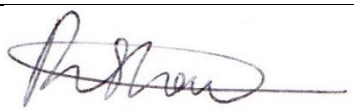
Report for:

Undercover Brothers Ltd

2 Percy Street, London

Noise Impact Assessment

Status: Final **Date: 11.11.2019**

Author	 Rebecca Shaw Junior Acoustic Consultant
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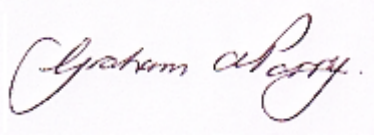
Approved By	 Graham Parry Managing Director
Report For	Undercover Brothers Ltd 2 Western Business Park Mansfield Road London W3 0BZ
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CONTENTS

LIST OF TABLES

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Unit B, Fronds Park, Frouds Lane, Aldermaston, Reading, RG7 4LH
Reading Office: 0118 971 0000
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LIST OF FIGURES

LIST OF APPENDICES

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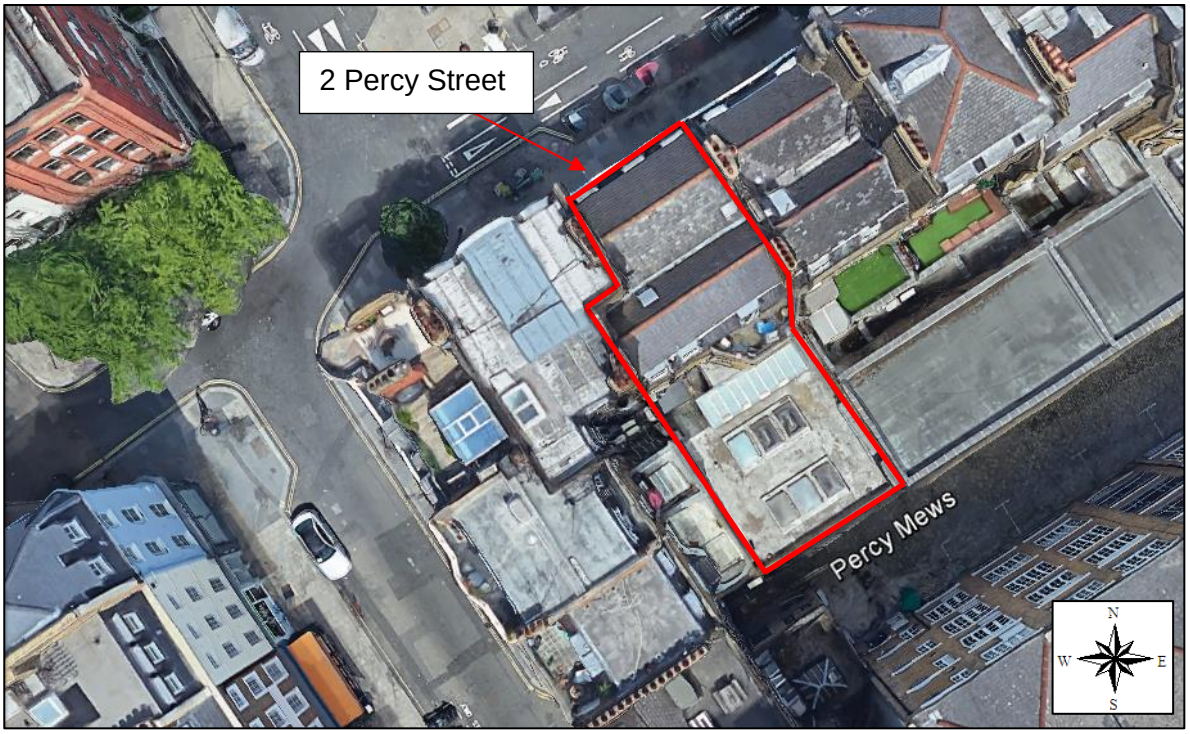
1. INTRODUCTION

ACCON UK Limited (ACCON) has been commissioned by Undercover Brothers Ltd to carry out a noise impact assessment of the proposed externally located condenser units at 2 Percy Street, London. The condensers are required to provide heating and cooling to the ground and basement floors of the proposed art gallery. This assessment is required to determine the impact of noise from the externally mounted units on the nearest noise sensitive receptors and identify any appropriate mitigation measures, where required.

A site layout plan is provided in **Figure 1.1**.

Figure 1.1: Site Layout Plan



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2. THE NATURE, MEASUREMENT AND EFFECT ON 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 Error! Reference source not found..

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

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3. NOISE ASSESSMENT CRITERIA

3.1. National Planning Policy Framework

The revised National Planning Policy Framework (NPPF, February 2019) supersedes the 2012 and 2018 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 180 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 182 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) was developed by DEFRA and published in March 2010. The vision of the NPSE is to '*Promote good health and good quality of life through the effective management of noise within the context of Government policy on sustainable development*'.

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 needs to be 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

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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 further effect level:

- 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.

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. London Borough of Camden

Appendix 3 of the LBC Local Plan which was published in 2017 provides advice to evaluate the significance of noise impact for different sources, receptors and operation times for planning applications. A section regarding industrial and commercial noise sources advises: *"Where appropriate and within the scope of the document it is expected that British Standard 4142:2014 'Methods for rating and assessing industrial and commercial sound' (BS 4142) will be used. For such cases a 'Rating Level' of 10 dB below background (15 dB if tonal components are present) should be considered as the design criterion."*

This section of Appendix 3 also explains that the Council considers the design periods to be 0700 hrs to 2300 hrs for the daytime and 2300 hrs to 0700 hrs for the night-time. However, this section then states that: *"The Council will take into account the likely times of occupation for types of development and will be amended according to the times of operation of the establishment under consideration."*

3.5. British Standard 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 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.*

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- *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 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;

[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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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.

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4. BACKGROUND SOUND MEASUREMENT SURVEY

A noise measurement survey has been carried out at the site to determine the typical background sound levels in the vicinity of nearby noise sensitive receptors. The noise measurements were carried out between 1155 hrs on Monday 28th October 2019 and 1200 hrs on Tuesday 29th October 2019. One semi-permanent noise monitoring position was utilised. The noise measurement position has been identified in **Figure F.1**.

At the start of the noise measurement period the weather was dry with approximately 70% cloud cover. A daytime temperature of 12°C was recorded and there was a south westerly wind with speeds of less than 1 m/s.

At the end of the noise measurement period the weather was dry with 100% cloud cover. A temperature of 13.5°C was recorded and there was a westerly wind with speeds of less than 1 m/s.

The noise measurement utilised a Svantek 971 Class 1 Sound Level Meter. The sound level meter holds a current certificate of calibration, which is available upon request. The equipment was field calibrated before and after the measurement period to ensure that it had remained within reasonable calibration limited (±0.5 dB).

Measurement Position 1 (MP1) was located at a height of 1.5 m in a façade position on the flat roof. The ambient noise climate was dominated by an existing extract flue to the immediate west of the site which has been identified in **Figure F.1**. The extract flue serves the adjacent House of Hô restaurant and was noted to operate from 0900 hrs until 2300 hrs.

The daytime and night-time façade noise levels measured at MP1 are summarised in **Table 4.1**.

Table 4.1 Summary of the façade Noise Levels from Semi-Permanent Noise Monitoring

Period (hours)	Ambient Sound Level $L_{Aeq,T}$ (dB)	Average (Mean) Background Sound Level $L_{A90,5min}$ (dB)	Typical (Modal) Background Sound Level $L_{A90,5min}$ (dB)
Daytime (0700 hrs – 2300 hrs)	54	52	53
Night-time (2300 hrs – 0700 hrs)	48	44	43

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5. NOISE IMPACT ASSESSMENT

5.1. Plant Sound Level Data

One type of external condenser unit has been proposed to serve heating and cooling at 2 Percy Street, London. The condenser unit is a Daikin AZAS100MV1.

Table 5.1 presents the sound pressure and sound power levels reported in Daikin company literature for this condenser unit.

Table 5.1 Sound Pressure and Sound Power Level Data for Specified Condenser Units

Unit	A-Weighted Sound Pressure Level (Cooling) (dB)	A-Weighted Sound Pressure Level (Heating) (dB)	A-Weighted Sound Power Level (Cooling) (dB)
AZAS100MV1	53	57	70

Note: Sound Pressure Measurements are understood to have been made at a position of 1.5 m above ground level and 3 m in front of the unit.

Three of the above condenser units will be located to the rear of 2 Percy Street on the existing flat roof above the ground floor. They will be set back 2 m from the rear elevation of 2 Percy Street which overlooks Percy Mews, and away from the windows of the adjacent properties on Percy Mews. These locations can be identified in **Figure F.1**.

The condenser units will operate during the opening hours of the ground floor and basement unit at 2 Percy Street. The opening hours are expected to be as follows:

- Monday: Closed
- Tuesday – Saturday: 10:30 – 19:30
- Sunday: 10:30 – 17:30

5.2. Specific Sound Levels

The specific sound levels have been predicted at five off-site receptors, assuming no mitigation measures are installed. The receptor locations are identified in **Table 5.2** which presents the highest predicted sound levels at the five identified receptor locations.

Table 5.2 Predicted Specific Sound levels of the Specific Sound Sources at the Receptors

Receptor	Specfic Sound Level $L_{Aeq,T}$ (dB)
R1: The Wheatsheaf	45
R2: 26 Rathbone Place	46
R3: 27 Rathbone Place	45
R4: 3 Percy Street	45

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Receptor	Specfic Sound Level $L_{Aeq,T}$ (dB)
R5: 3 Percy Mews	42(1)

Note: (1) Whilst this receptor is closest to the proposed location of the condenser units, the closest windows are screened by the roof parapet. An attenuation correction of -8 dB has been calculated by considering that the parapet acts as a noise barrier.

5.3. Acoustic Feature Corrections

5.3.1. Tonality

Annex C of BS 4142:2014 provides an objective method for determining whether a sound source has a tonal feature. This method utilises the one-third octave frequency sound pressure levels however, that data is not available for the proposed condenser units. Accordingly, an acoustic feature correction of +2 dB has been applied to all specific sound levels, as suggested in BS 4142:2014 for a tone which is just perceptible at the noise receptor as a subjectively noticeable tone is often detected in the vicinity of similar condenser units.

5.3.2. Impulsivity

Under typical operating conditions, it is not considered that these condenser units will ever result in impulsive acoustic features, therefore no corrections have been applied for impulsivity.

5.3.3. Intermittency

It is expected that these units will run intermittently, depending on the usage of the building and external ambient conditions. An acoustic feature correction of +3 dB has therefore been applied to all specific sound levels (in addition to the tonal correction) as suggested in BS 4142:2014 for situations in which the intermittency is *"readily distinctive against the residual acoustic environment"*.

5.4. Rating Level

Table 5.3 presents the rating level (specific sound level plus acoustic feature corrections) at the five receptor locations.

Table 5.3: Predicted Rating Levels of the Specific Sound Sources at the Receptors

Receptor	Rating Level $L_{Aeq,T}$ (dB)
R1: The Wheatsheaf	50
R2: 26 Rathbone Place	51
R3: 27 Rathbone Place	50
R4: 3 Percy Street	50

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Receptor	Rating Level $L_{Aeq,T}$ (dB)
R5: 3 Percy Mews	47

5.5. Background Sound Levels and Target Plant Sound levels

Table 5.4 presents the modal values of the measured background sound levels; these are considered to represent the typical daytime background sound levels during the proposed condenser unit operating hours at the receptors.

With reference to the requirements of LBC (refer to **Section 3.4)**, the target plant sound levels at the nearest receptors should be 10 dB below the typical background sound levels. The target plant sound levels have also been presented in **Table 5.4**.

Table 5.4 Background Sound Levels and Target Plant Sound Levels

Period	Typical Background Sound Level $L_{A90,\ 5mins}$ (dB)	Target Plant Sound Level $L_{Aeq,\ T}$ (dB)
Daytime	53	43

5.6. BS 4142 Calculation

Table 5.5 presents the daytime excess of the rating level (**Table 5.3**) over the typical background sound levels (**Table 5.4**).

Table 5.5 Excess of the Rating Level of the Specific Sound Source over Typical Background Sound Levels

Receptor	Excess of Rating Level over Background Sound Level Daytime (dB)
R1: The Wheatsheaf	-3
R2: 26 Rathbone Place	-2
R3: 27 Rathbone Place	-3
R4: 3 Percy Street	-3
R5: 3 Percy Mews	-6

Table 5.5 indicates that without mitigation the plant noise sources would not achieve the required 10 dB below the background sound level (i.e. a -10 dB excess of rating level over

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the background sound level) at any on-site assessed receptors. With reference to BS 4142, the initial indications of impact ratings are low during the daytime at all receptors.

5.7. Discussion of Context

The proposed condenser units are required to support the heating and cooling system at 2 Percy Street. The condenser units are proposed to be installed on the existing flat roof above the ground floor commercial unit. The condenser units will only operate during the proposed opening hours of the commercial unit (typically between 1030 hrs and 1930 hrs).

It is noted that the background sound levels in the vicinity of the residential receptors are dominated by existing plant noise from the adjacent extract flue. It was also noted on site that sound levels at the frontage of Percy Mews are also affected by the intermittent operation of condensers units located to the rear of The Wheatsheaf public house and on the front of some of the residential units on Percy Mews.

Due to the operation of the existing flue to the west of the measurement position through the majority of the daytime period, the typical background sound level is 53 dB during the day time (see **section 5.5**). The proposed condenser units have been predicted to not exceed the background sound level, however, the rating level of the specific sound source at the worst affected receptor (R2: 26 Rathbone Place) would only be 2 dB lower than the background sound level. Taking into consideration the acoustic features of these sources of plant noise, plant sound is unlikely to be noticeable within habitable rooms of the adjacent residential receptors.

5.8. Discussion of Uncertainty

ACCON carried out a 24-hour semi-permanent noise measurement on a weekday to obtain typical background sound levels representative of adjacent noise sensitive receptors. Due to the location of restaurants and a Public House (The Wheatsheaf) in the vicinity of the site, it is likely that background sound levels could be marginally higher over the weekend period (Friday to Sunday). It is considered that the noise measurement period was carried out on a worst-case day for background sound levels.

The dominant noise source throughout the daytime to the rear of 2 Percy Street was the operation of an existing extract flue which operated between 0900 hrs and 2300 hrs. The proposed condenser units will operate during the commercial unit's opening hours (typically 1030 hrs to 1930 hrs), therefore, only a daytime assessment has been carried out. The assessment has incorporated acoustic feature corrections for tonality and intermittency based on the type of plant unit proposed.

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.

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

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On the basis of the above, it is considered that the effects of uncertainty have been minimised as far as possible based on the information available to support this assessment.

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6. MITIGATION

Section 5.6 has identified that the target plant sound level as specified by LBC would not be achieved at any of the receptors during the operation of the condenser units. However, the excesses of the rating levels of the specific sound levels at all receptors is below the background sound level.

In order to achieve the target plant sound level as specificed by LBC, a minimum attenuation of 8 dB(A) is required. Attenuation could be provided by an acoustic enclosure or an acoustic barrier system which provides sufficient screening to receptors at height which overlook the plant sources. This will ensure that the plant noise sources are at least 10 dB below the background sound level. **Table 6.1** presents the mitigated specific sound levels and corresponding rating levels for the condensers at the five receptors.

Table 6.1 Predicted Rating Levels of the Specific Sound Sources with Mitigation

Receptor	Specific Sound Level $L_{Aeq,T}$ (dB)	Rating Level $L_{Aeq,T}$ (dB)
R1: The Wheatsheaf	37	42
R2: 26 Rathbone Place	38	43
R3: 27 Rathbone Place	37	42
R4: 3 Percy Street	37	42
R5: 3 Percy Mews	34	39

Table 6.2 presents the excess of the mitigated rating levels over the background sound level.

Table 6.2 Excess of the Rating Level of the Specific Sound Source over Typical Background Sound Levels with Mitigation

Receptor	Excess Over Background Sound Level Daytime (dB)
R1: The Wheatsheaf	-11
R2: 26 Rathbone Place	-10
R3: 27 Rathbone Place	-11
R4: 3 Percy Street	-11
R5: 3 Percy Mews	-14

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Table 6.2 demonstrates that, with an appropriate acoustic enclosure ensuring the minimum insertion loss identified above, the rated sound levels would be at least 10 dB below the typical background sound levels for all receptors. This demonstrates that the Local Authority criterion of a rating level at least 10 dB below background sound level would be met.

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7. CONCLUSIONS

An assessment in line with the methodology in BS 4142: 2014 has been carried out to assess noise from the proposed condenser units at 2 Percy Street, London. The condenser units are required to provide heating and cooling to the premises.

LBC guidance identifies a requirement that the installation of the new plant sound sources should satisfy their design criterion, namely that the rating level of specific sound sources is at least 10 dB below the typical background sound level.

The assessment has identified that the condenser units would not satisfy the LBC planning criterion without mitigation measures. An acoustic enclosure providing a minimum insertion loss of 8 dB would ensure that the rating level of the specific sound sources would satisfy the LBC criterion during the daytime.

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ADDITIONAL FIGURES

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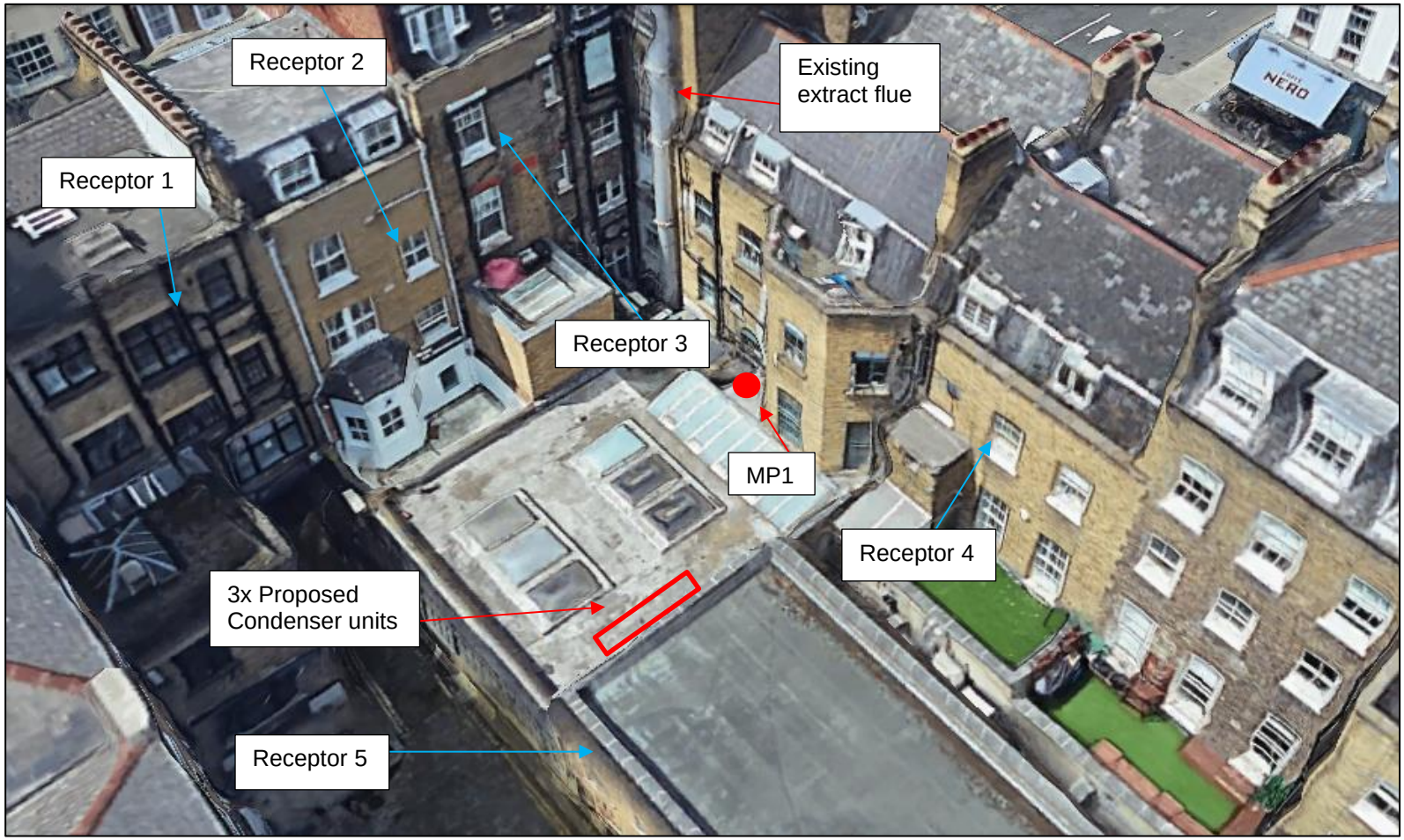
Figure F.1: Site Location Plan Identifying Noise Sensitive Receptors, Noise Sources and Noise Measurement Location



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APPENDICES

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Appendix 1
Glossary of Acoustics 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, $L_s = L_{Aeq,Tr}$	*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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HOURLY FAÇADE 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	63	50	46
08:00-09:00	51	69	52	48
09:00-10:00	53	78	54	52
10:00-11:00	53	72	54	52
11:00-12:00	54	65	55	53
12:00-13:00	54	67	55	53
13:00-14:00	54	67	55	53
14:00-15:00	54	70	55	53
15:00-16:00	55	73	55	53
16:00-17:00	54	73	55	53
17:00-18:00	54	68	55	53
18:00-19:00	54	76	55	53
19:00-20:00	54	62	55	53
20:00-21:00	58	88	55	53
21:00-22:00	54	68	55	53
22:00-23:00	54	64	54	52
23:00-00:00	51	76	51	47
00:00-01:00	49	70	49	44
01:00-02:00	47	65	48	43
02:00-03:00	47	65	58	43
03:00-04:00	46	59	47	43
04:00-05:00	46	67	47	43
05:00-06:00	46	64	47	43
06:00-07:00	49	68	49	45
Daytime (07:00-23:00)	**54**	**70**	**54**	**52**
Night-time (23:00-07:00)	**48**	**68**	**48**	**44**

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