plant would be expected to have a low adverse impact on the receptors. These limits should be confirmed with the local authority prior to selection of plant items.

5.0 Noise from Vehicle Movements and Mobile Operations On Site

We understand production will take place within the building and the only significant mobile equipment operating outside the buildings will be delivery vehicles and associated forklifts serving the four HGV bays at the rear of the site.

We have used typical levels of HGV plant measured at other sites similar to this to estimate the expected noise levels from HGV traffic at this site. The assumed HGV sound power levels we have included in this calculation are detailed in Table 3 below.

Table 3 - Noise model vehicle noise sources

Noise source	Quantity	Sound power Level L _{WA} dB
Fork lift truck	2	85
Lorry idling	1	93
Lorry pulling away	3	92

I have predicted the noise level using a distance correction method based on geometric attenuation as described in ISO 1996-2:2017 – “Acoustics – Description, measurement and assessment of environmental noise - Part 2: Determination of sound pressure levels”. This simplified method does not include any barrier, ground or atmospheric attenuation and is therefore a worst-case estimate of noise levels at the receptors.

The above sound power levels result in a sound pressure level of approximately 39dB L_{Aeq} at the nearest receptor. This is significantly below the existing daytime ambient noise level (L_{Aeq}) and also below the measured daytime background noise level. This is a positive indication that noise from daytime deliveries and associated activity are highly unlikely to have any adverse impact on the residential receptors.

The predicted level from vehicle movements is above the night-time background noise level. This means that the short-term noise from deliveries at night may be audible during quieter periods at night. However the predicted level is well below the overall ambient noise level which is dominated by existing vehicle movement on the roads close to these receptors.

If night -time deliveries are required, noise impact could be mitigated with the adoption of appropriate on-site noise management. This can include broadband reversing alarms, switching of engines when idling, staggering of delivery times and maintaining a good quality driving surface on site. On this basis I would not expect noise from vehicle movement to have an adverse impact at residential receptors.

Appendix A - Survey Details

A1. Location of Survey

Grange Moor, Wakefield

A2. Date & Time of Survey

10:00 13th December 2022 – 10:00 14th December 2022

A3. Personnel Present During Survey

Matt Jones AMIOA

A4. Weather Conditions during Survey

Clear, low winds

A5. Instrumentation

Bruel & Kjaer - Noise Meter AEI

Description	SRL No.	Make	Type	S/N
Sound Level Meter (AEI, Orange)	516	Brüel & Kjaer	2250	2506736
Pre-amp	516	Brüel & Kjaer	ZC0032	14463
Microphone	516	Brüel & Kjaer	4189	2643199
Calibrator	517	Brüel & Kjaer	4231	2528393
Accelerometer in SV207A housing	824	Dytran	3233A	885

A6. Calibration Procedure

Before and after the survey the measurement apparatus was check calibrated to an accuracy of ± 0.3 dB using the type 4231 Sound Level Calibrator. The Calibrator produces a sound pressure level of 93.8 dB re 2×10^{-5} Pa at a frequency of 1 kHz.

Appendix B – Survey Data

Location	Date & Time	L _{Aeq,10min}	L _{A90}	L _{AFmax}
ST1	13/12/2022 11:18	75	50	88
ST2	13/12/2022 11:29	77	59	91
ST3	13/12/2022 11:45	70	56	79
ST4	13/12/2022 11:59	72	55	86
ST1	13/12/2022 12:18	75	49	89
ST2	13/12/2022 12:29	76	56	87
ST3	13/12/2022 12:46	70	55	83
ST4	13/12/2022 12:59	72	56	89
ST1	13/12/2022 13:18	74	40	88
ST2	13/12/2022 13:29	77	60	92
ST3	13/12/2022 13:45	71	56	83
ST4	13/12/2022 13:59	73	55	88
ST1	13/12/2022 02:01	60	30	82
ST2	13/12/2022 02:12	57	27	84
ST3	13/12/2022 02:25	60	32	81
ST4	13/12/2022 02:39	60	29	82
ST1	13/12/2022 02:52	58	29	82
ST2	13/12/2022 03:03	60	31	87
ST3	13/12/2022 03:16	59	30	82
ST4	13/12/2022 03:29	62	35	83

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