

Report for:

P20 Group Ltd

48 – 50 Springfield Road, Horsham

Noise Impact Assessment

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1. INTRODUCTION

1.1. Background

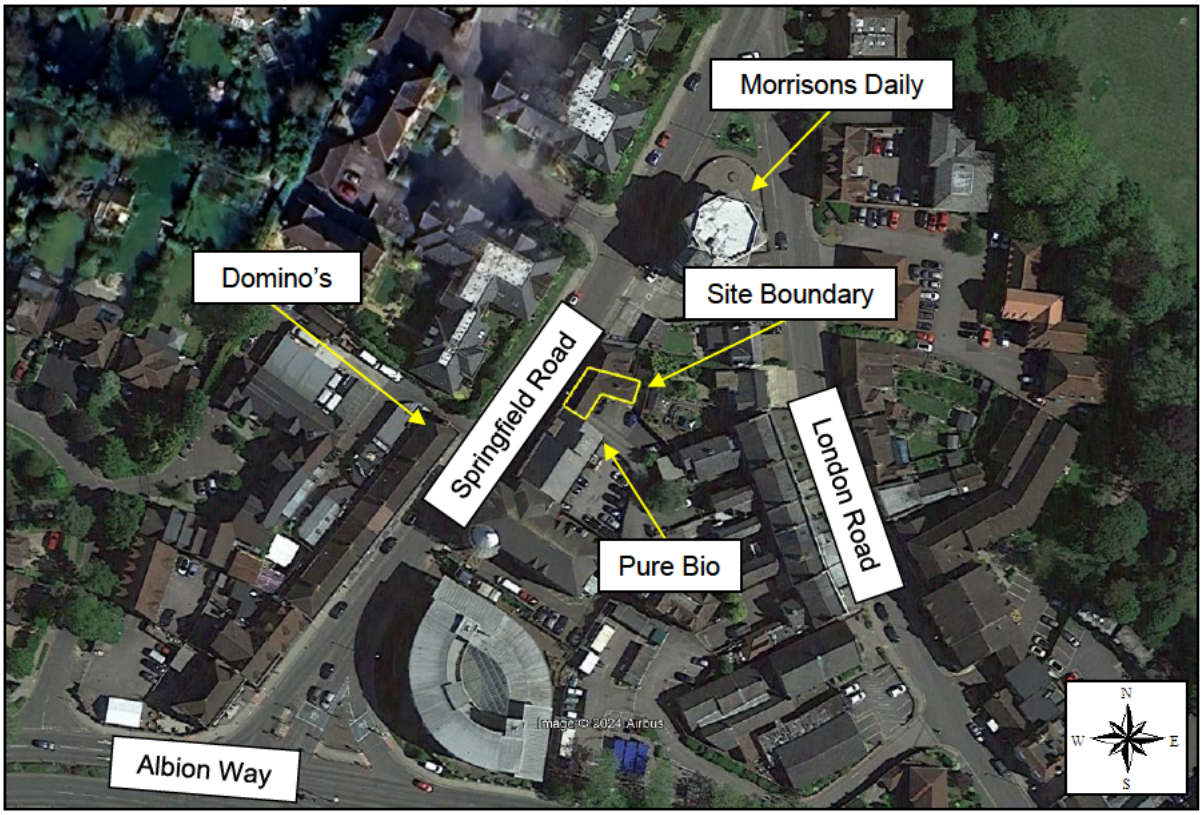
ACCON UK Limited (ACCON) has been commissioned by P20 Group Ltd to undertake a noise impact assessment for the proposed change of use at 48 – 50 Springfield Road, Horsham, RH12 2PD.

The change of use will comprise of the conversion of the rear ground and first floor offices (Class E) to one residential unit (Class C3).

The site is located within the administrative boundary of Horsham District Council (HDC).

Figure 1.1 provides the site location with the site boundary outlined in yellow.

Figure 1.1: Site Location



The site is located within a mixed-use area, combining both commercial and residential properties. It is positioned between existing office buildings at 44 – 46 Springfield Road and two residential properties at 52 and 52A Springfield Road. Pure Bio occupies the offices at 44 Springfield Road. To the north-east of the site is a Morrisons Daily supermarket. Springfield Road runs along the western boundary of the site, with London Road to the east and Albion Way to the south.

This noise assessment is required to determine the impact of existing commercial noise sources on the proposed change of use residential development. Appropriate recommendations for noise mitigation are provided.

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2. THE NATURE, MEASUREMENT AND EFFECT OF NOISE

Noise is often defined as sound that is undesired by the recipient. Whilst it is impossible to measure nuisance caused by noise directly, it is possible to characterise the loudness of that noise. '*Loudness*' is related to both sound pressure and frequency, both of which can be measured. The human ear is sensitive to a wide range of sound levels. The sound pressure level of the threshold of pain is over a million times that of the quietest audible sound. In order to reduce the relative magnitudes of the numbers involved, a logarithmic scale of decibels (dB) is normally used, based on a reference level of the lowest audible sound.

The response of the human ear is not constant over all frequencies. It is therefore usual to weight the measured frequencies to approximate the human response. The resulting 'A' weighted decibel, dB(A), has been shown to correlate closely to the subjective human response.

When related to changes in noise, a change of ten decibels, for example from 60 dB(A) to 70 dB(A), would represent a doubling in 'loudness'. Similarly, a 10 dB(A) decrease in noise, for example from 70 dB(A) to 60 dB(A), would represent a halving in 'loudness'. A change of 3 dB(A) is generally considered to be just perceptible[1]. **Table 2.1** provides typical noise levels of common sources.

Table 2.1: Typical Noise Levels

Approximate Noise Level (dB(A))	Example
0	Limit of hearing
30	Rural area at night
40	Library
50	Quiet office
60	Normal conversation at 1 m
70	In car noise without radio
80	Household vacuum cleaner at 1 m
100	Pneumatic drill at 1 m
120	Threshold of pain

A Glossary of Acoustic Terminology is provided in **Appendix 1.**

[1] Institute of Environmental Management and Assessment (2014). Guidelines for environmental noise impact assessment.

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3. NOISE ASSESSMENT CRITERIA

This section of the report identifies relevant National and Local Authority policy and guidance. Additionally, appropriate British Standards and guidance documents are also referenced.

3.1. National Planning Policy Framework

The revised National Planning Policy Framework (NPPF as amended in December 2023) supersedes the 2012, 2018, 2019 and 2021 versions of the NPPF. The purpose of the planning system is to contribute to the achievement of sustainable development. There are three dimensions to sustainable development: economic, social and environmental. The environmental role is to contribute to protecting and enhancing our natural, built and historic environment; and as part of this, make effective use of land, help to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate to adapt to climate change including moving to a low carbon economy.

One of the core planning principles is to contribute to conserving and enhancing the natural environment and reducing pollution. Allocations of land for development should prefer land of lesser value, where consistent with other policies in the Framework. The planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.

Paragraph 191 of the NPPF states:

"*Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they 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 the quality of life (see Explanatory Note to the Noise Policy Statement for England (Department for Environment, Food and Rural Affairs, 2010));

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."

Additionally, Paragraph 193 states:

"*Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.*"

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3.2. Noise Policy Statement for England

The Noise Policy Statement for England (NPSE) aims to "*through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:*

- *Avoid significant adverse impacts on health and quality of life;*
- *Mitigate and minimise adverse impacts on health and quality of life; and*
- *Where possible, contribute to the improvement of health and quality of life*".

Based on concepts from toxicology, it introduces three 'Effect Levels' relevant to the assessment of noise. These are:

- NOEL: No Observed Effect Level: This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise;
- LOAEL: Lowest Observed Adverse Effect Level: This is the level above which adverse effects on health and quality of life can be detected; and
- SOAEL: Significant Observed Adverse Effect Level: This is the level above which significant adverse effects on health and quality of life occur.

3.3. Planning Practice Guidance

The Planning Practice Guidance for Noise (PPG-N) was published in March 2014 and most recently updated in July 2019. The PPG-N suggests that the most appropriate and cost-effective solutions to potential noise issues are best identified when good acoustic design is considered early in the planning process.

The PPG-N provides the following advice on how to determine the noise impact on development:

"*Plan-making and decision making need to take account of the acoustic environment and in doing so consider:*

- *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.*

In line with the Explanatory Note of the Noise Policy Statement for England, this would include identifying whether the overall effect of the noise exposure (including the impact during the construction phase wherever applicable) is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation. As noise is a complex technical issue, it may be appropriate to seek experienced specialist assistance when applying this policy." (Paragraph 003 Reference ID 30-003-20190722)

The document goes on to acknowledge the levels of noise exposure at which an effect may occur as provided in the NPSE and introduces a fourth effect level:

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- UAE: Unacceptable Adverse Effect: Extensive and regular changes in behaviour and/or an inability to mitigate the effect of noise lead to psychological stress or physical effects.

Where residential development is proposed in the vicinity of existing businesses, community facilities or other activities that produce noise, the PPG-N advises that the applicant (or 'agent of change') need to clearly identify the effects of the existing businesses that may cause a nuisance (including noise) and clearly define the mitigation measures being proposed to address any potential significant adverse effects that are identified. The agent of change needs to not only consider the current activities of the business, but the permitted activities too, even if they are not occurring at the time of the application being made. The PPG-N acknowledges that "*It can be helpful for developers to provide information to prospective purchasers or occupants about mitigation measures that have been put in place, to raise awareness and reduce the risk of post-purchase/occupancy complaints.*" (Paragraph 009 Reference ID 30-009-20190722).

It is important to understand that as the PPG-N does not specifically provide any advice with respect to noise levels/limits for different sources of noise, it is appropriate to consider other sources of advice and guidance documents when considering whether new developments would be sensitive to the prevailing acoustic environment and the PPG-N signposts a number of appropriate guidance documents.

3.4. Local Authority Policy and Guidance

3.4.1. Horsham District Council Planning Framework

The Horsham District Council Planning Framework (2015) policy on noise states that:

Environmental Protection – Policy 24

9.11 *Noise pollution can have a significant impact on the quality of life and health of individuals and communities. To help avoid adverse noise impacts from development, authorities in both East and West Sussex have produced a Planning Guidance Document on this issue. Applicants should therefore address the issues raised in this document prior to making an application.*

Development Principles – Policy 33

In order to conserve and enhance the natural and built environment developments shall be required to:

> *2. Ensure that it is designed to avoid unacceptable harm to the amenity of occupiers/users of nearby property and land, for example through overlooking or noise, whilst having regard to the sensitivities of surrounding development.*

3.5. Noise Guidance

3.5.1. British Standard BS 8233:2014

BS 8233 *Guidance on sound insulation and noise reduction for buildings* has a number of design criteria for intrusive external noise without a specific character. The guidelines, in relation to this development, are designed to achieve good listening conditions in rooms.

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Whilst the internal noise levels suggested in BS 8233 *Guidance on sound insulation and noise reduction for buildings* at Section 7 of the BS relate to noise without a specific character, they provide useful guidance where no local authority guidance exists for internal noise levels from commercial noise sources. The guidelines are designed to achieve reasonable resting/sleeping conditions in bedrooms and good listening conditions in other rooms. The most appropriate noise levels for the residential environment are reproduced in **Table 3.1**.

Table 3.1: Indoor Ambient Noise Levels for Dwellings

Activity	Location	Daytime 0700 hrs to 2300 hrs	Night-time 2300 hrs to 0700 hrs
Resting	Living room	35 dB $L_{Aeq,16hr}$	-
Dining	Dining room/area	40 dB $L_{Aeq,16hr}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hr}$	30 dB $L_{Aeq,8hr}$

3.5.2. British Standard BS 4142:2014+A1:2019

BS 4142 *Methods for rating and assessing industrial and commercial sound* provides a method for the measurement and rating of industrial and commercial type noise sources and background noise levels outside dwellings. The rating level (defined in the BS) is used to rate the noise level of the source (this is defined as the 'specific sound level') outside residential dwellings.

The rating level is determined by assessing the character of the noise and applying an acoustic feature correction, if appropriate, to the specific sound level. Corrections are applied for the tonality, impulsivity and intermittency of the noise source which can all increase the impact of noise.

The initial assessment described in BS 4142 to determine whether an adverse impact is likely is based on establishing the difference between the rating level and the background noise level outside the residential property of interest. The British Standard states that the following points should be considered:

- "*Typically, the greater this difference, the greater the magnitude of the impact.*
- *A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.*
- *A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.*
- *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*

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sound level, this is an indication of the specific sound source having a low impact, depending on the context."

Where it is considered that the initial assessment of the impact needs to be modified due to the context in which the noise is occurring, BS 4142 suggests that all pertinent factors are taken into consideration, including:

1) *The absolute level of sound. For a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low.*

   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.

   Where residual sound[2] levels are very high, the residual sound might itself result in adverse impacts or significant adverse impacts, and the margin by which the rating level exceeds the background might simply be an indication of the extent to which the specific sound source is likely to make those impacts worse.

2) *The character and level of the residual sound compared to the character and level of the specific sound. Consider whether it would be beneficial to compare the frequency spectrum and temporal variation of the specific sound with that of the ambient or residual sound, to assess the degree to which the specific sound source is likely to be distinguishable and will represent an incongruous sound by comparison to the acoustic environment that would occur in the absence of the specific sound. Any sound parameters, sampling periods and averaging time periods used to undertake character comparisons should reflect the way in which sound of an industrial and/or commercial nature is likely to be perceived and how people react to it.*

3) *The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions, such as:*

   i. facade insulation treatment;

   ii. ventilation and/or cooling that will reduce the need to have windows open so as to provide rapid or purge ventilation; and

   iii. acoustic screening.

There is also a requirement within BS 4142:2014 to consider the uncertainty in the measurement and assessment procedure.

[2] The residual sound is defined as the ambient sound level at the assessment location in the absence of the specific sound source.

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4. NOISE MEASUREMENT SURVEY

A noise measurement survey was carried out in order to obtain background and ambient noise levels and to determine the extent to which the site is currently affected by noise from existing plant serving the nearby offices.

4.1. Methodology

A detailed noise measurement survey was carried out between 1245 hrs on Thursday 12th September 2024 and 1315 hrs on Friday 13th September 2024. One semi-permanent noise monitoring position was utilised. The noise measurement position has been identified in **Figure 4.1**. The noise measurement utilised a Svantek 971 Class 1 Sound Level Meter (SLM). The SLM that was used holds a current certificate of calibration, that is available upon request. Before and after the measurement period the equipment was calibrated in order to ensure that the equipment had remained within reasonable calibration limits (± 0.5 dB).

Noise Measurement Position 1 (**MP1**) was located at first floor level on the south eastern façade of 50 Springfield Road. The microphone was mounted at a distance of 1 m from the building façade at a height of approximately 4 m above ground level. This location was chosen in order to obtain noise levels over an extended period of time in a secure location. The noise climate was dominated by road traffic noise from Springfield Road and plant noise associated with nearby offices.

At the start of the noise measurement period the weather was dry with 60% cloud cover, a daytime temperature of 14°C and a north-westerly wind with speeds of up to 3.6 m/s. At the end of the measurement period the weather was dry with 30% cloud cover, a daytime temperature of 16°C and a north-westerly wind with speeds of up to 1.6 m/s. Weather conditions throughout the noise survey were suitable for noise measurements.

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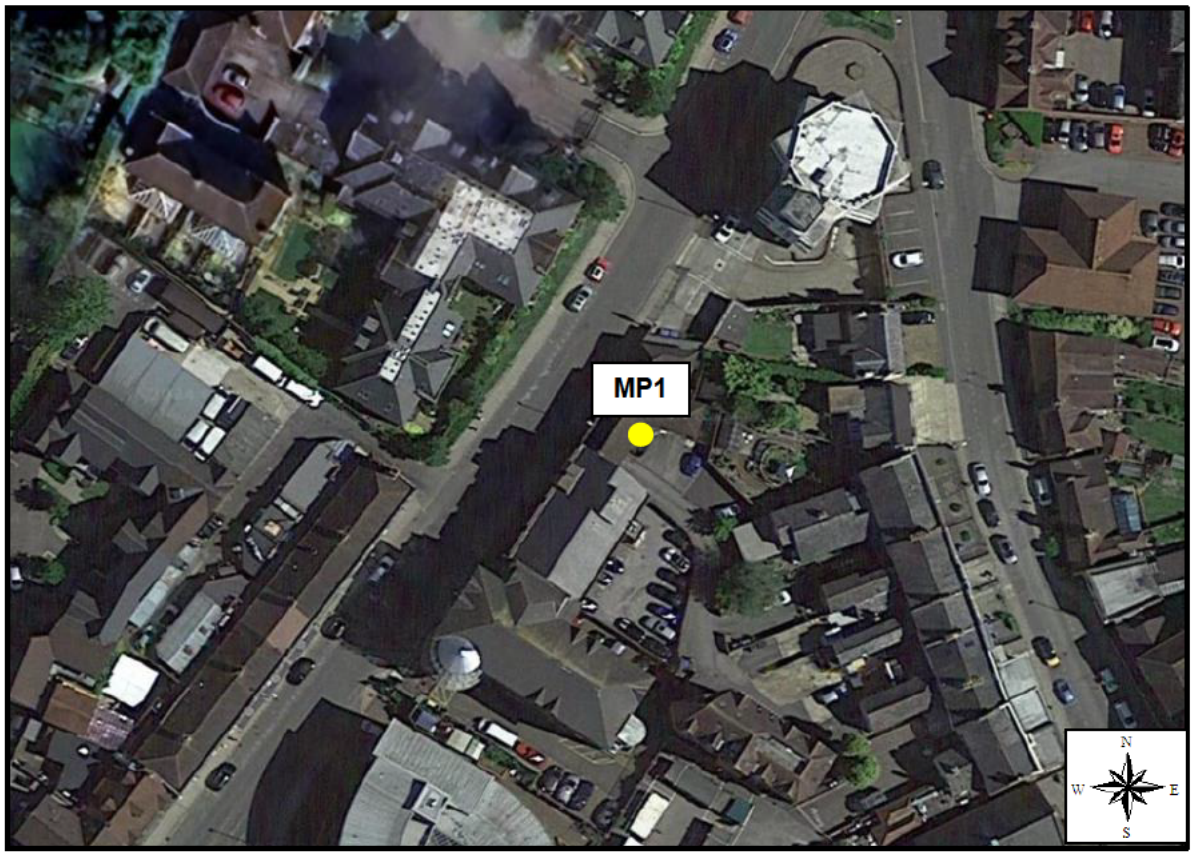
Figure 4.1: Noise Measurement Positions



4.2. Results

A summary of the unattended noise measurements are presented in **Table 4.2**. The free-field noise levels have been calculated by applying a correction of – 3 dB to convert the measured façade noise level to a free-field noise level. The hourly free-field noise measurement results for **MP1** are provided in **Appendix 2**.

Table 4.1 Unattended Noise Measurement Summary – Free-field

Position	Period	$L_{Aeq,T}$ (dB)	L_{AFmax} (dB)	$L_{A10,T}$ (dB)	Mean $L_{A90,T}$ (dB)	Modal $L_{A90,T}$ (dB)
MP1	0700 hrs to 2300 hrs	49	73	52	43	41
	2300 hrs to 0700 hrs	41	61 (60)	42	35	33

Note: The levels stated are logarithmic averages for $L_{Aeq,T}$ and arithmetic averages for $L_{A10,T}$ and mean $L_{A90,T}$. The L_{AFmax} is the average of the highest hourly maximum sound levels measured during the measurement period, measured with a fast time-weighting. The L_{AFmax} levels in brackets are the tenth highest L_{AFmax} noise levels measured during the measurement period. The typical background sound level has been determined from assessment of the lowest regularly occurring $L_{A90,T}$.

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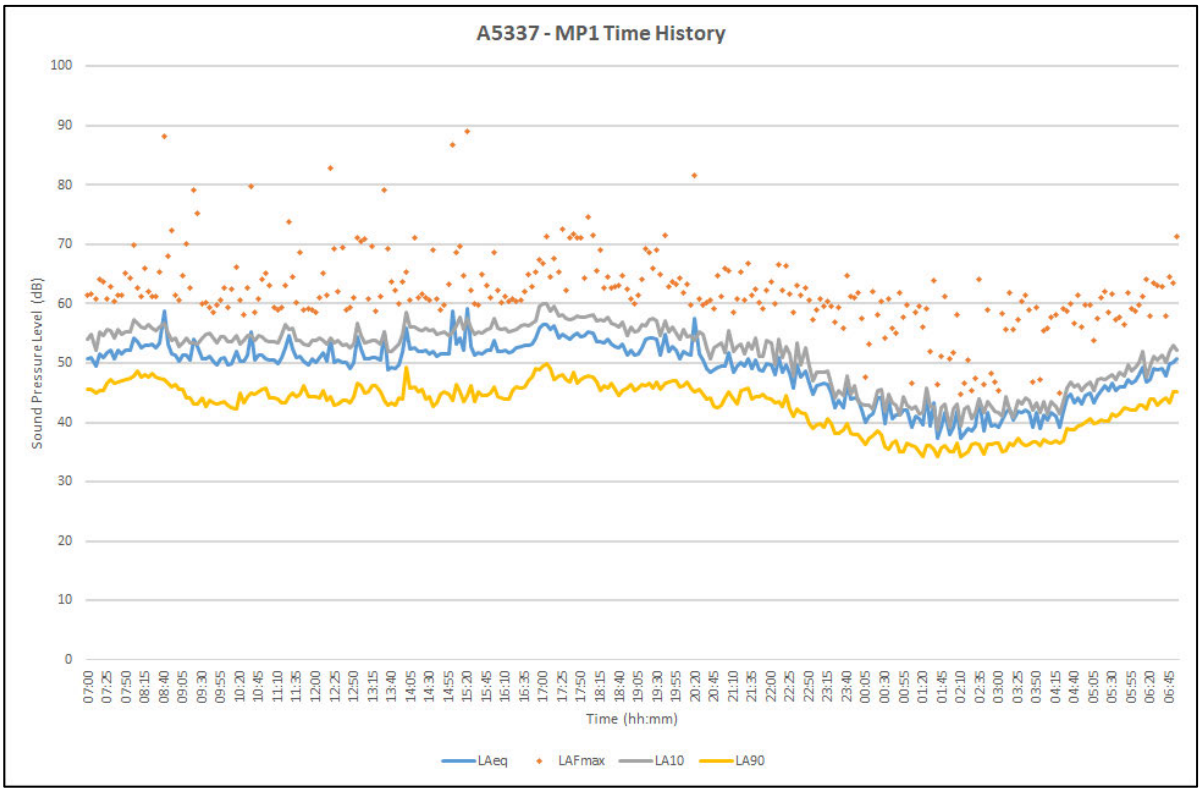
Figure 4.2 identifies the time history for the measured façade $L_{Aeq,T}$, L_{AFmax}, $L_{A10,T}$ and $L_{A90,T}$ at **MP1** during the noise measurement survey.

Figure 4.2 Noise Measurement Time History: MP1



The free-field $L_{A90,T}$ histograms for the daytime and night-time for **MP1** are presented in **Figures 4.3** and **4.4**.

Figure 4.3: $L_{A90,T}$ Histogram (Daytime)

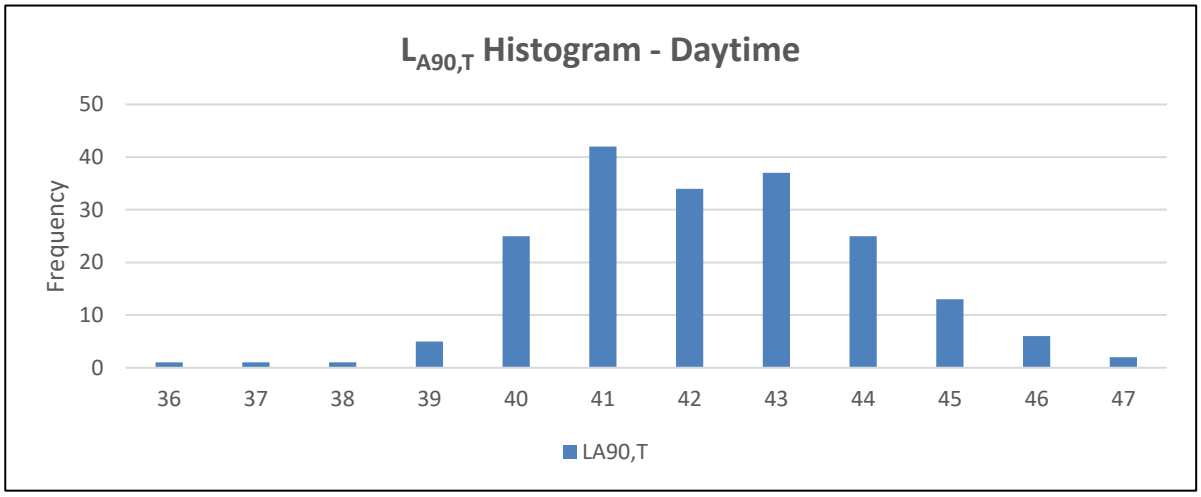


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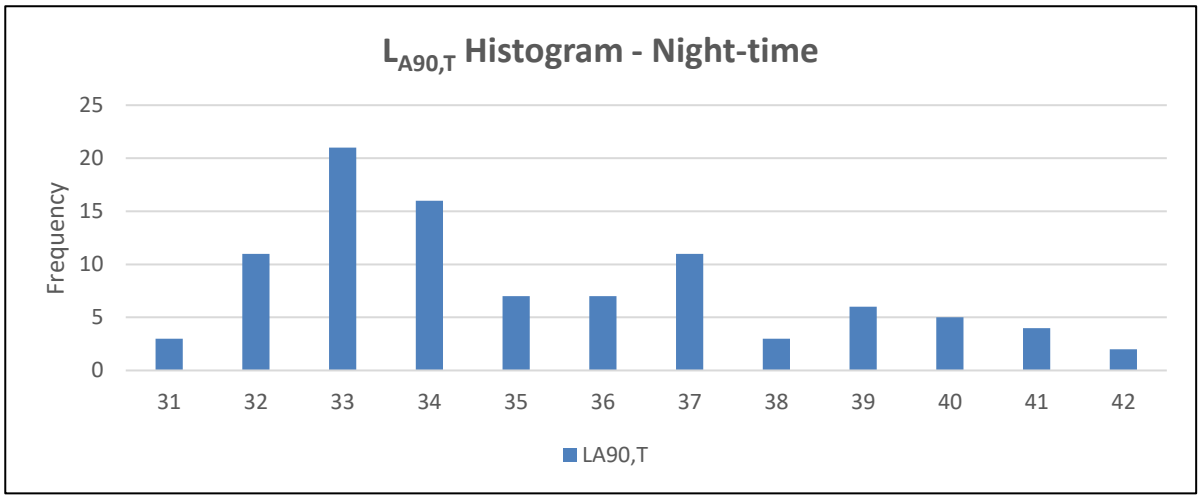
Figure 4.4: $L_{A90,T}$ Histogram (Night-time)



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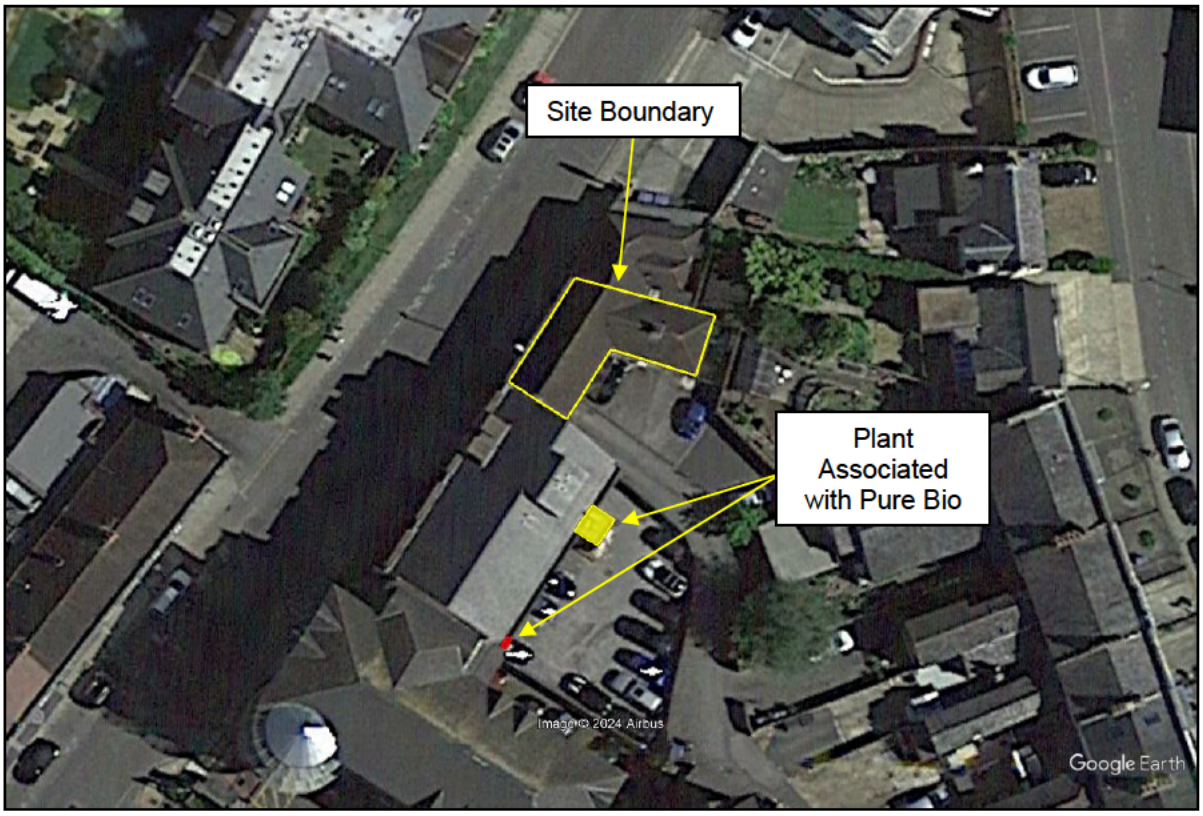
5. ACOUSTIC DESIGN STATEMENT

5.1. Plant Noise Assessment

The south and east façades of the change of use development building is subjected to plant noise from Pure Bio during both the daytime and night-time periods. The location of the existing plant is identified in yellow on **Figure 5.1** and the plant is located approximately 14 metres south of the southern façade. Additional mechanical plant associated with Pure Bio is identified in red and the proposed development will have no direct line of sight to the additional plant, and therefore will be unaffected by any noise emanating from it.

Figure 5.1: Location of Mechanical Plant Associated with Pure Bio



5.1.1. Specific Sound Levels

Specific sound levels from the plant noise sources associated with Pure Bio have been calculated by logarithmically subtracting the residual sound level as measured at **MP1** at the southern façade of the building from the ambient sound level and applying a correction to account for the partial shielding of the existing surrounding buildings between the plant source and **MP1**.

5.1.2. Background Sound Levels

Background sound levels measured at **MP1** without the impact of localised plant sound sources have been utilised from **Table 4.2** and are considered to be representative of the typical background sound levels at the proposed change of use development.

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5.1.3. BS 4142 Assessment

The BS 4142 assessment has been carried out for the southern façade of the building, which is the façade primarily affected by plant noise sources during the daytime and night-time period. The daytime BS 4142 assessment in **Table 5.1** assesses the impact of the plant noise from Pure Bio.

Table 5.1: Daytime BS 4142 Assessment

Results	Noise Level at the Façade (dB)	Relevant Clauses of BS 4142:2019	Commentary
Background Sound Level $L_{A90,T}$ (dB)	41	8.1, 8.2	The background sound level measured at **MP1** (**Table 4.2**)
Specific Sound Level $L_{Aeq,1hr}$ (dB)	45	7.3	The specific sound level from plant operating from Pure Bio is the calculated difference between the ambient sound level and the residual sound level (L_{Aeq})
Acoustic Feature Correction (dB)	+2	9.1, 9.2, 9.3	An Acoustic Feature Correction has been applied for +2 dB for Just Perceptible Tonality
Rating Sound Level $L_{Aeq,1hr}$ (dB)	47	9.2	(Specific Sound Level + Acoustic Feature Correction)
Excess of Rating Sound Level over Background Sound Level	+6	9.2	
Initial Estimate of Impact	Adverse Impact.	11	

The daytime BS 4142 assessment in **Table 5.1** identifies that the rating noise level exceeds the existing background noise level by 6 dB.

According to BS 4142:2019+A1:2019, a difference of "*around +5 dB*" is "*Likely to be an indication of an adverse impact depending on the context*", and where the "*rating level does not exceed the background level*" is it "*a low impact, depending on context*". The initial BS 4142 assessment for the daytime period indicates an adverse impact.

Table 5.2 assesses the impact of the plant noise from Pure Bio during the night-time period of 2300 hrs to 0700 hrs.

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Table 5.2: Night-time BS 4142 Assessment

Results	Noise Level at the Façade (dB)	Relevant Clauses of BS 4142:2019	Commentary
Background Sound Level $L_{A90,T}$ (dB)	33	8.1, 8.2	The background sound level measured at **MP1** (**Table 4.2**)
Specific Sound Level $L_{Aeq,1hr}$ (dB)	33	7.3	The specific sound level from plant operating from Pure Bio is the calculated difference between the ambient sound level and the residual sound level (L_{Aeq}) and takes into account a correction for plant on-time operating at 50%
Acoustic Feature Correction (dB)	+2	9.1, 9.2, 9.3	An Acoustic Feature Correction has been applied for +2 dB for just perceptible tonality.
Rating Sound Level $L_{Aeq,1hr}$ (dB)	35	9.2	(Specific Sound Level + Acoustic Feature Correction)
Excess of Rating Sound Level over Background Sound Level	+2	9.2	
Initial Estimate of Impact	Tending towards a Low Impact.	11	

The night-time BS 4142 assessment in **Table 5.2** identifies that the rating level exceeds the existing background level by 2 dB and therefore the initial BS 4142 assessment indicates a tendency towards a low impact.

5.1.4. Discussion of Uncertainty

ACCON carried out noise measurements on a weekday to obtain typical background sound levels representative of the noise sensitive receptor. It is considered that the noise measurement was carried out on a reasonably typical day for background sound levels.

The assessment has incorporated a worst-case acoustic feature corrections for tonality. There was no intermittency or impulsivity associated with the plant noise sources.

The noise measurements were carried out in accordance with BS 7445 Part 1 *Description and measurement of environmental noise* during weather conditions suitable for noise measurements.

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The calculation of specific sound levels has utilised the noise measurement data and has been carried out using standard acoustic formulae in line with BS 4142. It has been assumed that the sources of plant sound can be reasonably represented by point sources based on their location relative to the noise sensitive receptors, the orientation of the plant sources and any intervening screening structures.

On the basis of the above, it is considered that the effects of uncertainty have been minimised as far as possible.

5.1.5. Discussion of Context

When considering the impact of plant noise in a BS 4142 assessment it is necessary to consider the context. The proposed development is situated in a mixed area of commercial and residential uses however the area is predominantly commercial uses.

Background sound levels measured at **MP1** have been utilised for the BS 4142 assessment which are representative of the background sound levels which would occur at the southern façade of the proposed dwelling.

The initial assessment has indicated an adverse impact during the daytime period and a tendency towards a low impact during the night-time period from existing plant noise at Pure Bio.

During the daytime period, the noise climate is heavily dominated by road traffic noise from Springfield Road. Only the southern façade of the proposed development at first floor level will have line of sight to the mechanical plant associated with Pure Bio. The BS 4142 assessment has assessed the southern façade, and therefore can be considered an absolute worst case scenario In regard to any effect from mechanical plant noise emanating from Pure Bio. It should be noted that the existing ambient noise climate is in the order of 49 dB $L_{Aeq,16hr}$ and the rating noise is 2 dB below the ambient noise level and is therefore likely to be barely perceptible at the southern façade.

As the change of use development is not proposing any external amenity areas, residents will be within their dwelling during both the daytime and night-time periods and therefore it is appropriate to consider the sound insulation provided by the building envelope. Allowing for a 15 dB reduction for windows partially open for ventilation, the noise impacts on residents will be reduced further such that internal noise levels due to the plant noise would be 30 L_{Aeq} dB during the daytime period and 18 L_{Aeq} dB during the night-time period.

These considerations indicate, that when context is taken into account, the operational noise at night from the existing plant is not considered to result in a significant adverse noise impact and it can therefore be concluded that the noise impact would be low and there would be no requirement for any specific mitigation measures.

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5.2. Compliance with BS 8233:2014 Internal Noise Level Criteria

Table 5.3 and **Table 5.4** utilises the specific noise levels from the existing plant at Pure Bio in **Tables 5.1** and **5.2** and compares them against the internal noise level criteria set out within BS 8233 (see **Table 3.1**) for the southern façade of the proposed development on the worst-case scenario that the existing building has a standard double glazed window configuration.

Table 5.3: Calculated Internal Noise Levels with Windows Closed

	External Noise Level $L_{Aeq,T}$ (dB)	Typical double glazed window sound reduction (R_w+C_{tr} dB)	Internal Noise Level $L_{Aeq,T}$ (dB)	BS 8233 Target Internal Noise Levels	Below the Target Noise Level Range?
Daytime	45	28	17	35	✓
Night-time	33	28	5	30	✓

Table 5.4: Calculated Internal Noise Levels with Windows Open

	External Noise Level $L_{Aeq,T}$ (dB)	Typical double glazed window sound reduction (R_w+C_{tr} dB) with windows open	Internal Noise Level $L_{Aeq,T}$ (dB)	BS 8233 Target Internal Noise Levels	Below the Target Noise Level Range?
Daytime	45	15	30	35	✓
Night-time	33	15	18	30	✓

Tables 5.3 indicates that the predicted noise levels with windows closed are 17 dB $L_{Aeq,16hr}$ internally during the daytime period and 5 dB $L_{Aeq,8hr}$ internally during the night-time period due to plant noise. **Table 5.4** indicate that the predicted noise levels with windows partially open for ventilation are 30 dB $L_{Aeq16hr}$ during the daytime period and 18 dB $L_{Aeq,8hr}$ during the night-time period. Therefore, **Tables 5.3** and **5.4** demonstrate that when windows are open or closed, the internal noise level criteria set out in BS 8233 of 35 dB $L_{Aeq,16hr}$ for daytime and 30 dB $L_{Aeq,8hr}$ for night-time are met.

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6. MITIGATION

The BS 4142 assessment has demonstrated that with context taken into account, no additional noise mitigation measures are required.

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7. SUMMARY

A noise assessment has been carried out at the site in order to determine the extent to which the site is currently affected by commercial noise from the surrounding uses. The assessment has been informed by a noise measurement survey carried out across a typical weekday at 48 – 50 Springfield Road, Horsham.

An assessment in line with BS 4142:2014+A1:2019 has been carried out to determine the impact of commercial noise on the proposed residential use of 48 – 50 Springfield Road. The BS 4142 assessment has demonstrated that there would be a low impact from plant noise emanating from Pure Bio during the daytime and night-time periods when context is taken into account.

Achievement of the target noise criteria will ensure compliance with the overall aims of paragraphs 191 and 193 of the NPPF and the PPG-N in that noise is not expected to result in any significant adverse effects on health or quality of life for future occupants of the proposed development or result in any restrictions on businesses operating in the immediate area.

7.1. Recommendations to the Decision Maker

On the basis of the above, it is recommended that there should be no objection to granting consent for the proposed change of use development on noise grounds.

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ADDITIONAL FIGURES

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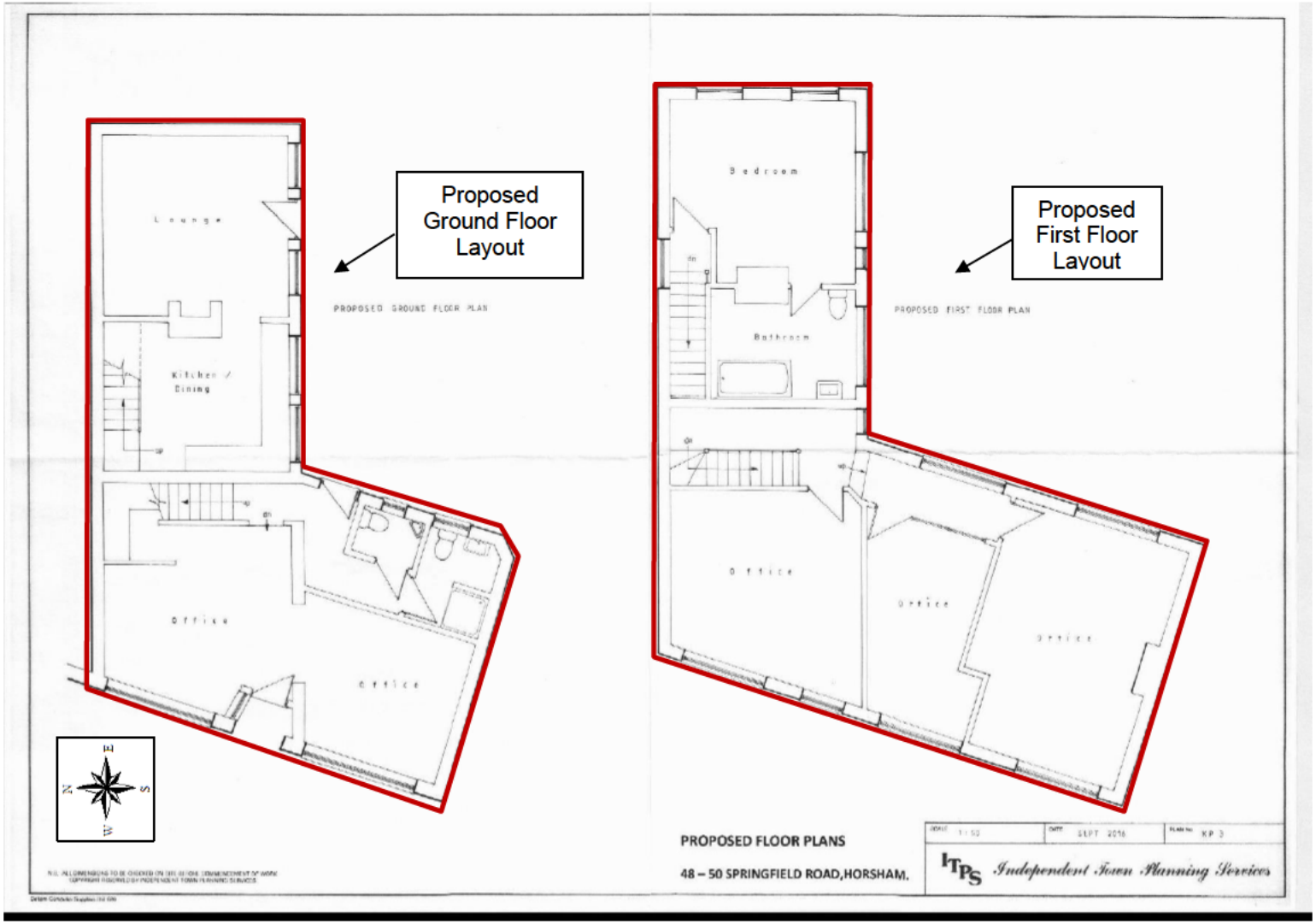
Figure F.7.1: Proposed Site Layout



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APPENDICES

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Appendix 1
Glossary of Acoustic Terminology

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Term	Description
'A'-Weighting	*This is the main way of adjusting measured sound pressure levels to take into account human hearing, and our uneven frequency response.*
Decibel (dB)	*This is a tenth (deci) of a bel. Decibel can be a measure of the magnitude of sound, changes in sound level and a measure of sound insulation. Decibels are not an absolute unit of measurement but are an expression of ratio between two quantities expressed in logarithmic form.*
$L_{Aeq,T}$ (Ambient/Period Sound Level)	*The equivalent steady sound level in dB containing the same acoustic energy as the actual fluctuating sound level over the given period, T. T may be as short as 1 second when used to describe a single event, or as long as 24 hours when used to describe the noise climate at a specified location. $L_{Aeq,T}$ can be measured directly with an integrating sound level meter.*
$L_{A90,T}$ (Background Sound Level)	*The 'A'-weighted sound pressure level of the residual noise in decibels exceeded for 90 per cent of a given time. The $L_{A90,T}$ is used to describe the background noise levels at a particular location.*
L_{Amax}	*The 'A'-weighted maximum sound pressure level measured over a measurement period. Typically measured with 'fast' weighting (125 ms) or 'slow' weighting (1 s).*
Rating Level, $L_{Ar,\ Tr}$	*The specific sound level plus any adjustment for the characteristic features of the sound.*
Residual Sound Level, $L_r = L_{Aeq,T}$	*Ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound.*
Specific Sound Level, $L_{Aeq,Tr}$	*The equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, Tr.*

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Appendix 2
Noise Measurement Results

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Table 1: Hourly Noise Measurement Results at MP1

Time	$L_{Aeq,T}$ (dB)	L_{Amax} (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
07:00-08:00	48	62	53	45
08:00-09:00	51	85	54	46
09:00-10:00	48	76	52	43
10:00-11:00	48	77	52	43
11:00-12:00	48	71	51	41
12:00-13:00	48	80	51	41
13:00-14:00	48	76	50	42
14:00-15:00	49	68	53	42
15:00-16:00	52	86	53	42
16:00-17:00	50	64	53	43
17:00-18:00	52	70	55	45
18:00-19:00	50	72	54	43
19:00-20:00	50	68	53	43
20:00-21:00	49	79	51	42
21:00-22:00	47	64	50	42
22:00-23:00	46	64	48	39
23:00-00:00	42	62	43	36
00:00-01:00	39	59	40	34
01:00-02:00	38	61	39	33
02:00-03:00	37	61	39	33
03:00-04:00	38	59	40	33
04:00-05:00	40	58	41	35
05:00-06:00	43	59	45	38
06:00-07:00	46	68	48	41
Daytime (07:00-23:00)	**49**	**73**	**52**	**43**
Night-time (23:00-07:00)	**41**	**61**	**42**	**35**

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