Project

Land at Grange Moor
Planning Report

Prepared for

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Version History

Version	Date	Comments	Approved by
P1	13/01/2023	First Issue	Joe Bear BEng MIOA
P2	10/07/2023	Incorporates additional traffic information and substation assessment	Joe Bear BEng MIOA
P3	14/11/2023	Updated hours of operation	Joe Bear BEng MIOA
P4	23/05/2024	Revised number of delivery vehicles per day	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 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 below the BS8233:2014 external amenity area noise levels, and that the BS8233:2014 internal ambient noise levels can still be readily achieved with open windows. Additionally, noise from the proposed development is expected to be significantly lower than the noise levels that were likely generated by the previous occupants of the application site (coachworks and scrapyard).

Evening and night-time deliveries are not required by the applicant, and these will be avoided to minimise adverse impact at receptors. Noise generated by internal manufacturing processes is not expected to be significant and will not be audible at the receptors.

On this basis, we do not consider there to be a reason to turn down this planning application on the basis of noise impact.

Contents

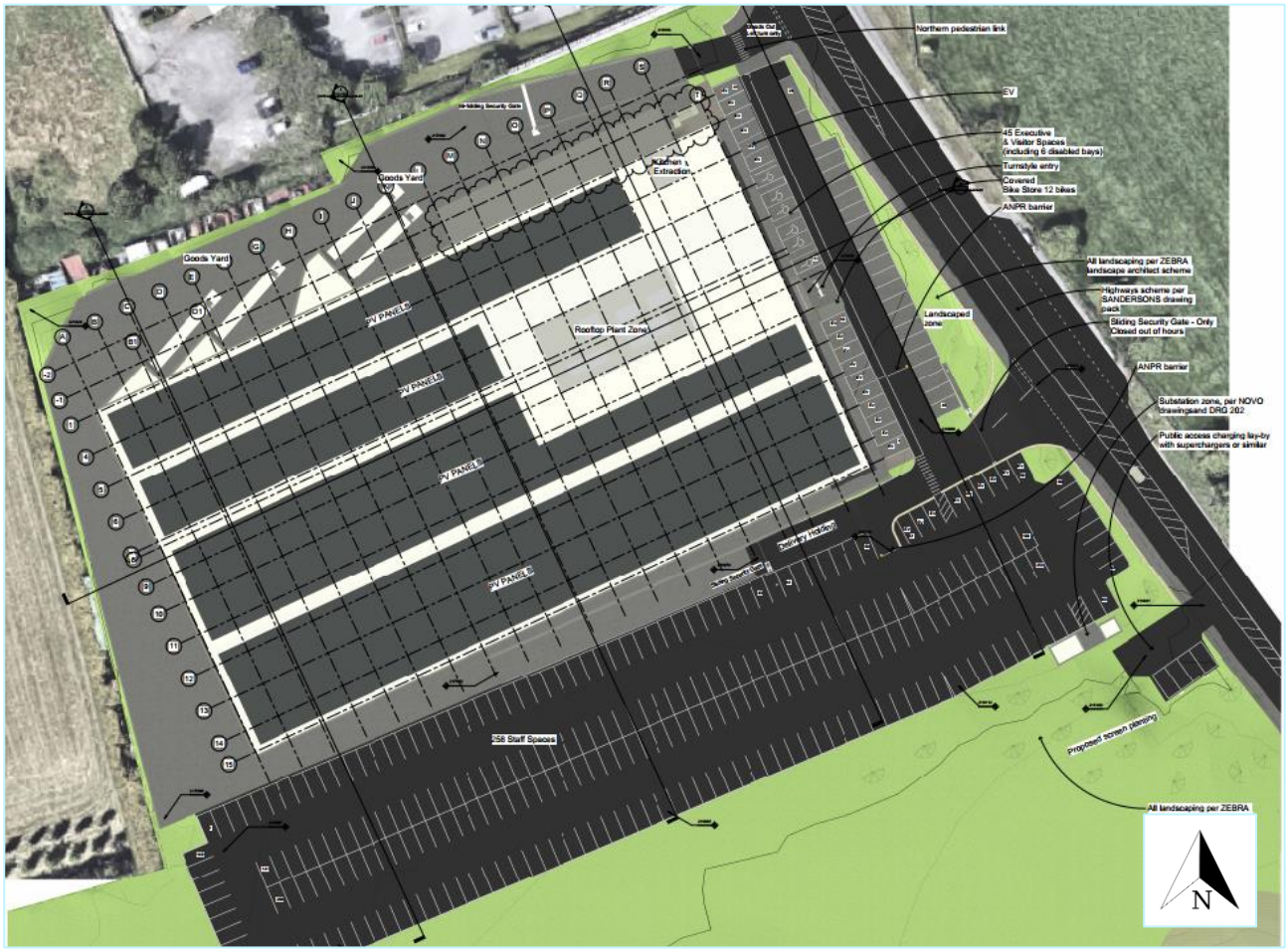
1.0 Introduction

PC Specialist is a custom 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 sites are shown in Figure 1.

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

The new site is currently a vehicle scrapyard 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 scrapyard. 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, the 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.

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. The nearest noise sensitive receptors are the properties on Wakefield Road located immediately north of the proposed new site. There are additional receptors approximately 500m to the north of Liley Lane and 300m to the south on Barnsley Road.

A series of attended measurements were taken during the day and night hours on the 13th and 14th of August 2022. 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)

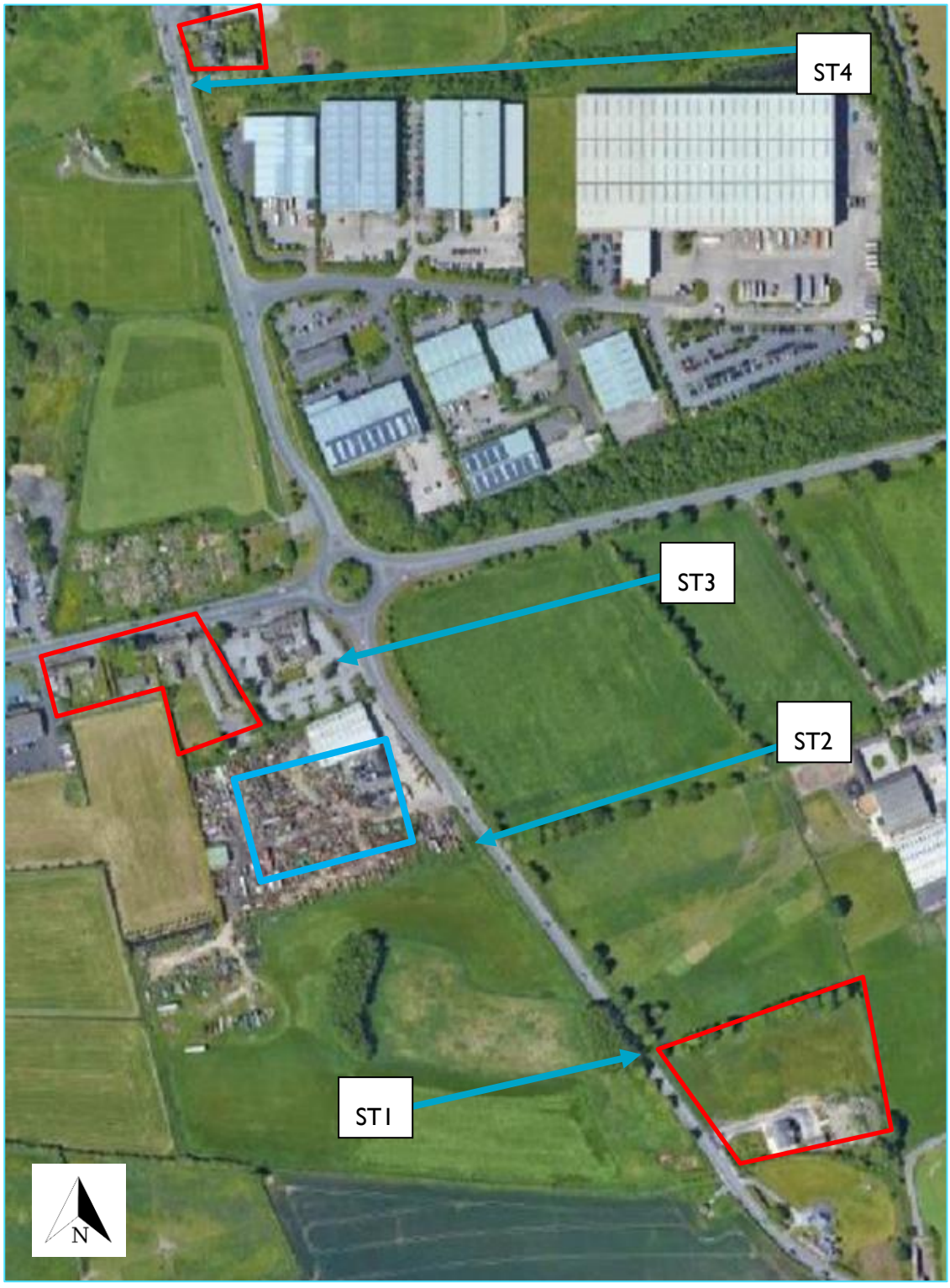


Table 1 - Summary of attended measurements, dB

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 are the residential properties off Wakefield Road directly to the north. These are approximately 35m from the boundary line of the site, and 45m from the façade 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)	27	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_{ArT} can be used.

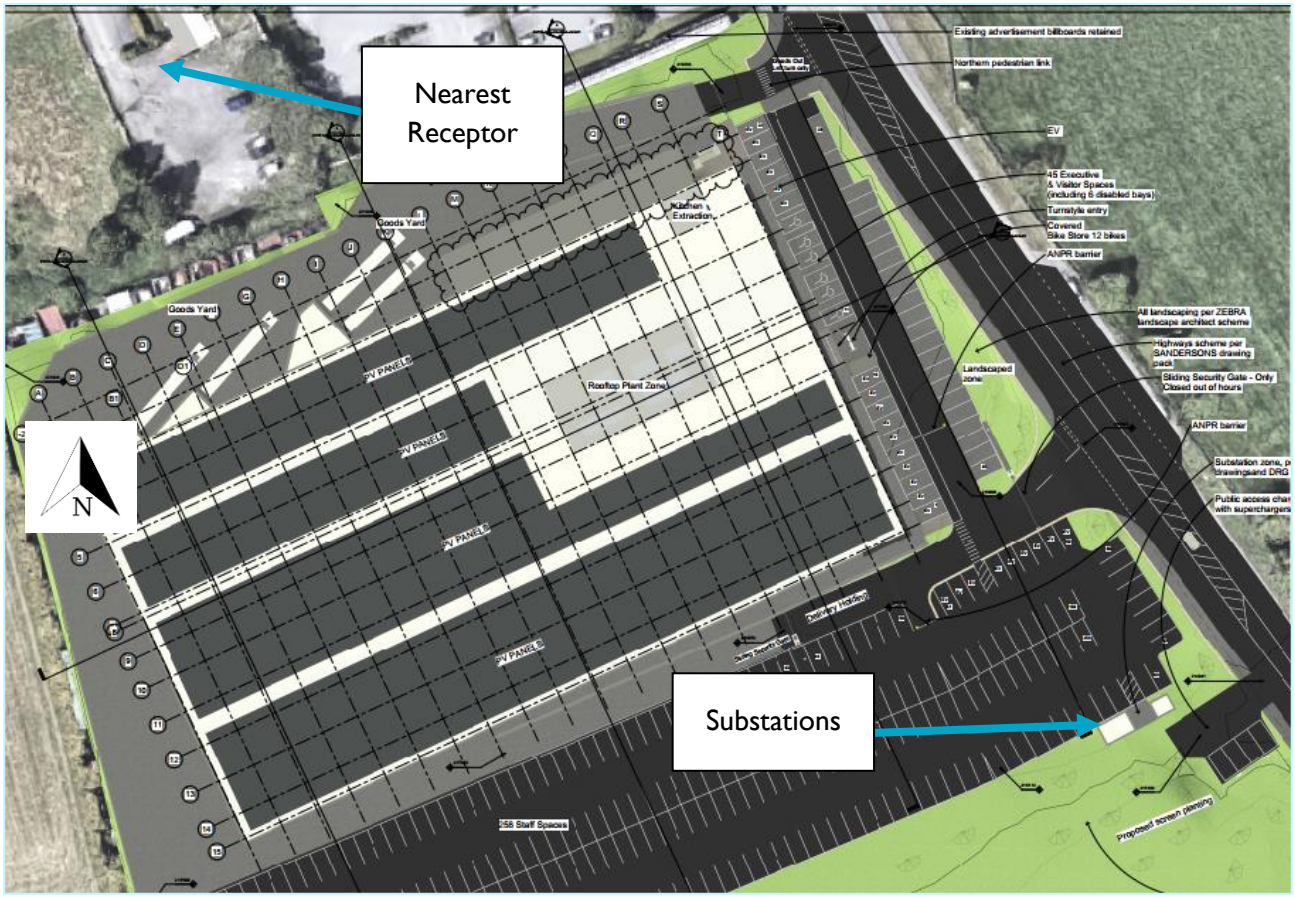
As the background levels at the nearest receptors will be below 30dB L_{AF90}, I would therefore suggest a plant noise limit of 35dB $L_{Ar,T}$ is likely to be acceptable. This will be at least 10dB below the ambient noise level at the nearest noise sensitive receptor based on available measurements, and is therefore likely to be have a low adverse impact.

The plant noise limits in Table 2 represent the upper limit at the boundary of the nearest receptor for cumulative noise from internal and external plant and fixed equipment, 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 Substations

There are two substations proposed to the south of the main building. When complete, these will be approximately 250m from the receptor on Barnsley Road to the south. They will be approximately 150m from the receptors on Wakefield Road to the north and completely screened by the main building. Based on the size and location of the substations, and the distances and screening to the nearest receptors, the noise emissions generated by the substations are expected to be inaudible by the time they reach the receptors, and so a detailed assessment of substation noise is not required.

Figure 4 - Substation location



6.0 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. Loading and unloading will take place via enclosed loading bays, and so forklifts are not expected to operate externally. Furthermore, the nature of this business means that incoming and outgoing deliveries will generally be computer parts that will require careful handling, which will in turn help to reduce noise associated with loading and unloading.

The applicant has identified that they currently have 2-4 HGV visits (i.e. 7.5 tonne – 18 tonne) per day. The applicant has also advised that currently HGV movements are made between 06:00h and 19:15h. As the existing deliveries are made on groupage services, there is not expected to be an increase in the number of vehicle movements, as any increase in business activity would simply utilise additional space on the groupage services.

There is currently a garden fence approximately 2m high at the barrier between the proposed site and the receptors to the north. If the applicant is successful, a new 3m high barrier fence will be installed along this boundary to block line of sight from the properties to the delivery area. This will improve the attenuation to the receptor and reduce the impact of dereliction in the existing fence.

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 exposure levels used in our calculation are detailed in Table 3 below.

Table 3 - Sound exposure level for an 18-tonne HGV pulling away (L_{AE}) @ 10m

Noise Source	Octave Band Sound Exposure Level (L_{AE})							dBA
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	
HGV pulling in or pulling away	94	87	87	81	86	83	73	89

We have used the above sound exposure level to calculate the expected $L_{Aeq,16hour}$ noise level at the nearest receptor. Assuming a total of 8 HGV movements (2 movements per delivery vehicle), this results in a noise level of around 32dB $L_{Aeq,16hour}$ at the receptor (including the effect of the proposed barrier). This is 18dBA below the BS8233:2014 external amenity area noise criteria.

The development site is currently occupied by a coachworks and a scrapyard, but this was not operational at the time of our survey due to the proposed change of occupancy. However, we consider it reasonable to assume that vehicle movements, plant and equipment used on existing site would generate substantially higher noise levels at the receptors than those predicted above. On this basis I would not expect noise from vehicle movements associated with the proposed developed to have an adverse impact at the residential receptors.

If noise from deliveries/collections remains a concern, the noise impact could be mitigated further with the adoption of an appropriate on-site noise management plan. This can include avoiding narrow-band reversing alarms in favour of broadband alarms, switching off engines when stationary, staggering of delivery times and maintaining a good quality driving surface on site.

7.0 Hours Of Operation

The applicant has identified that manufacturing works take place from 06:00h to 19:15h on weekdays and Saturdays, and that all manufacturing processes take place internally. The business also operates a call centre that is also open during manufacturing hours on weekdays and from 09:00h – 17:00h on a Saturday. Furthermore, they have identified that during their peak times, they have been known to continue operations up to 22:00h. The applicant has identified a need to continue these hours following relocation. The proposed switch to 3-day shift work (one shift Monday-Wednesday and another shift Thursday-Saturday) is not expected to alter the expected noise impact from operational noise.

As the main operations of this business involve building laptop and desktop computers, the typical manufacturing processes are not expected to generate significant amount of noise outside the buildings. Therefore, the only significant source of noise that is expected to arise from extended operating hours is the personal vehicle movements of staff members as they leave the premises. The staff parking area will be screened from the nearest receptors by the proposed buildings and noise from individual staff vehicle movements is not expected to be significant at any of the 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 MIOA

A4. Weather Conditions during Survey

Clear, low winds

A5. Instrumentation

Bruel & Kjaer - Noise Meter AE1

Description	SRL No.	Make	Type	S/N
Sound Level Meter (AE1, 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 x 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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