

Unit 6 Barton Park

High Road
Chickenhall Lane
Eastleigh
SO50 6RR

Planning Noise Assessment

On behalf of



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1.0 Introduction

- 1.1. Noise Solutions Ltd (NSL) has been commissioned to undertake a planning-stage noise assessment for the proposed alterations to Units 6 and 10 at Barton Park, Eastleigh.
- 1.2. This report presents the results of an environmental noise survey, the applicable policies and guidance, and outline noise impact assessments of the various proposed activities and operations on the site, to demonstrate that it is suitable for those uses without introducing adverse noise effects on the neighbouring areas.
- 1.3. To assist with the understanding of this report a brief glossary of acoustic terms can be found in **Appendix A**. A more in-depth glossary of acoustic terms can be assessed at the following web address <http://www.acoustic-glossary.co.uk/>.

2.0 Site layout and development proposals

- 2.1. An application has been made for alterations to Unit 6 at Barton Park. Application F/24/97441 refers.
- 2.2. The application is for:

Elevational alterations to Unit 6 including addition of cladding and changes to fenestration, alterations to roof with addition of solar panels, and internal works. Demolition of Unit 10 to form new service yard for Unit 6 to include resurfacing and drainage works, and erection of palisade boundary fencing and access gates.

- 2.3. External works comprise the demolition of Unit 10 and the creation of two service yards. These will have sliding gates on the north and south sides.
- 2.4. Works to the external façades of the existing Unit 6 will include replacement of the existing doors on all four sides.
- 2.5. **Appendix B** contains an aerial photograph showing the site and surrounding area, with an overlay of the proposed development. Site plans are shown in **Appendix C**.

Scope of assessment

- 2.6. An assessment has been made of potential noise from loading and unloading activities within the service yard.

- 2.7. As the changes to the external envelope of the Unit 6 building are essentially cosmetic in nature, with the majority of the building fabric being unchanged, it is considered that no assessment of noise breakout from the building is required.

Nearest noise-sensitive receptors

- 2.8. Noise levels have been predicted at the nearest residential property, being the house at the south end of Barton Road (Receptor R1). This is approximately 15m from the gate on the north side of the new service yard and is indicated on the aerial view in [Appendix B](#).

3.0 Noise policy

Noise Policy Statement for England

- 3.1. The Noise Policy Statement for England (NPSE¹), published in March 2010, sets out the long-term vision of Government noise policy. The Noise Policy aims, as presented in this document, are: *"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:*
- *avoid significant adverse effects on health and quality of life;*
 - *mitigate and minimise adverse effects on health and quality of life; and*
 - *where possible, contribute to the improvement of health and quality of life."*
- 3.2. The NPSE makes reference to the concepts of NOEL (No Observed Effect Level) and LOAEL (Lowest Observed Adverse Effect Level) as used in toxicology but applied to noise impacts. It also introduces the concept of SOAEL (Significant Observed Adverse Effect Level) which is described as the level above which significant adverse effects on health and quality of life occur.
- 3.3. The first aim of the NPSE is to avoid significant adverse effects, taking into account the guiding principles of sustainable development (as referenced in Section 1.8 of the NPSE). The second aim seeks to provide guidance on the situation that exists when the potential noise impact falls between the LOAEL and the SOAEL, in which case: *"...all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development."*
- 3.4. Importantly, the NPSE goes on to state that: "This does not mean that such adverse effects cannot occur."

¹ Noise Policy Statement for England, Defra, March 2010

- 3.5. The NPSE does not provide a noise-based measure to define SOAEL, acknowledging that the SOAEL is likely to vary depending on the noise source, the receptor and the time in question. NPSE advises that: *"Not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available."*
- 3.6. It is therefore likely that other guidance will need to be referenced when applying objective standards for the assessment of noise, particularly in reference to the SOAEL, whilst also taking into account the specific circumstances of a proposed development.

National Planning Policy Framework

- 3.7. A new edition of the NPPF was published in December 2023 and came into effect immediately. The original National Planning Policy Framework (NPPF²) was published in March 2012, with subsequent revisions made periodically - this document replaced the existing Planning Policy Guidance Note 24 (PPG 24) "Planning and Noise." The December 2023 revised edition contains no new directions or guidance with respect to noise. The paragraph references quoted below relate to the December 2023 edition.
- 3.8. Paragraph 180 of the NPPF states that the planning system should contribute to and enhance the natural and local environment by, (amongst others) *"preventing new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, water or noise pollution or land instability."*
- 3.9. The NPPF goes on to state in Paragraph 191:
- "planning policies and decisions should ...*
- a) Mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development, - and avoid noise giving rise to significant adverse impacts on health and quality of life;*
 - b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason ...*
- 3.10. The NPPF document does not refer to any other documents or British Standards regarding noise other than the Noise Policy Statement for England (NPSE³).
- 3.11. Paragraph 2 of the NPPF states that *"planning law requires that applications for planning permission must be determined in accordance with the development plan unless material considerations indicate otherwise."*

² National Planning Policy Framework, DCLG, March 2012

³ Noise Policy Statement for England, DEFRA, March 2010

- 3.12. Paragraph 12 of the NPPF states that *"The presumption in favour of sustainable development does not change the statutory status of the development plan as the starting point for decision making. Where a planning application conflicts with an up-to-date development plan (including any neighbourhood plans that form part of the development plan), permission should not usually be granted. Local planning authorities may take decisions that depart from an up-to-date development plan, but only if material considerations in a particular case indicate that the plan should not be followed"*.
- 3.13. Paragraph 123 states that *"Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously-developed or 'brownfield' land"*.

Planning Practice Guidance – Noise

- 3.14. An updated Planning Practice Guidance (PPG⁴) for noise was published on 22 July 2019 and provides additional guidance and elaboration on the NPPF. It advises that when plan-making and decision-taking, the Local Planning Authority should consider the acoustic environment in relation to:
- Whether or not a significant adverse effect is occurring or likely to occur;
 - Whether or not an adverse effect is occurring or likely to occur; and
 - Whether or not a good standard of amenity can be achieved.
- 3.15. This guidance introduced the concepts of NOAEL (No Observed Adverse Effect Level), and UAEL (Unacceptable Adverse Effect Level). NOAEL differs from NOEL in that it represents a situation where the acoustic character of an area can be slightly affected (but not such that there is a perceived change in the quality of life). UAEL represents a situation where noise is 'very disruptive' and should be 'prevented' (as opposed to SOAEL, which represents a situation where noise is 'disruptive', and should be 'avoided').
- 3.16. As exposure increases above the LOAEL, the noise begins to have an adverse effect and consideration needs to be given to mitigating and minimising those effects, taking account of the economic and social benefits being derived from the activity causing the noise. As the noise exposure increases, it will then at some point cross the SOAEL boundary.

⁴ Planning Practice Guidance – Noise, <https://www.gov.uk/guidance/noise--2>, 22 July 2019

- 3.17. The LOAEL is described in PPG⁵ as the level above which *"noise starts to cause small changes in behaviour and attitude, for example, having to turn up the volume on the television or needing to speak more loudly to be heard"*.
- 3.18. PPG identifies the SOAEL as the level above which *"noise causes a material change in behaviour such as keeping windows closed for most of the time or avoiding certain activities during periods when the noise is present."*
- 3.19. In line with the Explanatory Note of the NPSE, the PPG goes on to reference the LOAEL and SOAEL in relation to noise impact. It also provides examples of outcomes that could be expected for a given perception level of noise, plus actions that may be required to bring about a desired outcome. However, in line with the NPSE, no objective noise levels are provided for LOAEL or SOAEL although the PPG⁶ acknowledges that *"...the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation."*
- 3.20. The relevant guidance in the PPG in relation to the adverse effect levels is summarized in Table 1.

Table 1 PPG Noise effects table

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not Present	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
Present and not Intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and Intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of	Observed Adverse Effect	Mitigate and reduce to a minimum

⁵ Paragraph: 005 Reference ID: 30-005-20190722

⁶ Paragraph: 006 Reference ID: 30-006-20190722

Response	Examples of Outcomes	Increasing Effect Level	Action
	the area such that there is a small actual or perceived change in the quality of life.		
Significant Observed Adverse Effect Level			
Present and Disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very Disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

3.21. The Planning Practice Guidance⁷ states the following in relation to mitigation measures:

"For noise sensitive developments, mitigation measures can include avoiding noisy locations in the first place; designing the development to reduce the impact of noise from adjoining activities or the local environment; incorporating noise barriers; and optimising the sound insulation provided by the building envelope."

3.22. In addition, the Guide notes that it may also be relevant to consider⁸:

"... whether any adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time (and the effect this may have on living conditions). In both cases a suitable alternative means of ventilation is likely to be necessary. Further information on ventilation can be found in the Building Regulations".

⁷ Paragraph: 010 Reference ID: 30-010-20190722

⁸ Paragraph: 006 Reference ID: 30-006-20190722

Local Policy

- 3.23. The NPPF is very clear in that local authorities must update their local plans (one year from publication of the NPPF) and that if the local plan contains policies which do not closely align with the aims of the NPPF, then a decision must be made based on an assessment which shows compliance with the NPPF. Therefore, it is of paramount importance that local authorities have updated local plans which closely align with the aims in the NPPF.

Eastleigh Borough Council

- 3.24. In response to the application for the development, Environmental Health has raised a number of questions regarding noise emissions, though these relate to the types of activities proposed within the yard rather than setting any noise criteria.

4.0 Acoustic Standards and Guidance

BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings.

- 4.1. This Standard provides recommended guideline values for internal noise levels within dwellings which are similar in scope to guideline values contained within the World Health Organisation (WHO) document, Guidelines for Community Noise (1999⁹). These guideline noise levels are shown in Table 2, below:

Table 2 BS 8233:2014 Desirable Internal Ambient Noise Levels for Dwellings

Activity	Location	07:00 to 23:00 hours	23:00 to 07:00 hours
Resting	Living room	35 dB L _{Aeq,16h}	-
Dining	Dining room/area	40 dB L _{Aeq,16h}	-
Sleeping (daytime resting)	Bedroom	35 dB L _{Aeq,16h}	30 dB L _{Aeq,8h}

BS 4142:2014+A1:2019 Methods for Rating and Measuring Industrial and Commercial Sound

- 4.2. British Standard (BS) 4142:2014+A1:2019¹⁰ describes a method for rating and assessing sound of an industrial or commercial nature, which includes:
- Sound from industrial and manufacturing processes;
 - Sound from fixed installations which comprise mechanical and electrical plant and equipment;

⁹ World Health Organisation Guidelines for Community Noise, 1999

¹⁰ For brevity, references to BS 4142 and BS 4142:2019 should be read as BS 4142:2014 + A1:2019

- Sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and
 - Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site.
- 4.3. The industrial or commercial sound is assessed outside a dwelling or premises used for residential purposes, upon which sound is incident.
- 4.4. The procedure contained in BS 4142 is to quantify the "specific sound level", which is the measured or predicted level of sound from the source in question over a one hour period for the daytime and a 15-minute period for the night-time. Daytime is defined in the standard as 07:00 to 23:00 hours, and night-time as 23:00 to 07:00 hours.
- 4.5. The specific sound level is converted to a rating level by adding penalties on a sliding scale to account for either potentially tonal or impulsive elements. The standard sets out objective methods for determining the presence of tones or impulsive elements, but notes that it is acceptable to subjectively determine these effects.
- 4.6. The penalty for tonal elements is between 0dB and 6dB, and the standard notes: "Subjectively, this can be converted to a penalty of 2 dB for a tone which is just perceptible at the noise receptor, 4 dB where it is clearly perceptible, and 6 dB where it is highly perceptible."
- 4.7. The penalty for impulsive elements is between 0dB and 9dB, and the standard notes: "Subjectively, this can be converted to a penalty of 3 dB for impulsivity which is just perceptible at the noise receptor, 6 dB where it is clearly perceptible, and 9 dB where it is highly perceptible."
- 4.8. The background sound level should be established in terms of the LA90 noise index. The standard states that the background sound level should be measured over a period of sufficient length to obtain a representative value. This should not normally be less than 15-minute intervals. The standard states that: "A representative level ought to account for the range of background sound levels and ought not automatically to be assumed to be either the minimum or modal value."
- 4.9. The assessment outcome results from a comparison of the rating level with the background sound level. The standard states:

a) Typically, the greater this difference, the greater the magnitude of the impact.

b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.

c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.

d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact."

The standard goes on to note that: "Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night."

- 4.10. In addition to the margin by which the Rating Level of the specific sound source exceeds the Background Sound Level, the 2014 edition places emphasis upon an appreciation of the context, as follows:

"An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context."

- 4.11. BS 4142 requires uncertainties in the assessment to be considered, and where the uncertainty is likely to affect the outcome of the assessment, steps should be taken to reduce the uncertainty.

5.0 Environmental sound levels

Environmental sound survey

- 5.1. Measurements of the existing background sound levels were undertaken between 10.45 hours (BST) on Friday 25th October and 11.30 hours (GMT) on Monday 28th October 2024.
- 5.2. Measurements were made on the east side of Barton Road (survey position 1) and adjacent to the south west corner of the garden of Receptor R1 (survey position 2), as shown in [Appendix B](#).
- 5.3. Full details of the survey are provided in [Appendix D](#) with a history graph of the unattended measurements.

5.4. The relevant results of the survey have been summarised in Table 3 below.

Table 3 Summary of survey results

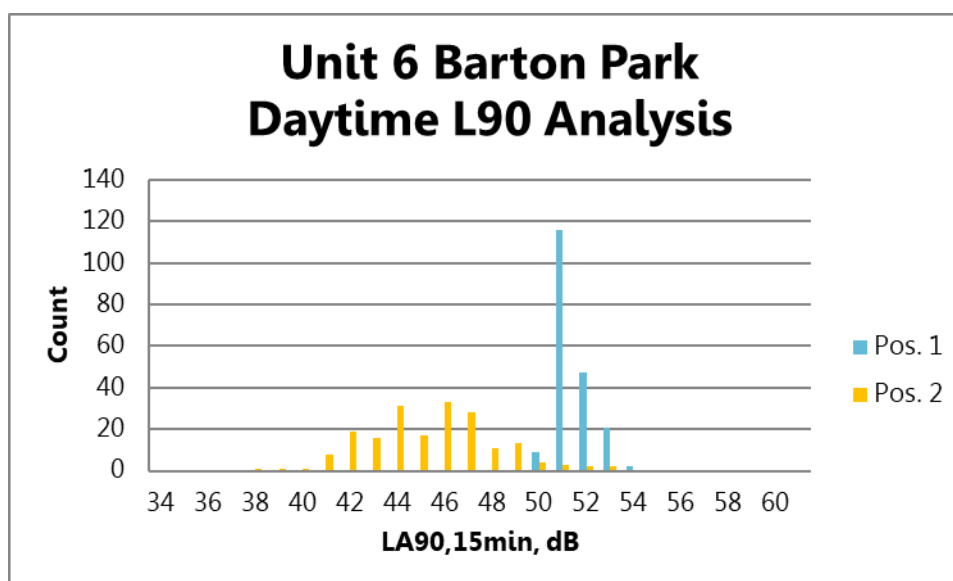
Measurement period	Range of recorded sound pressure levels (dB)			
	L _{Aeq} (15mins)	L _{Amax} (15mins)	L _{A10} (15mins)	L _{A90} (15mins)
Survey Position 1 – east side of Barton Road				
Daytime (07.00 – 23.00 hours)	51-69	57-93	52-66	50-54
Night-time (23.00 – 07.00 hours)	50-63	54-85	51-63	49-60
Survey Position 2 – adjacent to south west corner of R1				
Daytime (07.00 – 23.00 hours)	46-74	55-103	45-78	38-53
Night-time (23.00 – 07.00 hours)	38-65	45-89	40-58	35-49

5.5. The data presented above are the free-field levels recorded from the sound level meters.

Background sound levels

5.6. Background (L_{A90 15min}) sound levels have been analysed to determine representative values, as required by BS 4142:2014+A1:2019. Data has been analysed for the full day and night-time periods.

Figure 1 Histogram of L_{A90} background sound pressure levels, daytime



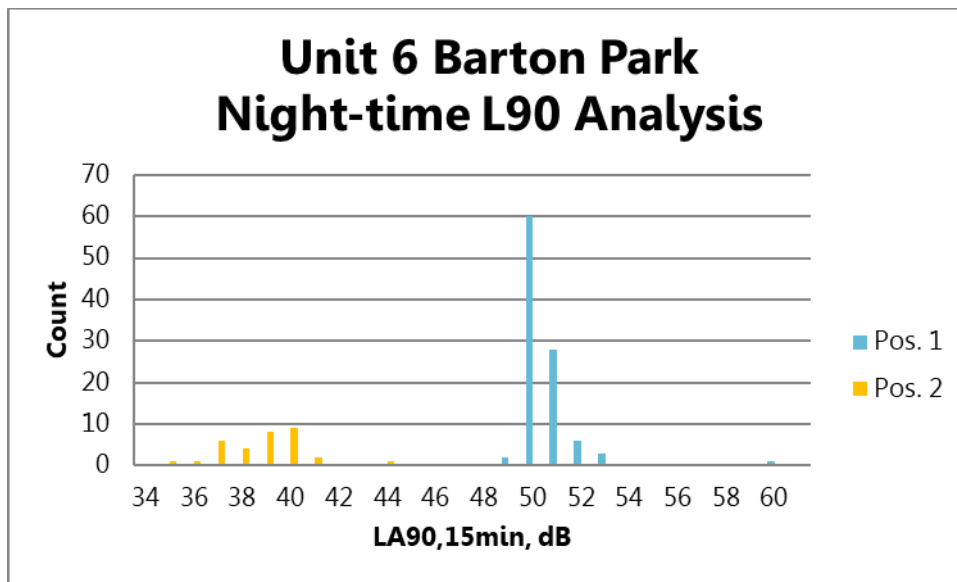
5.7. Additional statistical analysis has been undertaken. As shown in Table 4, the mean, median, and modal values have been calculated:

Table 4 Statistical analysis of $L_{A90,15min}$ levels during the daytime

	dB, L_{A90} daytime period	
	Position 1	Position 2
mean	51	45
modal	51	46
median	51	46

- 5.8. From reviewing the above histogram, the representative daytime background sound levels are considered to be 44dB at Receptor R1.

Figure 2 Histogram of L_{A90} background sound pressure levels, night-time



- 5.9. Additional statistical analysis has been undertaken. As shown in Table 5, the mean, median, and modal values have been calculated:

Table 5 Statistical analysis of $L_{A90,15min}$ levels during the night-time

	dB, L_{A90} night-time period	
	Position 1	Position 2
mean	51	41
modal	50	40
median	50	40

- 5.10. From reviewing the above histogram, the representative night-time background sound levels are considered to be 37dB at Receptor R1.

6.0 Noise assessment of receipts and despatches

Sound pressure levels of activities associated with receipts and despatches

- 6.1. NSL has previously measured the sound pressure levels associated with OGV movements at a number of sites. The measurements included all aspects of the delivery including, but not limited to, the arrival, unloading and the departure of the vehicle. The sound pressure levels were normalised to a distance of 10m from the vehicle and have been converted to Sound Exposure Levels (SEL) for ease of comparison/calculation.
- 6.2. Table 6 details typical source noise levels, used within the assessment, with the data presented in terms of SEL and maximum individual noise event levels (L_{AFmax}).

Table 6 Reference noise data for receipt and despatch activities (at 10m)

Noise Source	SEL, dB(A)	Applicable BS4142:2014 acoustic feature
Arrival	68	+3 intermittency
Reversing & manoeuvring to loading bay	75	+3 intermittency
Materials handling (forklifts)	72	+6 impulsivity
Engine starts and departs	75	+3 intermittency

- 6.3. The information contained in Table 6 was used to model a source noise level based on the number of activity events over the required assessment period using the following equation:

$$L_{Aeq,T} = SEL + 10 \cdot \log\left(\frac{1}{T}\right) + 10 \cdot \log(N) \quad (\text{Equation 1})$$

Where:

SEL is the L_{Aeq} over a one second period, and represents the noise energy from an event (e.g. cage movement) compressed into one second;

T is the reference time period in seconds; and

N is the number of movements in the time period, T.

Predicted noise impact

- 6.4. The noise level at the identified receptor due to vehicle movements and related activities has been predicted. Full calculations are shown in [Appendix E](#) and are summarised in Table 7. The value shown is for a single vehicle visit in one hour, comprising the arrival, loading/unloading of the vehicle and its departure.

Table 7 Predicted noise levels due to each vehicle movement

Receptor	Predicted rating level at nearest noise-sensitive receptor
	Daytime $L_{Ar,1hr}$, dB
R1	41

- 6.5. Table 8 below presents the initial assessment of the likely noise impact due to receipts and despatches, in accordance with the BS 4142:2014 methodology. Rating levels are inclusive of the BS 4142 feature corrections noted in Table 6.

Table 8 Delivery noise impact assessment

Receptor	Number of vehicle visits in hour	Predicted rating level at receptor, $L_{A,r,Tr}$ (dB)	Representative background sound level (dB L_{A90})	Excess of rating over background (dB)	Likely impact (BS 4142:2014 + A1:2019)
R1	1	41	44	-3	No impact
	7	49	44	+5	Low impact

- 6.6. The above assessment indicates that there would be no worse than a low noise impact on the worst-affected existing house, with seven vehicle movements in any hour, even taking a relatively low background sound level for the environment; for the majority of the daytime background sound levels are higher than noted above and the noise impact will therefore be lower.
- 6.7. Assuming up to 125 vehicle movements and sets of loading/unloading activities during a typical day, a sound level of 45dB $L_{Aeq\ 16hr}$ is predicted at Receptor R1. This is below the lowest $L_{Aeq\ 15min}$ value currently experienced. Assuming a 15dBA sound reduction through a partially-opened window, the internal sound level would be 30dB $L_{Aeq\ 16hr}$ and therefore below the guidance value in BS 8233:2014, as shown in Table 2.
- 6.8. Use of the proposed service yard at Unit 6 is therefore not expected to result in an adverse noise impact on the occupants of the houses on Barton Road.

7.0 Discussion of context and uncertainties

- 7.1. It should be noted that the above assessment does not consider the context of the site.
- 7.2. Barton Park is already a busy industrial site with a range of activities taking place. The existing premises to the east of the existing Unit 6 is a bus depot and therefore results in a large number of heavy vehicle movements. Use of the new yard at Unit 6 would therefore be in keeping with the existing noise environment.
- 7.3. Where possible uncertainty in the above assessments has been minimised by taking the following steps:
- The measurement of the background sound levels was taken over a 72-hour extended weekend period including Friday and Monday, when ambient and background sound levels are likely to be lowest;

- The meter and calibrator used have a traceable laboratory calibration and the meter was field calibrated before and after the measurements;
- Uncertainty in the calculated impacts has been reduced by the use of well-established calculation methods.

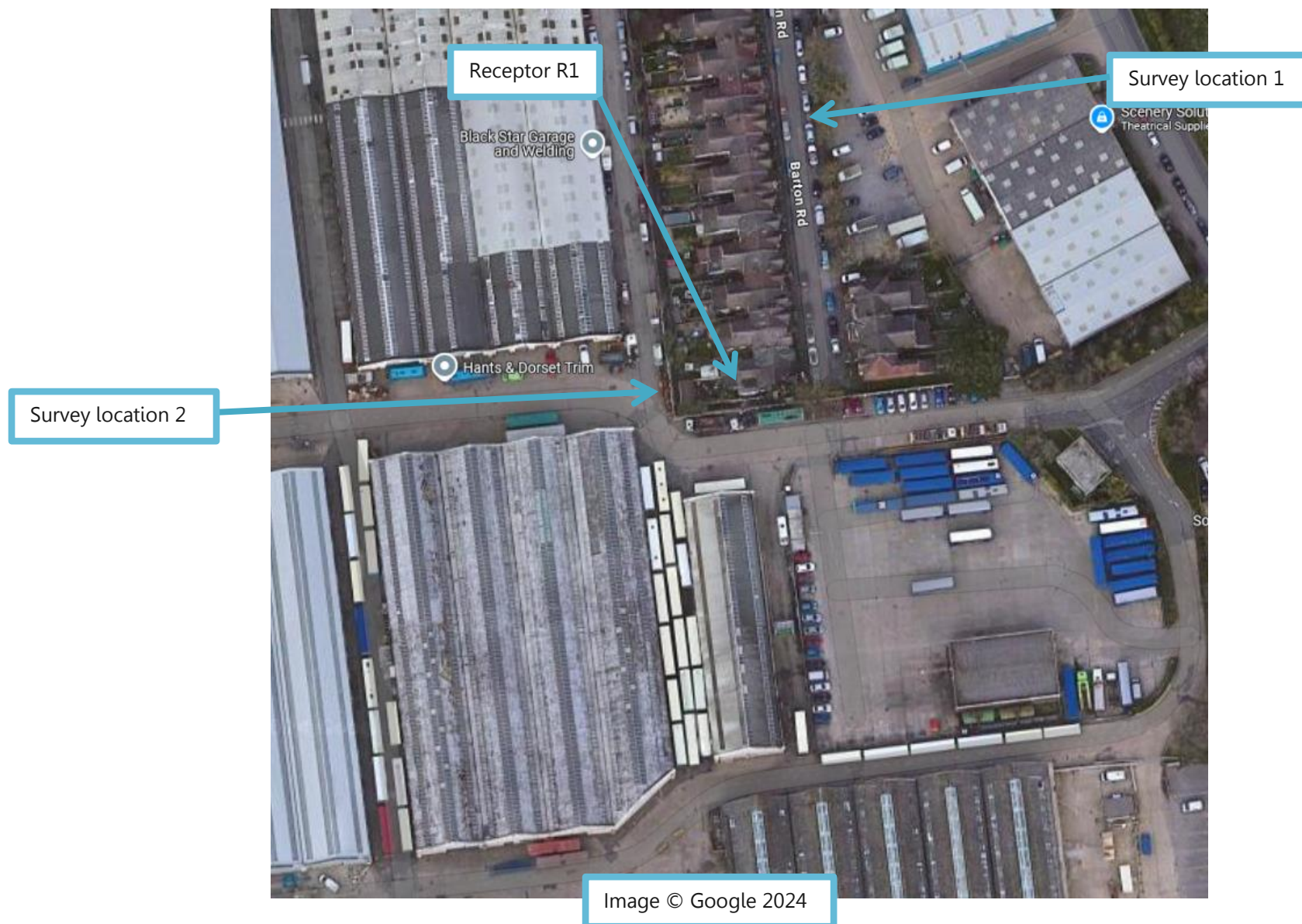
8.0 Summary

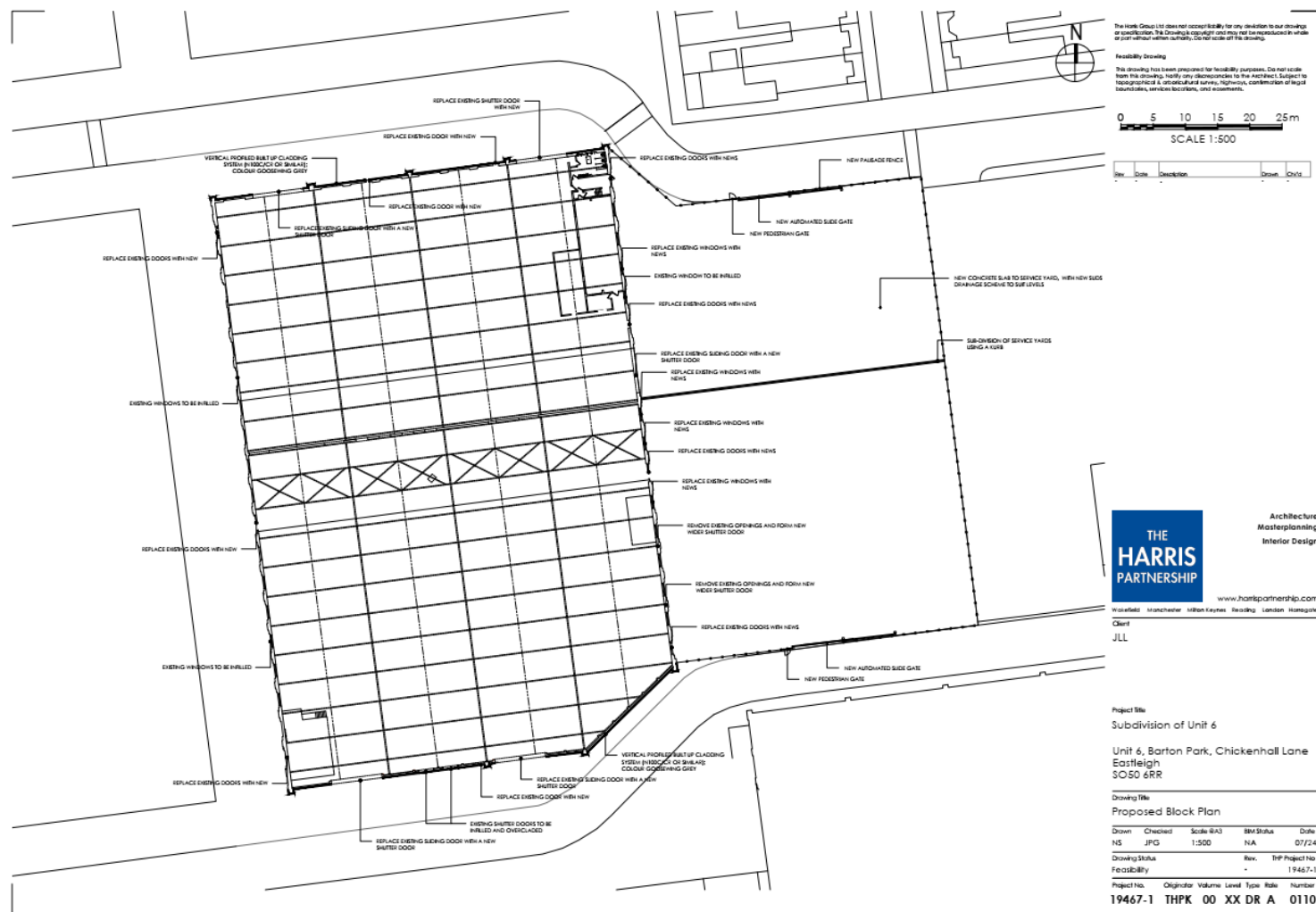
- 8.1. Noise Solutions Ltd (NSL) has been commissioned to undertake a planning-stage noise assessment for the proposed alterations to Units 6 and 10 at Barton Park in Eastleigh.
- 8.2. The results of the assessment were analysed and reviewed in line with the aims and advice contained within the relevant planning policies and recognised Standards and guidance.
- 8.3. Outline assessments have been made of operational noise at the nearest noise-sensitive premises. The assessments show that there are unlikely to be any adverse noise impacts as a result of the proposed uses of the site. Based on the findings of this assessment, noise should not be grounds for refusal of planning permission for the proposed development.

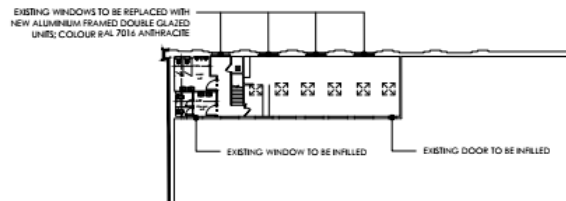
Appendix A Acoustic terminology

Parameter	Description
Ambient Noise Level	The totally encompassing sound in a given situation at a given time, usually composed of a sound from many sources both distant and near ($L_{Aeq,T}$).
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s_1 and s_2 is given by $20 \log_{10} (s_1/s_2)$. The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is $20 \mu\text{Pa}$. The threshold of normal hearing is in the region of 0 dB and 140 dB is the threshold of pain. A change of 1 dB is only perceptible under controlled conditions.
dB(A), L_{Ax}	Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound. The background noise in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A).
Fast Time Weighting	Setting on sound level meter, denoted by a subscript F, that determines the speed at which the instrument responds to changes in the amplitude of any measured signal. The fast time weighting can lead to higher values than the slow time weighting when rapidly changing signals are measured. The average time constant for the fast response setting is 0.125 (1/8) seconds.
Free-field	Sound pressure level measured outside, far away from reflecting surfaces (except the ground), usually taken to mean at least 3.5 metres
Façade	Sound pressure level measured at a distance of 1 metre in front of a large sound reflecting object such as a building façade.
$L_{Aeq,T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level recorded during a noise event with a period T. L_{max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
$L_{10,T}$	A noise level index. The noise level exceeded for 10% of the time over the period T. L_{10} can be considered to be the "average maximum" noise level. Generally used to describe road traffic noise. $L_{A10,18h}$ is the A-weighted arithmetic average of the 18 hourly $L_{A10,1h}$ values from 06:00-24:00.
$L_{90,T}$	A noise level index. The noise level that is exceeded for 90% of the measurement time interval, T. It gives an indication of the lower levels of fluctuating noise. It is often used to describe the background noise level and can be considered to be the "average minimum" noise level and is a term used to describe the level to which non-specific noise falls during quiet spells, when there is lull in passing traffic for example.
SEL	Sound Exposure Level. The constant sound level having the same energy in one second as the original noise event. It is commonly used to predict time-averaged sound levels from a combination of a number of events.

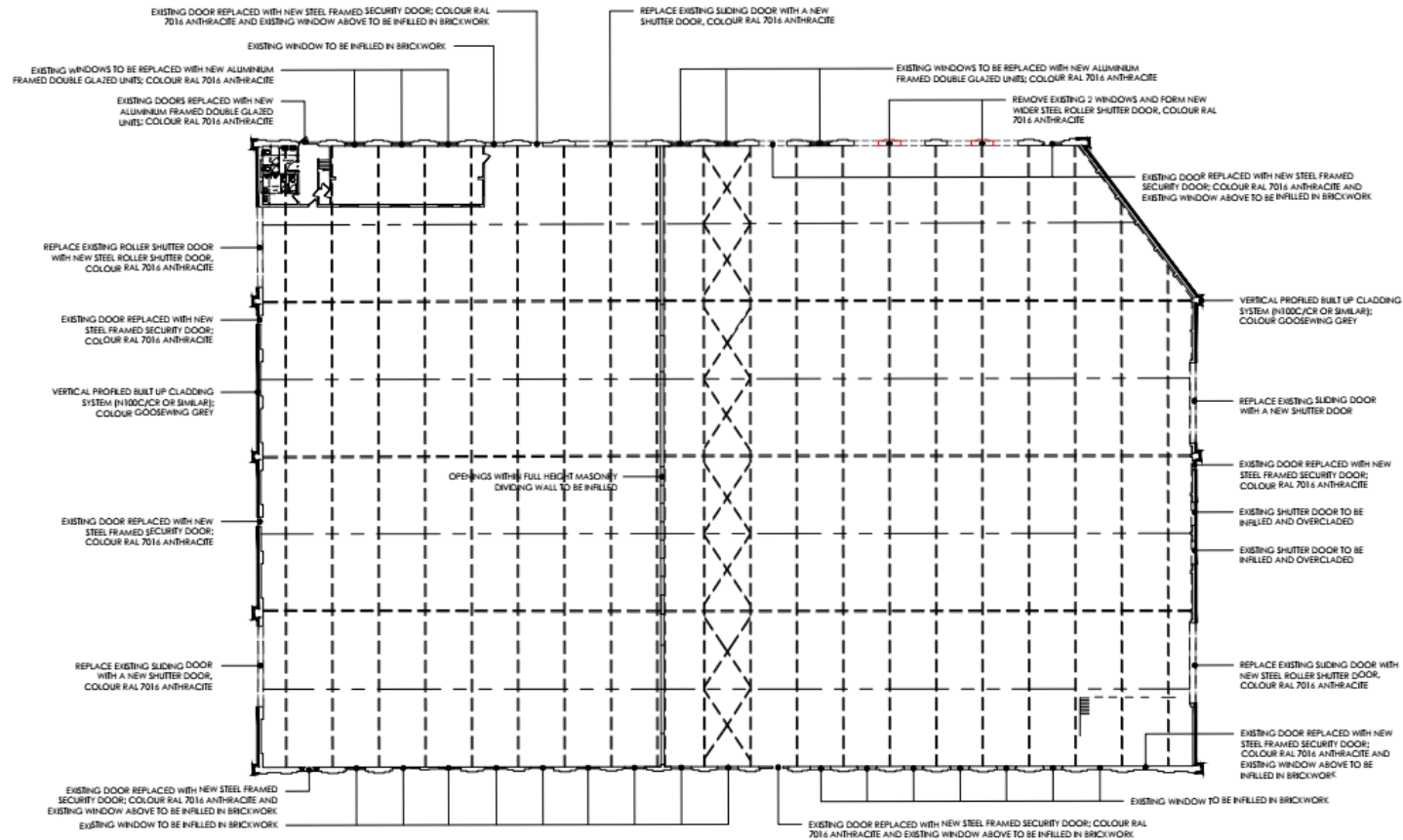
Appendix B Aerial photograph of site and surroundings







02: MEZZANINE FLOOR PLAN
Scale 1:200



01: GROUND FLOOR PLAN
Scale 1:200

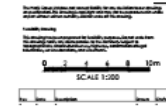


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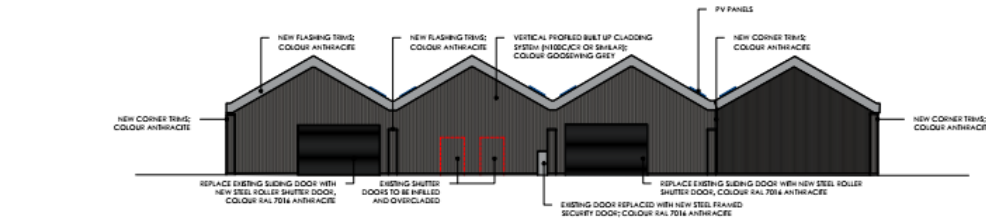
Proposed Ground Floor Plan

Drawn	Checked	Scale	Version	Date
NS	JS	1:200	01	01/04
Author	NS	1:200	01	01/04
Project	NS	1:200	01	01/04
Project	NS	1:200	01	01/04

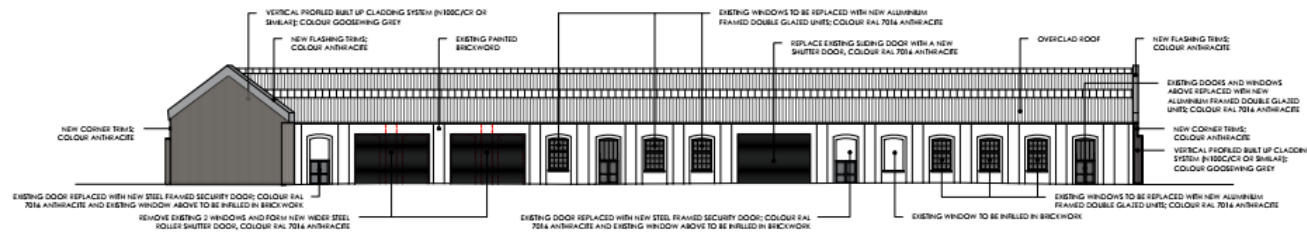
19467-1 THPK 00 XX DR A 0111



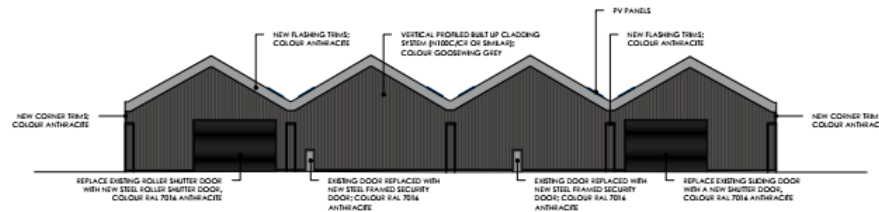
01: SOUTH ELEVATIONS
Scale 1:200



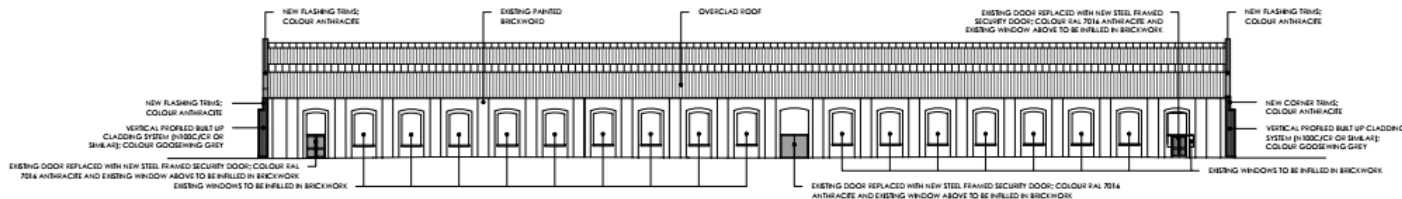
02: EAST ELEVATIONS
Scale 1:200



03: NORTH ELEVATIONS
Scale 1:200



04: WEST ELEVATIONS
Scale 1:200

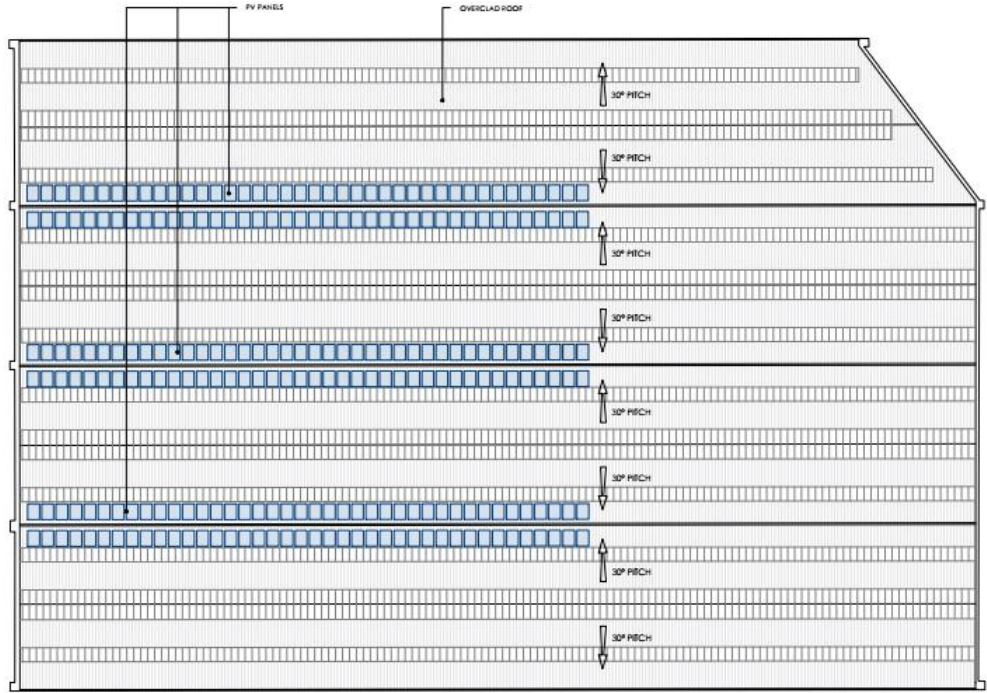


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Proposed Alterations

Drawn	Checked	Date	Rev	Rev
NS	JPS	11/08	001	0101
Author	Rev	Revised	Rev	Revised
1	1	1	1	1

19467-1 THPK 00 XX DR A 0112



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Project No:
Subdivision of Unit 6
Unit 6, Barton Park, Chichester Lane
Eastleigh
SO50 6RR
Drawing No:
Proposed Roof Plan
Scale: 1:200
Date: 01/04/2024
Author: JAL
Checker: JAL
Project No: 19467-1 TRF6 00 XX DB A 0113

Appendix D Environmental sound survey

Details of environmental sound survey

- D.1 Measurements of the existing background sound levels were undertaken between 10.45 hours (BST) on Friday 25th October and 11.30 hours (GMT) on Monday 28th October 2024.
- D.2 The sound level meters were programmed to record the A-weighted L_{eq} , L_{90} , L_{10} and L_{max} noise indices for consecutive 15-minute sample periods for the duration of the survey.

Measurement position

- D.3 Unattended measurements were made on the east side of Barton Road and adjacent to the southwest corner of the garden of the property nearest to the proposed site. The survey locations are shown in [Appendix B](#). The meters were secured to lamp posts with the microphones approximately 3m above the ground.
- D.4 In accordance with BS 7445-2:1991 '*Description and measurement of environmental noise – Part 2: Guide to the acquisition of data pertinent to land use*', the measurements were undertaken under free-field conditions.

Equipment

- D.5 Details of the equipment used during the survey are provided in the table below. The sound level meter was calibrated before and after the survey; no significant change (+/-0.2 dB) in the calibration level was noted.

Description	Model / serial no.	Calibration date	Calibration certificate no.
Survey Position 1 – east side of Barton Road			
Class 1 Sound level meter	Svantek 977D / 99472	07/02/2024	Factory conformation certificate
Condenser microphone	Microtech MK255 / 26247		
Preamplifier	Svantek SV12L / 144643		
Calibrator	Svantek SV33B / 148015	06/03/2024	Factory conformation certificate

Description	Model / serial no.	Calibration date	Calibration certificate no.
Survey Position 2 – adjacent to south west corner of Receptor R1			
Class 1 Sound level meter	Svantek 977D / 99470	14/02/2024	Factory conformation certificate
Condenser microphone	Microtech MK255 / 26252		
Preamplifier	Svantek SV12L / 144633		
Calibrator	Svantek SV33B / 125706	03/09/2024	1509191-2

Weather Conditions

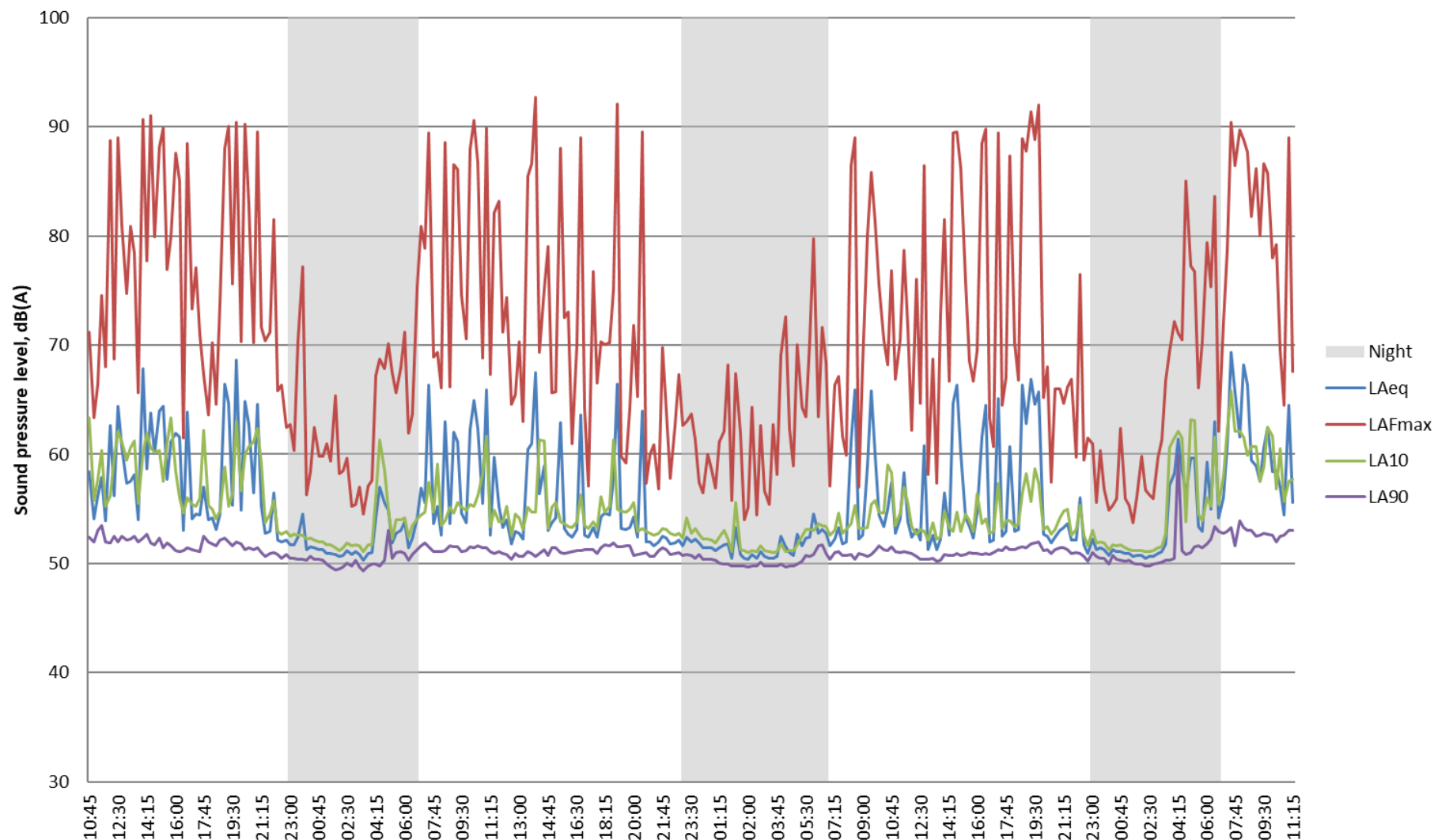
D.6 Weather conditions were determined both at the start and on completion of the survey. It is considered that the meteorological conditions were appropriate for environmental noise measurements. The table below presents the weather conditions recorded on site at the beginning and end of the survey.

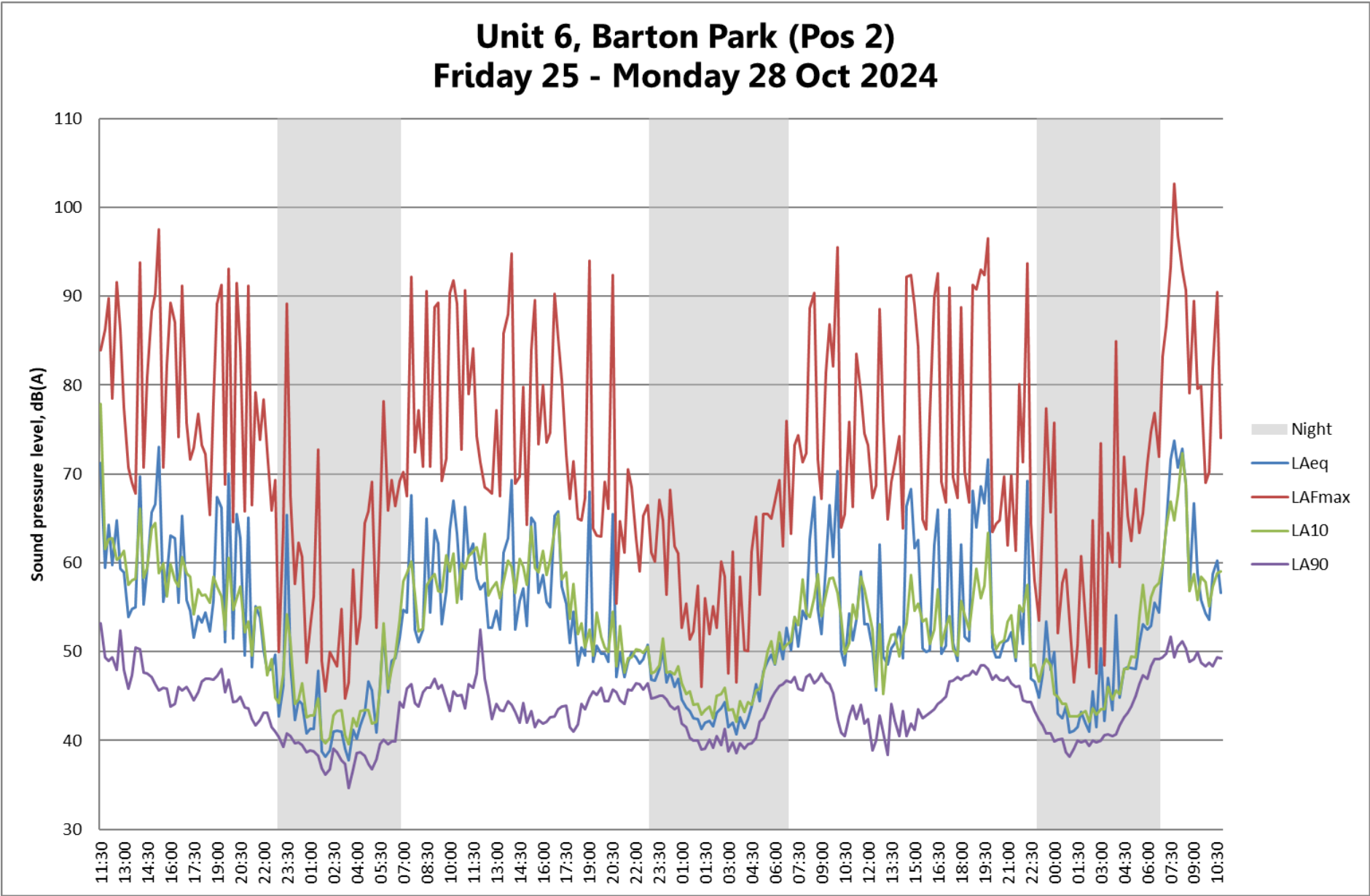
Weather Conditions				
Measurement Location	Date/Time	Description	Start of Survey	End of Survey
As indicated on Appendix B	10.45 25 Oct 2024 to 11.30 28 Oct 2024	Temperature (°C)	16	14
Cloud Cover Symbol Scale in oktas (eighths)  0 Sky completely clear 1 2 3 4 Sky half cloudy 5 6 7 8 Sky completely cloudy (9) Sky obstructed from view		Precipitation:	No	Stopped
		Cloud cover (oktas - see guide)	8	8
		Presence of fog/snow/ice	No	No
		Presence of damp roads/wet ground	Yes	Yes
		Wind Speed (m/s)	<1	<1
		Wind Direction	-	-
		Conditions that may cause temperature inversion (i.e. calm nights with no cloud)	No	No

Results and observations

- D.7 During installation and removal of the meters, the main noise source at survey position 1 was industrial activity within the Barton Park estate. At position 2 the noise climate was due to a combination of local and distant road traffic, services plant and construction work.
- D.8 The results of the unattended survey are presented in time history graphs overleaf.

Unit 6, Barton Park (Pos 1) Friday 25 - Monday 28 Oct 2024





Receptor R1 – Daytime – per vehicle visit

Activity	Measured noise levels	Correction for no. of occurrences		Distance correction		Resultant SEL at receptor (dB)	BS4142 feature correction (dB)	SEL + Feature correction (dB)
	SEL @ 10m	No. of occurrences	Correction (dB)	Distance (m)	Correction (dB)			
Arrival	68	1	0	15	-4	64	3	67
Lorry manoeuvring	75	1	0	30	-10	65	3	68
Materials handling	72	5	7	30	-10	69	6	75
Engine starts and departs	75	1	0	30	-10	65	6	68
Combined SEL						72	SEL + feature	77
Sound pressure level, dB L _{Aeq 1hr} (each vehicle visit)						36		
Rating level, dB L _{Ar, 1hr} (each vehicle visit)								41
Correction for 7 vehicle visits in 1 hr								+8
Rating level, dB L _{Ar, 1hr}								49
SEL Correction for 125 vehicle visits in 1 day						+21		
SEL correction for 16hr day						-48		
Sound pressure level, dB L _{Aeq 16hr}						45		