MR DEREK MCCULLOCH

1 HILLTOP COTTAGES, THE MOUNT, IFIELD, CRAWLEY
WEST SUSSEX RH11 0LF

Noise Impact Assessment

March 2025

eas ltd
Environmental Assessment Services Ltd

REPORT DATA SHEET

Requirement	Data
Report Ref	794/MME/1HilltopCottages/NIA
Date	March 2025
Client	Derek McCulloch
Report type	Noise Impact Assessment
Purpose	Planning
Revisions	
Prepared by	Xanthe Lyford BSc (Hons) [redacted] Signed
Approved by	Eur Ing Malcolm McKemey BSc (Hons), CEng, CEnv, MICE, MCIWEM, MIEnvSc [redacted] Signed

1 HILLTOP COTTAGES

THE MOUNT, IFIELD, CRAWLEY, WEST SUSSEX RH11 0LF

Noise Impact Assessment

March 2025

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1 HILLTOP COTTAGES

THE MOUNT, IFIELD, CRAWLEY, RH11 0LF

Noise Impact Assessment

March 2025

1. THE SITE AND BACKGROUND

1.1 The two sites are currently used as a garden attached to the main house and a field to the south of the house. The sites are accessed from The Mount via a gravelled driveway leading to a parking area at the rear of the garden and the front entrance to the field. There is a shipping container used as an office located along the eastern boundary of the field (to be removed/relocated). The rest of the plot is currently laid to grass with mature native hedges along the southern, eastern and western side of the field.

1.2 The sites lies in a rural residential area and is bordered to the north by The Mount public highway with fields on the opposite side, to the east by a barn and a dog kennels (Bulldog Holidays, Hillplace), to the south by an equestrian yard and to the west 2 Hilltop Cottages (attached to the existing house) and a field belonging to The Mount Farmhouse. The Ordnance Survey reference for the centre of the site is TQ 22776 38117 and the site elevation is approximately + 96 m AOD. The total site area is approximately 0.4 Ha. See Figure 1 in appendix A for the Site Location.

1.3 Planning permission is being sought for two applications: the demolition of existing barn building in field and erection of 5no dwellings in the field at the approximate location of the southwestern corner of the shipping container/office. Also, for the erection of a dwelling in the side garden of the existing property at 1 Hilltop Cottages See Figure 2 in Appendix A for the Proposed Development Plans, and figure 3 and 4 for the red line boundaries for each of the sites.

1.4 The surrounding land use in the vicinity of the sites comprises a mix of residential and agricultural. The eastern façade of the neighbouring property (2 Hilltop Cottages) to the west is attached to the existing house and the property to the east (Hillplace) is separated from the field site by the gravel access track and a hedge. The Mount Farmhouse is separated from the garden site by a boundary hedge.

1.5 The principal existing noise sources at the sites are considered to be dogs from the neighbouring kennels and passing aircraft taking off or landing at Gatwick airport to the northeast.

1.6 A noise impact assessment has been carried out in accordance with Professional Practice Guidance (ProPg): Planning & Noise (May 2017) and with reference to the recommendations given in the *National Planning Policy Framework* (NPPF) March 2012 and *Noise Policy Statement for England* (NPSE) 2010. Reference has been made to the British Standard Guidance on Sound Insulation and Noise Reduction for Buildings (BS 8233:2014) and the World Health Organisation publications Night Noise Guidelines for Europe 2009 and Community Noise Guidelines 1999. The site was initially visited on Tuesday 4 March and again on Monday 10 March 2025.

2. DEFINITIONS

2.1 Noise assessment terms used in the report are defined and described below:

$dB_{(A)}$ – the unit of noise measurement that expresses the loudness in terms of decibels (dB) weighted by frequency for human sensitivity to sound (A).

$L_{(A)90}$ – A-weighted sound pressure level exceeded for 90 % of the measured time; defined as 'background noise level'.

$L_{(A)eq}$ – equivalent continuous A-weighted sound pressure level over a given period of time; defined as 'average noise level'.

$L_{(A)max}$ – equivalent maximum A-weighted sound pressure level over a given period of time; defined as 'maximum sound level'.

$L_{(A)10}$ – A-weighted sound pressure level exceeded for 10 % of the measured time; a measure frequently referred to relating to traffic noise.

3. THE ASSESSMENT

3.1 The assessment comprised:

- The selection of suitable noise monitoring stations, reasonably representative of the exposure of the proposed receptors.
- The installation of the noise monitoring apparatus for suitable monitoring periods.
- Additional short-term noise monitoring around the site.
- General observations of factors affecting noise around the site.
- A review of the results of the monitoring.
- Recommendations regarding noise attenuation options, where indicated.

3.2 The continuous monitoring was carried out at the sites between Tuesday 4 March and Monday 10 March 2025. Noise levels at the site during the monitoring were considered to be reasonably representative of the ambient noise climate currently at the site, mostly comprising occasional aeroplanes

passing along the Gatwick flight path and activity at the neighbouring dog kennels.

3.3 Continuous noise monitoring was carried out at the eastern boundary of the field, with the microphone 3 m above the ground (on the roof of the shipping container/office), with a line of sight to the neighbouring properties at 2 Hilltop Cottages and Bulldog Holidays, Hillplace, at the approximate location of the northeastern corner of the proposed two/three-bedroom dwellings/apartments. Additional short-term noise monitoring was carried out at the north of the site, in the garden of 1 Hilltop Cottages at the approximate location of the proposed three-bedroom dwelling on Monday 10 March 2025, with an SLM monitor on a tripod 1.5 m above ground level at the approximate location of the northern facade of the proposed building and facing towards toward The Mount public highway. See Figure 3 in Appendix A for the Monitoring Locations.

3.4 The monitoring was carried out using a CEL (Casella) Type 490C Precision Sound Level Meter (SLM) and CEL-110/1 field calibrator (calibrated to national standards on 9 March 2024 – see certificates in Appendix B). The SLM was field calibrated before and after each monitoring session and no measurable drift was observed. Calibration readings before and after the monitoring sessions were all 113.9 dB.

4. RESULTS OF THE MONITORING

4.1 The location of the two/three-bedroom dwellings/apartments (in the field) is shielded from the adjacent farmhouse to the west by a mature hedge and from the dog kennels to the east by a barn building. The location of the three-bedroom dwelling is shielded from 2 Hilltop Cottages by the main house (1 Hilltop Cottages) and from Bulldog Holidays, Hillplace by a mature hedge. See Figure 4 in Appendix A for photographs of the neighbouring residences.

4.2 The sites were not impacted by adverse weather conditions during the continuous or short-term monitoring and the results are considered representative of the ambient noise levels at the site as existing. The SLM traces from the continuous noise monitoring are shown in Appendix C. The results of the continuous noise monitoring are summarised in Tables 4.1 and 4.2, and the results of the short-term monitoring are summarised in Table 4.3 below:

TABLE 4.1
AMBIENT DAYTIME NOISE LEVELS

Location		1			
Date		$L_{(A)eq}$ $dB_{(A)}$	$L_{(A)90}$ $dB_{(A)}$	$L_{(A)10}$ $dB_{(A)}$	$L_{(A)max}$ $dB_{(A)}$
Tuesday	04/03/25	50.4	34.2	53.3	70.8
Wednesday	05/03/25	54.3	37.1	59.0	70.9
Thursday	06/03/25	55.6	39.7	59.6	73.3
Friday	07/03/25	51.3	39.1	55.3	69.2
Saturday	08/03/25	47.0	39.5	50.4	63.7
Sunday	09/03/25	47.6	39.2	51.2	63.8
Monday	10/03/25	51.3	44.1	54.6	66.0

4.3 Professional Practice Guidance (ProPg): Planning & Noise Note 1 gives an initial noise risk assessment *risk of adverse effects* value in the range Negligible to High based on the daytime $L_{(A)eq\ 16hr}$ and night-time $L_{(A)eq\ 8hr}$ exposures recorded at a site. See Figure 5 in Appendix A for the risk of adverse side effects scale. From the results in Table 4.1 above and Table 4.2 below, the initial noise risk assessment value for the exposure at the sites is 'Low'. However, good acoustic design process should be followed for the construction of the proposed dwellings, in order to maintain the WHO and BS acceptable levels.

TABLE 4.2
AMBIENT NIGHT-TIME NOISE LEVELS

Location	1			
Date	$L_{(A)eq}$ $dB_{(A)}$	$L_{(A)90}$ $dB_{(A)}$	$L_{(A)10}$ $dB_{(A)}$	$L_{(A)max}$ $dB_{(A)}$
Tue/Wed 4/5 Mar 2025	35.2	29.6	36.1	51.3
Wed/Thu 5/6 Mar 2025	39.1	30.6	40.8	55.0
Thu/Fri 6/7 Mar 2025	40.9	32.0	44.2	58.7
Fri/Sat 7/8 Mar 2025	37.7	32.1	40.3	53.0
Sat/Sun 8/9 Mar 2025	40.0	32.1	42.4	56.2
Sun/Mon 9/10 Mar 2025	41.4	31.8	44.5	56.0

4.4 The traces from the continuous monitoring at monitoring location 1 are given in Appendix C and the monitoring locations are given in Figure 3 in Appendix A. See Table 4.3 below for the short-term monitoring results, location 2.

TABLE 4.3
ADDITIONAL SHORT-TERM NOISE MONITORING POSITION 2

MONITORING LOCATION	2			
PERIOD	10 March 2025 (15 Minutes)			
NOISE LEVELS $dB_{(A)}$	$L_{(A)eq}$	$L_{(A)90}$	$L_{(A)10}$	$L_{(A)max}$
	47.5	38.6	51.3	59.5
WEATHER	Dry and cold.			
PRINCIPAL NOISE SOURCES	Air traffic from Gatwick airport and noise from the adjacent dog kennels.			

5. INTERPRETATION OF THE RESULTS

5.1 The meteorological conditions at the sites throughout the continuous monitoring period were for the main part cold and dry with light winds at the start of the monitoring period. Throughout the short-term monitoring the meteorological conditions were generally cold and dry.

5.2 The results confirm that the sites are currently exposed to Low levels of noise, however some noise attenuation measures will be required in order to maintain the existing desirable internal noise levels for residential use. See Appendix C for the SLM traces.

6. NOISE IMPACT ASSESSMENT

6.1 Internal Noise Level Guidelines (Stage 2, Element 2)

6.1.1 The World Health Organisation (WHO) recommends no more than 30 $dB_{(A)}$ $L_{(A)eq}$ to permit restful sleep. The same night-time guideline is given in BS 8233:2014. Night-time is classed as 23:00 - 07:00 hours. The permitted maximum daytime internal $L_{(A)eq}$ is given as 35 $dB_{(A)}$ in the British Standard.

6.1.2 The average night-time $L_{(A)eq}$ was recorded as 49.05 $dB_{(A)}$. With the current noise levels, in order to meet these guidelines, the windows in the residences in the proposed dwellings facing towards the kennels will have to provide at least 15 $dB_{(A)}$ of attenuation in their design. The average $L_{(A)eq}$ daytime reading was 51.1 $dB_{(A)}$. The attenuation incorporated into the design of the buildings should allow for up to 17 $dB_{(A)}$ $L_{(A)eq}$. No special acoustic glazing would be required to achieve this as standard thermal double glazing should provide more than adequate attenuation.

6.1.3 Standard external rendered brick walls would provide at least 50 - 55 dB of noise attenuation BS 8233. The attenuation provided by a typical insulated roof structure is likely to be >35 $dB_{(A)}$. Standard thermal double-glazed windows should provide 35dB of attenuation. This will be enough to maintain the levels of noise in the area within the WHO acceptable levels.

6.1.4 Opening windows to permit cooling on hot nights will not result in internal noise levels exceeding the WHO and BS standards as an open window will only provide 12 - 15 $dB_{(A)}$ of attenuation. However, an open window would allow a 1 $dB_{(A)}$ exceedance of the WHO and BS standards. This is also the case with the existing neighbouring residences and the noise levels are not expected to increase significantly post-development.

6.1.5 The WHO guidance states that the number of individual night-time noise events ($L_{(A)max}$) exceeding 45 $dB_{(A)}$ within a bedroom should be limited. This is generally taken as not more than eight exceedances during a single night.

6.1.6 From the $L_{(A)max}$ trace for the night-time period (See Appendix C), taking into account the attenuation provided by an open window, it is apparent that $L_{(A)max}$ individual events that result in exceedance of 45 $dB_{(A)}$ were recorded on average less than eight times per night. This suggests that additional attenuation is not required in order to limit the number of internal exceedances of 45 $dB_{(A)}$ night-time noise events to less than eight.

6.2 External Noise Level Guidelines and Amenity Area Assessment (Stage 2 Element 3).

6.2.1 For external areas, the World Health Organisation (WHO) community noise guidelines suggest 55 $dB_{(A)}$ $L_{(A)eq}$ as the threshold for annoyance, with the BS

8233:2014 stating that noise which does not exceed 50 $dB_{(A)}$ $L_{(A)eq}$ to be "desirable". Levels of more than 55 $dB_{(A)}$ $L_{(A)eq}$ are likely to be exceeded very occasionally during the summer months in the proposed dwellings outdoor areas.

6.2.2 The side/east windows of the proposed three-bedroom residence in the garden, are in line of sight of Bulldog Holidays, Hillplace but are partly shielded by a mature hedge.

6.2.3 On the short-term monitoring, the highest peak ($L_{(A)max}$) noise level recorded was 64.5 $dB_{(A)}$ at location 2 (on the approximate location of the northern façade of the proposed three-bedroom dwelling) facing The Mount public highway. During the continuous monitoring the highest daytime peak was 81.7 $dB_{(A)}$. The highest night-time peak was 72.1 $dB_{(A)}$. This suggests that at a worse-case scenario some occasional daytime and night-time noise disruption may be heard through the standard double-glazed attenuation (35$dB_{(A)}$) that exceeded the WHO and BS standards of 30-35 $dB_{(A)}$.

6.2.4 The proposed dwellings are expected to produce some additional peaks when the outdoor areas are in use in fine weather. However, the existing houses and businesses using the outdoor area will be producing comparable peaks with the current arrangement. The levels of noise from the proposed dwellings are not expected to increase the ambient noise levels in the area when compared with the noise from the existing neighbouring houses and businesses; the noise levels at the site are likely to remain at similar levels pre and post construction.

6.3 The construction phase of the proposed redevelopment of the site will have some noise impacts. However, if construction work is restricted to normal business hours and good working practice employed, this should not be a significant concern with relation to noise impact on the neighbouring residents and commercial receptors. The Health and Safety Executive states *Use absorptive materials within the building to reduce reflected sound, e.g. open cell foam or mineral wool. Keep noisy machinery and processes away from quieter areas. Design the workflow to keep noisy machinery out of areas where people spend most of their time.*

7. CONCLUSIONS

7.1 The National Planning Policy Framework (NPPF) states that sustainable development should:

i. Avoid noise giving rise to significant adverse impacts on health and quality of life.

ii. Mitigate and reduce to a minimum, other adverse impact on health and quality of life arising from noise, including through the use of conditions attached to planning consents.

iii. Recognise that development will often create some noise and existing businesses, wanting to develop in continuance of their business, should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established.

iv. Identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value.

7.2 Due to the location of the proposed developments, whereby the eastern façade of the proposed two/three dwellings/apartments (in the field) are separated from The Mount Farmhouse to the west by a hedge and Bulldog Holiday, Hillplace by a barn and a hedge, the noise impact to the future residents is considered to be minimal. The proposed three-bedroom residence in the garden of the existing house is shielded from the kennels at Hillplace by a hedge and from the residents at 2 Hilltop Cottages by the existing house. The level of attenuation incorporated into the structure of the new buildings should be more than sufficient to mitigate any external noise to within WHO and BS acceptable levels.

7.3 There is already some air traffic noise at the sites from the Gatwick flight path and noise from the use of the existing adjacent dog kennels, as such the noise at the site is expected to only increase very minimally post development. The number of vehicles using the site is expected to increase slightly once the buildings are complete due to residents' vehicles at the dwellings.

7.4 Professional Practice Guidance (ProPg): Planning & Noise Note 1 *risk of adverse effects* rating for the site is Low. This indicates a requirement that some acoustic design process should be followed for residential land use at this site in order to maintain the tranquillity of the area.

7.5 In order to achieve the <30 $dB_{(A)}$ WHO night-time standard and <35 $dB_{(A)}$ BS daytime standard $L_{(A)eq}$ within the proposed residences, standard thermal double-glazing (which provides a minimum attenuation of 35 $dB_{(A)}$) and standard external rendered brick walls (which would provide at least 50 - 55 dB of noise attenuation BS 8233) will be recommended in the construction of the dwellings.

7.6 External noise levels less than the 55 $dB_{(A)}$ $L_{(A)eq}$ recommended as an annoyance threshold by WHO are likely to be achieved most of the time in the external areas of the residences. In the summer months when the outdoor areas at the dwellings will be used by the residents, as is currently the case with use by the residents at the existing properties, it is considered that the external noise levels will exceed 55 $dB_{(A)}$ $L_{(A)eq}$ very occasionally at the proposed dwellings.

7.7 The construction work relating to the proposed development of the sites, comprising the construction of a three-bedroom dwelling in the garden of the existing house and five two/three-bedroom apartments in the field to the south of the house, should not have significant adverse noise impacts on neighbouring

residential receptors as long as the construction work is restricted to normal business hours and good working practice is employed.

7.8 The evidence of this assessment is that, subject to implementing the mitigation and attenuation measures recommended above, the proposed residents should not experience any significant adverse impacts on health and quality of life.

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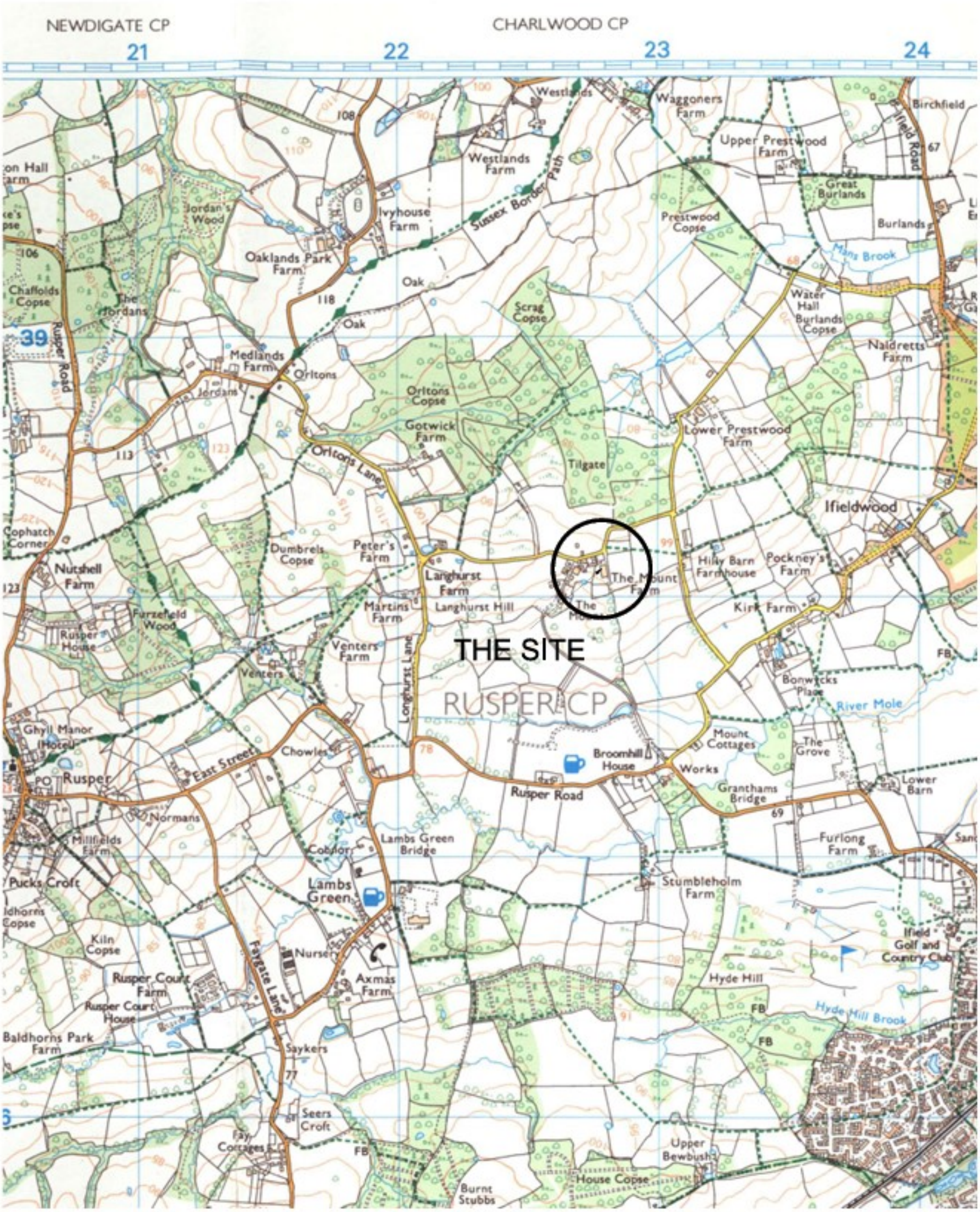
APPENDIX A

Figure 1: Site Location
Figure 2: Proposed Development
Figure 3: Red Line Boundary and Topographic Survey for the garden site
Figure 4: Red Line Boundary and Topographic Survey for the field site
Figure 5: Monitoring locations
Figure 6: Photographs
Figure 7: Pro Planning Risk of Adverse Side Effects Scale



Reproduced from the Ordnance Survey Explorer Map No. 135, Licence No. 100005508

Scale as shown

1 Hilltop Cottages

The Mount, Ifield, Crawley, RH11 0LF

Figure 1: Site Location

March 2025

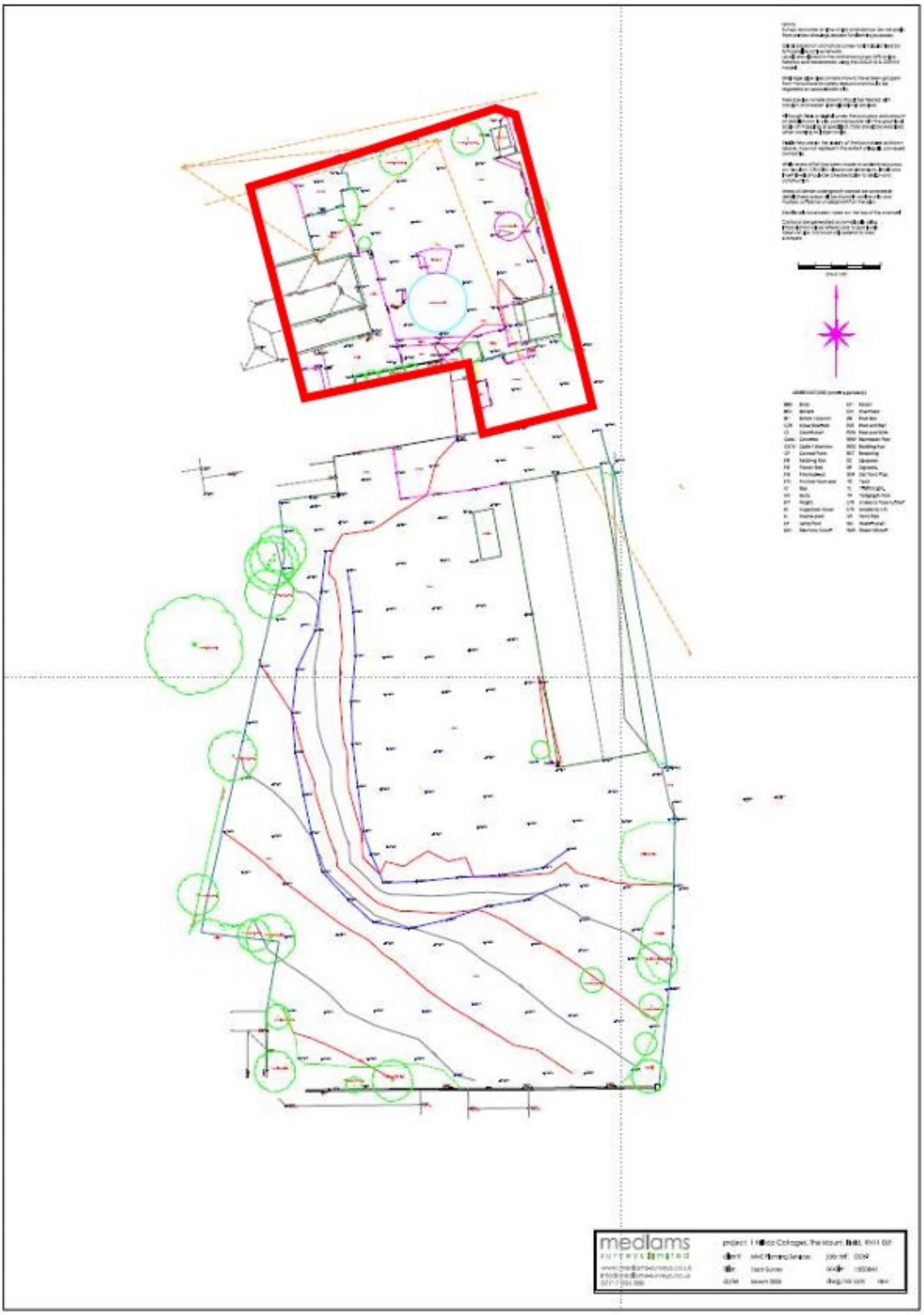
1 Hilltop Cottages

The Mount, Ifield, Crawley, RH11 0LF

Figure 2: Proposed Development

Scale as shown

March 2025



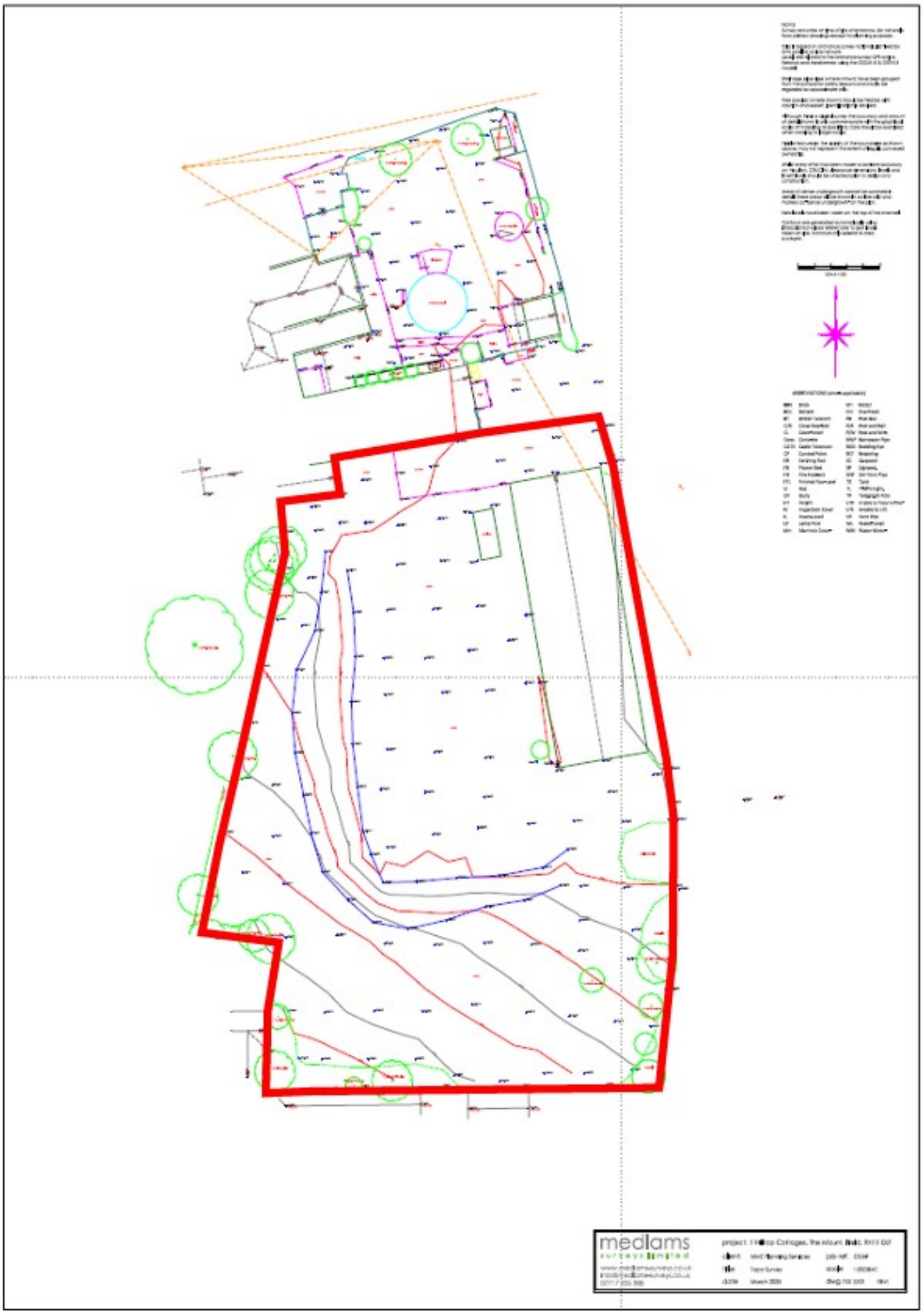
1 Hilltop Cottages

Scale as shown

The Mount, Ifield, Crawley, West Sussex, RH11 0LF

Figure 3: Red Line Boundary and Topographic Survey for the garden site

March 2025



1 Hilltop Cottages

Scale as shown

The Mount, Ifield, Crawley, West Sussex, RH11 0LF

Figure 4: Red Line Boundary and Topographic Survey for the filed site

March 2025

Scale as shown

1 Hilltop Cottages

The Mount, Ifield, Crawley, RH11 0LF

Figure 5: Monitoring Locations

March 2025

Figure 6: Photographs

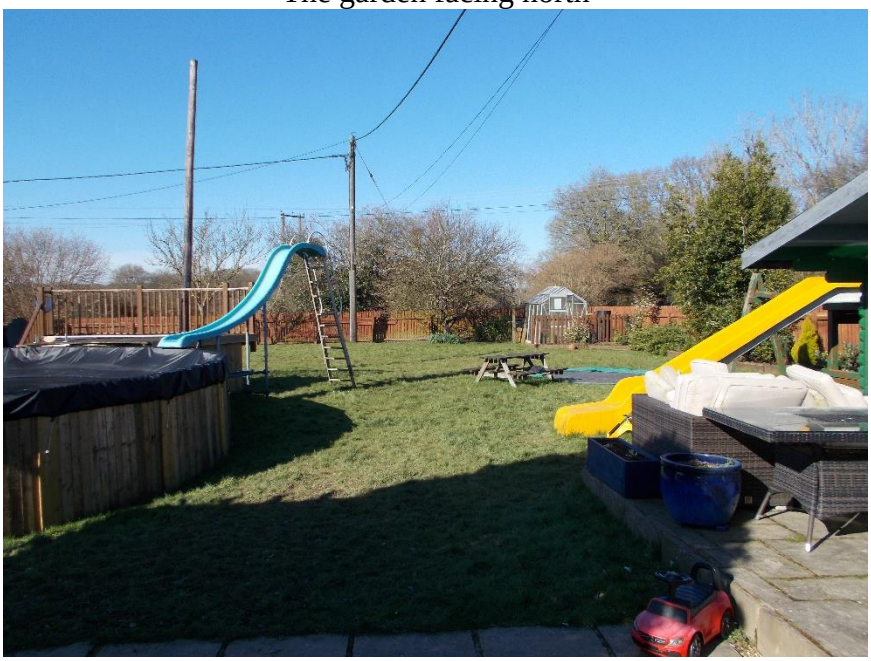
The field facing north towards the existing Hilltop Cottages

The field facing east towards the barn and dog kennels

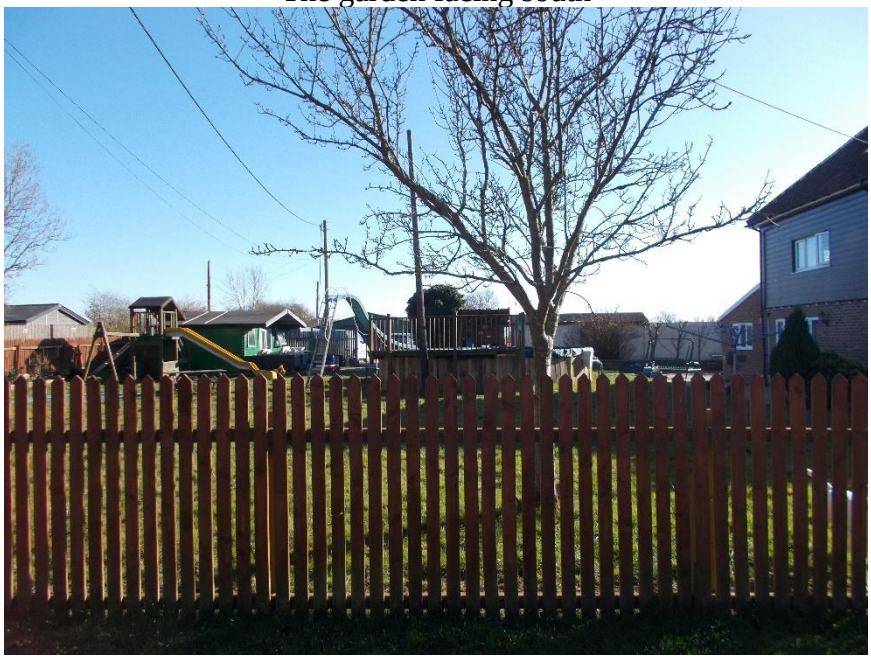
The field facing south towards the stables

The field facing west from towards The Mount Farmhouse

The garden facing north



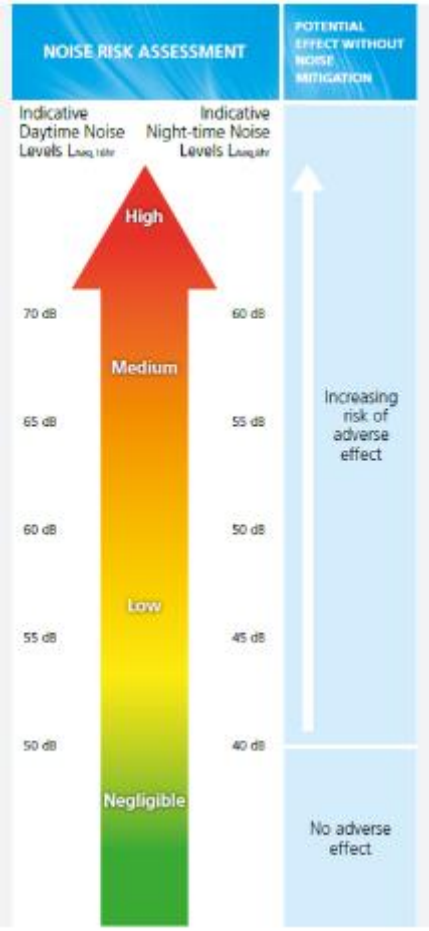
The garden facing south



Continuous monitoring location 1

Short-term monitoring location in the centre of the garden

Figure 7: Pro Planning Risk of Adverse Side Effects Scale



APPENDIX B
Noise Monitor Calibration Certificates

Acoustic Calibration Services Limited
Unit 6H Diamond Industrial Centre
Works Road Letchworth Garden City
Hertfordshire SG6 1LW
Tel: 01462 677 197 Mobile: 0771 886 4944
Email: trevjohnlewis@aol.com
or
cal@acousticcalibration.co.uk
web: www.acousticcalibration.co.uk

ACSL
Acoustic Calibration Services Limited

CERTIFICATE OF CALIBRATION

Model: Casella CEL-490·C1 **Serial Number:** 129580

Organisation: Environmental Assessment Services Ltd., Unit 4 The Courtyard Holmsted Farm, Cuckfield, West Sussex, RH17 5JT

Job Number: 2972 **Customer Order Reference:** SLM Calibration

The Sound Level Meter was assessed for conformance with International Standards IEC 60651 and IEC 60804 using test procedures described in BS 7580 Part 1. The meter claims Type 1 accuracy conformance and it was against these requirements that all the results were evaluated.

The sound level meter was fitted with a **GRAS 40AE** measurement microphone Serial No. **100742** and a **CEL-495** preamplifier Serial No. **001597**. The microphone was replaced with a suitable input device in order to apply electrical signals to the preamplifier.

A **Casella CEL-110/1** Acoustic Calibrator Serial No: **119427** was supplied with the meter and was utilised in establishing the initial acoustic calibration setting.

The sound level meter passed all applied tests with no deviations from Type 1 specification, in accordance with IEC 60651 and IEC 60804. Accordingly, the meter meets the requirements of BS 7580 Part 1.

The sound level meter should be set to read **113.8dB** when used with the associated acoustic calibrator, microphone and preamplifier, as detailed above at reference atmospheric pressure.

All ACSL's calibration instrumentation is fully traceable to National Standards. The acoustic references are calibrated by laboratories which are UKAS accredited for the purpose.

[redacted]

Certificate No: **16262**
Date of Issue: **19th March 2024**
Signature
Print Name: **Trevor Lewis**

Robert Lewis Accountants, Head Office: 4 Capricorn Centre Cranes Farm Road Basildon SS14 3JJ
Registered No: 4143457 VAT No: GB 770505441 Directors: Trevor J Lewis, G Parry BSc CPhys MInstP AMIOA, O R Clingan MIOA

Acoustic Calibration Services Limited
Unit 6H Diamond Industrial Centre
Works Road Letchworth Garden City
Hertfordshire SG6 1LW
Tel: 01462 677 197 Mobile: 0771 886 4944
Email: trevjohnlewis@aol.com
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cal@acousticcalibration.co.uk
web: www.acousticcalibration.co.uk

ACSL
Acoustic Calibration Services Limited

CERTIFICATE OF CALIBRATION

Model: Casella CEL-110/1 **Serial Number:** 119427

Organisation: Environmental Assessment Services Ltd., Unit 4 The Courtyard Holmsted Farm, Cuckfield, West Sussex, RH17 5JT

Job Number: 2972 **Customer Order Reference:** SLM Calibration

The acoustic calibrator was run for a period of time until a stable level was achieved. The output level was compared to the certified level of the laboratory measurement references. The calibrator was applied to the meter, removed, then reapplied to provide five separate readings, with the average value of these measurements recorded and certified.

The ambient temperature during calibration was **22.6** ± 1°C.
The barometric pressure was **101.0** to **101.1** kPa.
The relative humidity was **42** to **52** %

The sound pressure level output from the Acoustic Calibrator was measured in its half inch configuration using a B&K 4134 microphone. The mean level output of the acoustic calibrator was 114.0 dB at the reference setting and 94.1 dB at the -20dB setting.

The output frequency signal of the acoustic calibrator is 1000Hz.

All ACSL's calibration instrumentation is fully traceable to National Standards. The acoustic references are calibrated by laboratories which are UKAS accredited for the purpose.

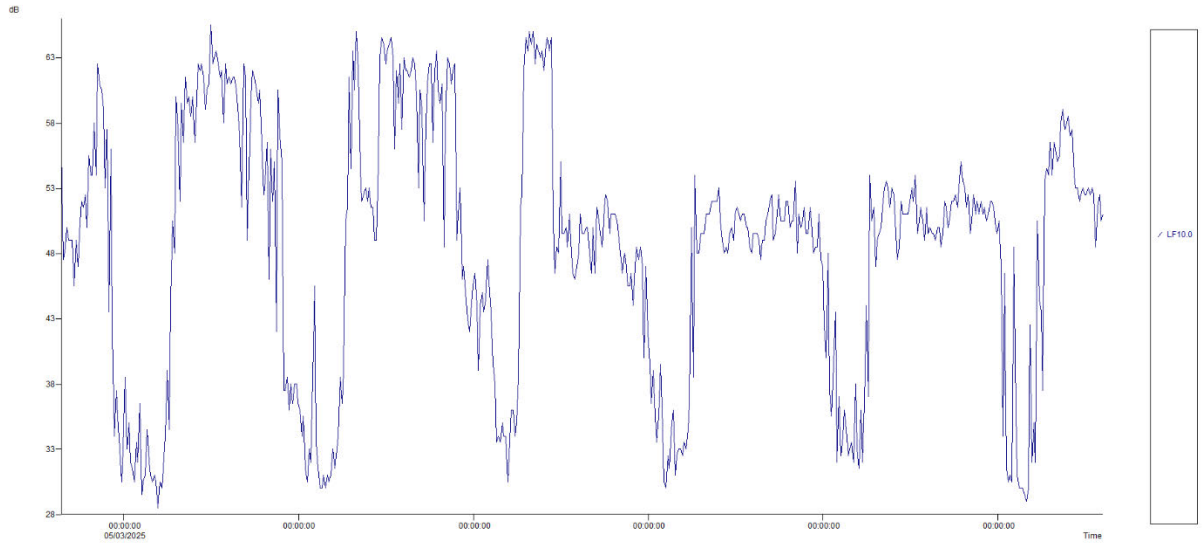
[redacted]

Certificate No: **16261** ***Signature:***
Date of Issue: **19th March 2024** ***Print Name:*** **Trevor Lewis**

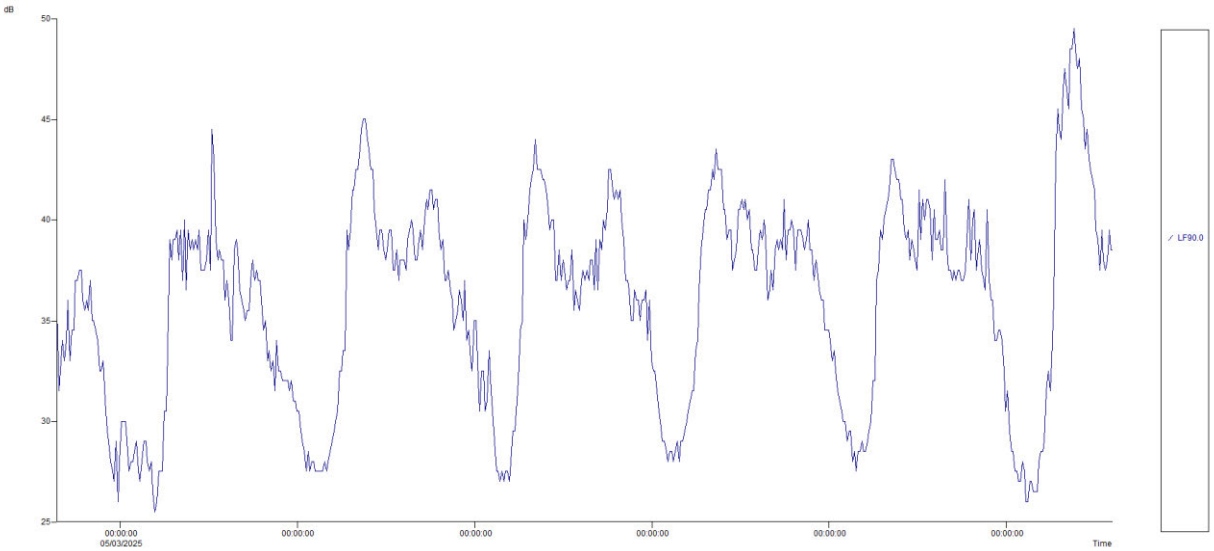
Robert Lewis Accountants, Head Office: 4 Capricorn Centre Cranes Farm Road Basildon SS14 3JJ
Registered No: 4143457 VAT No: GB 770505441 Directors: Trevor J Lewis, G Parry BSc CPhys MInstP AMIOA, O R Clingan MIOA

APPENDIX C
SLM Traces

LA10 Trace



LA90 Trace



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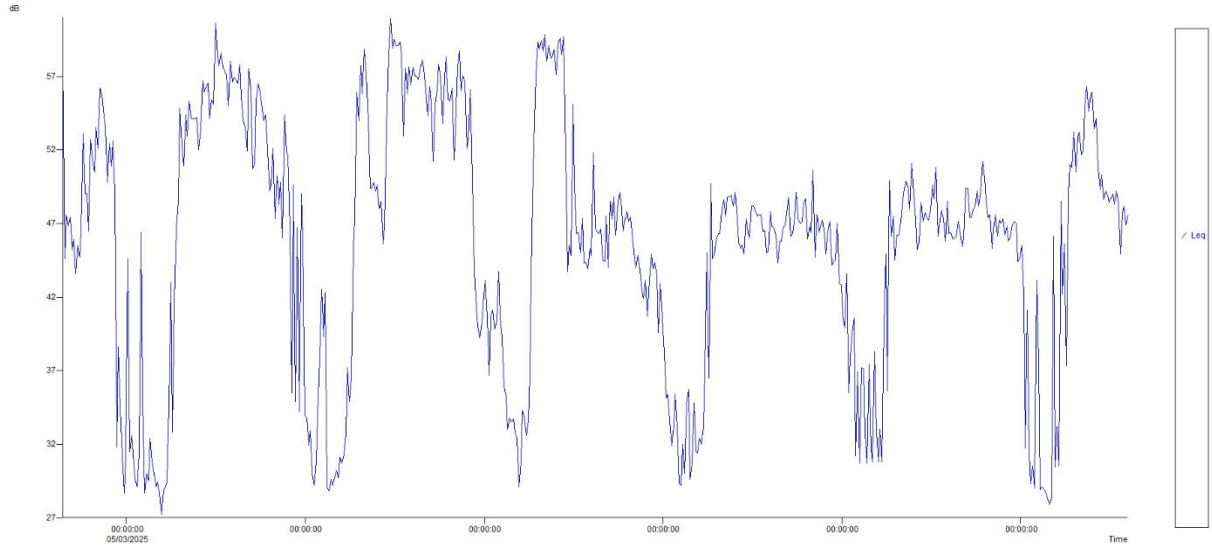
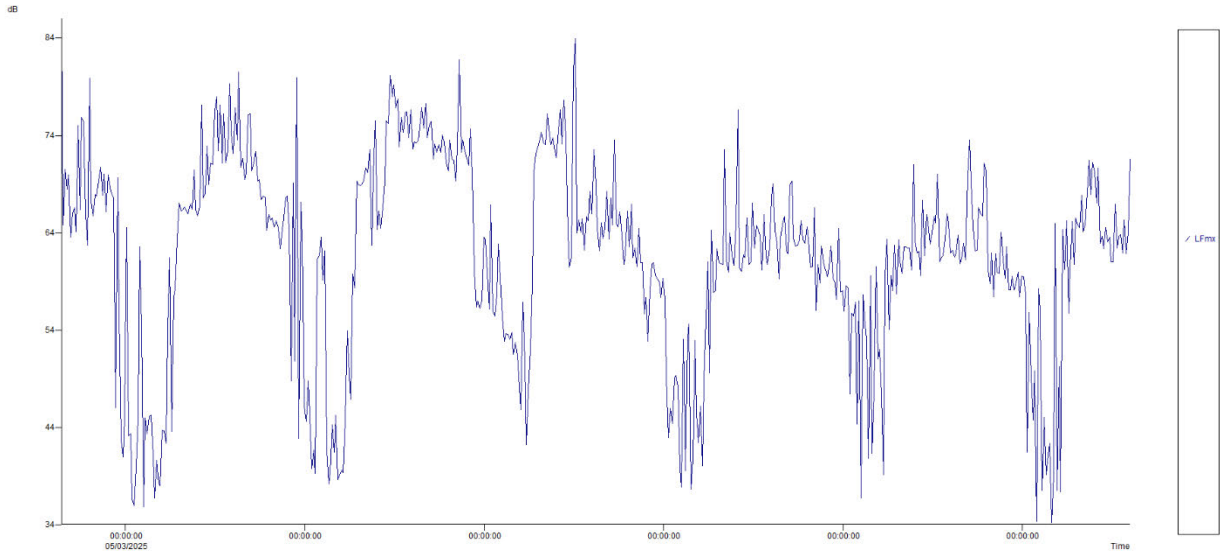
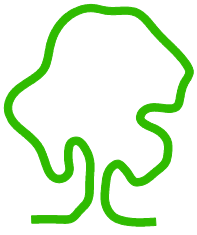


LAmax Trace





eas ltd
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web site : www.easltd.co.uk