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21 – 097 TODDINGTON LANE

# Noise Impact Assessment

MH Architects

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## Noise Impact Assessment


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# 1.0 INTRODUCTION

MACH has been appointed by MH Architects to undertake an environmental noise survey at the proposed Land at Toddington Lane development in Wick, Littlehampton. The proposals are for a residential development which includes 10 housing units with associated car parking, landscaping and community gardens.

The following aspects of acoustics design are therefore addressed within this report.

## 1.1 Noise Ingress

Achieving appropriate Indoor ambient noise levels within residential dwellings is an important consideration as noise can have a significant effect on the health and quality of life of individuals and communities where noise exposure can lead to a range of adverse effects including sleep disturbance, annoyance and health effects.

BS8233 is typically called upon during planning process, providing indoor ambient noise requirements within dwellings. However, this document does not provide a direct correlation between internal noise and ventilation rates. Within urban environments due to noise from transport infrastructure it is not possible meet the requirements of BS8233 with windows open whilst complying with the overheating criteria within CIBSE TM59. In light of this, in 2021 the government released Approved Document O – Overheating which provides increased internal noise limits within dwellings during overheating to those outlined within BS8233, with the aim being to promote natural ventilation, while maintaining suitable internal noise requirements.

This document therefore outlines the various internal noise requirements for the various ventilation rates which are discussed in the following section and provides façade specifications such to achieve these criteria.

## 1.2 External Noise - Amenity Noise

Providing external amenity space of a good standard is considered to be good design although not always achievable where development is necessary or desirable in noisy urban environments. This report therefore outlines external amenity noise targets and provides an assessment of these areas.

# 2.0 PERFORMANCE DOCUMENTS

## 2.1 Performance Specification

The following documents have been considered in the assessment of environmental noise.

| Assessment | Document | Summary |
|---|---|---|
| Planning Policy & Guidance | National Planning Policy Framework (NPPF) December 2023 | This sets out the UK government's planning policies for England and how these are seen to be applied. |
| | Noise Policy Statement for England (NPSE). | This aims to provide clarity on current policies and practices to enable noise management decisions to be made and applies to all forms of noise including environmental noise, neighbour noise and neighbourhood noise |
| Indoor Ambient Noise | BS8233:2014 | Provides Internal noise requirements for living rooms and bedrooms during the background ventilation condition |
| | WHO Guidelines for Community Noise | Provides maximum internal noise criteria to prevent sleep disturbance |
| | Approved Document O | Provides internal noise criteria during overheating during the night time |
| Amenity Noise | BS8233:2014 | Provides guidance on noise levels within outdoor amenity spaces |

**Table 2.1: Performance Standards**

## 2.2 Planning Policy

### 2.2.1 National Planning Policy Framework

The current National Planning Policy Framework (NPPF), December 2023, sets out the Government's planning policies for England.

With regards to noise impact, Paragraph 191 of the NPPF states the following:

"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 life60;

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; and

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation. "

Paragraph 193 goes on to state:

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.

### 2.2.2 Noise Policy Statement for England

The aim of the Noise Policy Statement for England (NPSE) is to provide clarity regarding current policies and practices to enable noise management decisions to be made within the wider context, at the most appropriate level, in a cost-effective manner and in a timely fashion. The NPSE applies to all forms of noise including environmental noise, neighbour noise and neighbourhood noise.

**Noise Policy Vision:** Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.

**Noise Policy Aims:** 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

**Observed Effect Level:** In order to fit an objective assessment of "significant adverse" and "adverse" impacts, the NPSE introduced the concept of categorising the impact from noise pollution into different observed effect level categories. This has been expanded further within the more recent document "National Planning Policy Guidance – Noise".

## 2.3 Indoor Ambient Noise Criteria

### 2.3.1 Ventilation Modes

The table below provides a summary of different ventilation 'conditions or modes' for bedroom and living spaces which have been adopted for this scheme. Note that there is a difference in definition between 'Purge' and 'Overheating' ventilation scenarios.

| Ventilation Condition | Description |
|---|---|
| Whole Dwelling / Background | Continuous low level flow rates to provide fresh air and remove smells. |
| Overheating | Potentially long periods of increased ventilation during the summer to maintain occupant thermal comfort. |
| Purge | Short periods of high flow rate ventilation to remove smoke or smells (e.g. from cooking or decorating). The acoustic impact of purge ventilation does not need to be considered as it will only occur over a short period of time. |

**Table 2.2: Ventilation Types**

### 2.3.2 BS8233

*BS8233:2014 - Guidance on sound insulation and noise reduction for buildings* provides guidance on internal noise levels within dwellings which is typically called upon in planning. BS8233 states that to achieve adequate sleeping and living conditions, the following targets should be met.

These targets are the sum of mechanical services and noise break in through the façade.

| Activity | Location | Day (07:00-23:00) | Night (23:00-07:00) |
|---|---|---|---|
| Resting | Living Room | 35 dB $L_{Aeq,\ 16\ Hour}$ | - |
| Dining | Dining Room | 40 dB $L_{Aeq,\ 16\ Hour}$ | - |
| Sleeping | Bedroom | 35 dB $L_{Aeq,\ 16\ Hour}$ | 30 dB $L_{Aeq,\ 8\ Hour}$ |

**Table 2.3: BS 8233 Internal Noise Limits**

Note 5 within BS8233 advises that 'If relying on closed windows to meet the guide values, there needs to be an appropriate alternative ventilation that does not compromise the façade insulation or the resulting noise level. If applicable, any room should have adequate ventilation (e.g. trickle ventilators should be open) during assessment.' It is therefore proposed that these internal noise targets will be achieved with windows closed and means of background ventilation enabled.

BS 8233:2014 provides no definitive methodology for assessment of $L_{Amax}$ levels. The WHO Community Noise Guidelines 1998 states that in order to avoid sleep disturbance within bedrooms during the night, the internal sound pressure level should not exceed 45 dB $L_{Amax}$. It is widely accepted that noise events should not exceed 45 dB $L_{Amax}$ more than 10-15 times during the night-time period (23:00 – 07:00).

### 2.3.3 Approved Document O

Approved Document O was released on December 15th 2021, and outlines a set of performance criteria for mitigating overheating in residential accommodation. In addition to overheating criteria, the document also outlines a requirement for internal noise levels, if noise has been considered by the local planning authority.

Guidance is provided to minimise the risk of occupants closing windows (and thus overheating) by ensuring that noise levels are below a certain threshold during night-time periods. Approved Document O therefore addresses internal noise levels within bedrooms at night time only. These internal noise criteria, based upon a natural ventilation scheme are outlined in the Table 2.4 below.

**Note:** If the overheating ventilation scheme is to be via mechanical cooling, the internal noise criteria within BS8233:2014 is the default design criteria.

| Location | Time | Maximum Internal Noise Level |
|---|---|---|
| Bedroom | 23:00 – 07:00 | 40 dB $L_{Aeq,\ 8\ Hour}$<br>55 dB $L_{AfMax}$ * |
| * Not to be exceeded more than 10 times a night | | |

**Table 2.4: Approved Document O Acoustic Criteria**

## 2.4 External Noise – Amenity

### 2.4.1 BS8233

BS8233 states, for traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments.

# 3.0 DESIGN CRITERIA

This section provides a summary of the acoustic performance criteria which have been adopted for this project.

## 3.1 Summary of Indoor Ambient Noise Level Requirements

The table below provides a summary of the indoor ambient noise level requirements for residential dwellings. The table includes criteria for the various ventilation mode types of spaces. Please also note that there is a difference in definition between 'Purge' and 'Overheating' ventilation scenarios.

| Ventilation Condition | Description | Acoustic Performance Criteria |
|---|---|---|
| Whole Dwelling / Background | Continuous low level flow rates to provide fresh air and remove smells. | • Living Rooms – 35dB $L_{Aeq,16hr}$ (Day time)<br>• Bedrooms – 35dB $L_{Aeq,16hr}$ (Day time)<br>• Bedrooms – 30dB $L_{Aeq,8hr}$ (Night time)<br>• Bedrooms – 45dB $L_{Afmax}$ (Night time) |
| Overheating | Potentially long periods of increased ventilation during the summer to maintain occupant thermal comfort. The night time acoustic design criteria for bedrooms can be relaxed if naturally ventilated. | • Bedrooms – 40dB $L_{Aeq,8hr}$ (Night time)<br>• Bedrooms – 55dB $L_{Afmax}$ (Night time) |
| Purge | Short periods of high flow rate ventilation to remove smoke or smells (e.g., from cooking or decorating). The acoustic impact of purge ventilation does not need to be considered as it will only occur over a short period of time. | • None |

**Table 3.1: Summary of indoor ambient noise criteria**

## 3.2 Summary of Amenity Noise Level Criteria

As discussed within Section 2.4, where feasible, good acoustic design principles will be adopted in order to achieve lowest practicable levels and ideally provide outdoor amenity which is ≤55dB $L_{Aeq,16hr}$.

# 4.0 NOISE CLIMATE

To establish the existing environmental noise levels on site, a noise survey was conducted between 13:25 on the 22/07/2024 and 12:05 on the 23/07/2024. For more information on the methodology of this survey, site information and survey data, see APPENDIX A - Environmental Noise Survey

## 4.1 Site Description

The site is located at Scaffold House, Toddington Ln, Wick, Littlehampton and is situated in a suburb area near a connecting rail line to 'Angmering' train station. Local business 'Roundstone scrap car and MOT' is in proximity of the site.

## 4.2 Site Map

The site in relation to its surroundings and nearest noise sensitive receivers is presented in Figure 4.1.


**Figure 4.1 - Proposed Development (Red) and Nearest Noise Sensitive Receivers (Blue)**

## 4.3 Summary of Noise Survey Results

The tables below present the noise parameters recorded at the fixed microphone position for the ambient ($L_{Aeq}$) and maximum ($L_{Amax}$) noise levels. The $L_{Aeq}$ figures presented are the average noise levels during the stated times across the days of the survey, excluding non-representative noise. The $L_{Amax}$ figures presented are the 10th highest measured between 23:00-07:00.

| Date | Location | Period, T | $L_{Aeq,T}$ (dB) | $L_{Amax}$ (dB) |
|---|---|---|---|---|
| 22/07/2024 - 23/07/2024 | Fixed Position 1 | Day (07:00 – 23:00) | 49 | - |
| | | Night (23:00 – 07:00) | 43 | 60 |

**Table 4.1 Summary of $L_{Aeq,T}$ and $L_{Amax}$**

## 4.4 Site Plan Proposals


**Figure 4.2 - Proposed Development**

# 5.0 FAÇADE ASSESSMENT

This section provides details of the various façade assessments for the ventilation conditions outlined within Table 2.2 previously.

## 5.1 Façade Noise Levels

As shown in Section 4.3, Table 4.1 outlines the ambient ($L_{Aeq}$) and maximum ($L_{Amax}$) noise levels at the fixed measurement position. These are deemed to be representative of the predicted façade noise levels and will be used in the following sections.

## 5.2 Background Ventilation

This section provides details of the façade assessment during the background ventilation condition such to comply with the BS8233, internal noise criteria during background ventilation as defined within Approved Document F.

Background ventilation conditions are normally achieved through either trickle ventilators in the façade or provided by a whole house ventilation system, as long as one of these methods are employed, the noise level criteria set out within BS8233:2014 are to be achieve while windows are closed.

### 5.2.1 Dominant Noise Period During Background Ventilation

Based upon the predicted facade noise levels for each of the different acoustic parameters, the noise levels and parameters which will influence the design with regard to background ventilation have been identified below.

| Time Period | Predicted Sound Pressure Level, dB(A) | Target | Façade Reduction |
|---|---|---|---|
| $L_{Aeq,16hr}$ (Day time) | 49 | 35 | 14 |
| $L_{Aeq,8hr}$ (Night time) | 43 | 30 | 13 |
| $L_{Afmax}$ (Night time) | 60 | 45 | 15 |

**Table 5.1: Façade Noise Levels**

Based on the above noise levels and the select design criteria outlined in Section 3.1, it is observed that a façade reduction of 15 dB is required for the most onerous scenario.

The table below presents the octave band sound pressure level on the façade for the identified most onerous assessment time period and parameter with regard to background ventilation scenario.

| Time Period | Sound Pressure Level, dB (Octave Band Centre Frequency, Hz) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 125 | 250 | 500 | 1000 | 2000 | 4000 | dB(A) |
| $L_{Afmax}$ (Night time) | 56 | 53 | 53 | 57 | 52 | 48 | **60** |

**Table 5.2: Spectral Façade Noise Levels**

### 5.2.2 Façade Specification

The table below provide the minimum sound reduction indices to meet the BS8233 internal noise level requirements. Note that the values presented are representative of the entire window including frames and other elements. The acoustic performance of the chosen systems should be verified via a laboratory test certificate.

MACH has not provided specific build-ups for the façade or roof, such that there can be flexibility in the design of the new build aspects of the scheme.

| Façade Element | Minimum Required Sound Reduction Indices | | | | | | |
|---|---|---|---|---|---|---|---|
| | 125 | 250 | 500 | 1000 | 2000 | 4000 | Weighted – dB |
| Window | 21 | 17 | 25 | 35 | 37 | 31 | **29 $R_w$** |
| Solid Façade | 27 | 31 | 39 | 45 | 50 | 55 | **43 $R_w$** |
| Ventilator (Combined) | 40 | 36 | 35 | 31 | 32 | 37 | **32 $D_{new}$** |

**Table 5.3: Minimum Façade Reduction Indices Required for Residential Façades**

#### 5.2.2.1 Background Ventilators

Ventilators used for background ventilation, such as trickle ventilators or whole house ventilation systems must achieve the acoustic performance specified as a combined performance per room. This is to mitigate against external noise transmitting through the trickle ventilator or through the ventilation system into a single room.

The number of openings or number of trickle vents must be accounted for. For example; if there are to be 2 No. Trickle/ vents to be used within a bedroom the above performance specification per unit would increase by 3dB.

To calculate this increase the following formula should be used;

Dne (per unit ) = Dne (combined) + 10log10(N)

Where; N is the number of ventilators proposed per room, and Dne, the relevant spectral value.

If the above is unclear, MACH will be happy to explain how the performance specification changes dependant to the number of ventilators required per room for this project.

## 5.3 Overheating Ventilation

This section provides details of the façade assessment during the overheating ventilation condition such to comply with the internal noise criteria during overheating ventilation as required by Approved Document O. It is important to note that this assessment addresses internal noise levels only within bedrooms during night time, assuming the overheating ventilation strategy is based on a natural ventilation scheme.

**Note:** If the overheating ventilation scheme is to be via mechanical cooling, the internal noise criteria within BS8233:2014 is the default design criteria.

### 5.3.1 Ventilation Strategies Acoustic Performance

The acoustic performance of open windows and other natural ventilation options can vary significantly, reasonable estimates of the acoustic performance of different mitigation strategies of the ventilation method are presented below.

| Ventilation Strategy | Room | Outside to Inside Level Difference |
|---|---|---|
| Openable windows | Bedroom | **13** |
| Restricted openable windows[1] | Bedroom | **20** |
| Acoustic attenuators / mechanical ventilation[2] | Bedroom | **27** |

**Table 5.4: Ventilation Strategies Depending on Façade Attenuation Required**

[1]**Note:** restricted openable windows as a ventilation option would require further detailed design looks holistically across the site, this would need to consider the building massing, type and direction of window openings, etc.

[2]**Note:** acoustic attenuators have a performance limit. Where an inside level difference greater than 27 dB is required, mechanical ventilation is seen as the suitable ventilation strategy.

### 5.3.2 Outline Façade Noise Limits

The table below helps identify when the external noise level associated with this development are too high for each ventilation method. This is determined by simply adding the outline potential acoustic performance of the ventilation method, to the internal noise level criteria.

| Ventilation Strategy | Outside to Inside Level Difference (dB) | Internal Noise Criteria | | Façade Noise Level Limit | | Measured Façade Noise Level | |
|---|---|---|---|---|---|---|---|
| | | $L_{Aeq,8hr}$ (dB) | $L_{Afmax}$ (dB) | $L_{Aeq,8hr}$ (dB) | $L_{Afmax}$ (dB) | $L_{Aeq,8hr}$ (dB) | $L_{Afmax}$ (dB) |
| Openable windows | 13 | 40 | 55 | **53** | **68** | **43** | **60** |
| Restricted openable windows | 20 | 40 | 55 | **60** | **75** | **43** | **60** |
| Acoustic attenuators / mech ventilation | 27 | 40 | 55 | **67** | **82** | **43** | **60** |

**Table 5.5: Façade Noise Level Limit for Exposure Category**

Based on the above established façade noise limits, MACH has determined likely acceptable ventilation strategies for the scheme.

As shown in Section 4.3, Table 4.1 outlines the ambient ($L_{Aeq}$) and maximum ($L_{Amax}$) noise levels at the fixed measurement position. Since the predicted façade noise levels at night time are 43 dB $L_{Aeq,8hr}$ and 60 $L_{Amax,}$ it can be seen both values fall below the façade noise level limits of 53 dB $L_{Aeq,8hr}$ and 68 $L_{Amax}$. Therefore, site noise levels have been found to be sufficiently low, allowing for natural ventilation through openable windows for all spaces on the site.

# 6.0 OUTDOOR AMENITY

## 6.1 Predicted impact

Table 4.1 outlines the ambient ($L_{Aeq}$) noise levels recorded at the fixed measurement position. Based on these measurements, the noise level of 49 dB $L_{Aeq,T}$ is predicted to impact the proposed site during the daytime.

It can be observed this value complies with the desirable noise level of 50 dB $L_{Aeq,T}$ as outlined in BS8233. By adhering to the standard, proposals ensure to provide future residents with an appropriate space intended to be used for relaxation.

# 7.0 NOISE BREAK-OUT ASSESSMENT

## 7.1 Criteria

BS 4142:2014 "Methods for rating and assessing industrial and commercial sound" describes a method of determining the level of noise of an industrial nature, together with the procedures for assessing whether the noise in question is likely to give rise to complaints from persons living in the vicinity. As such, an assessment to BS 4142 is typically called for within planning conditions.

The likelihood of complaints in response to a noise depends on various factors. BS 4142 assesses the likelihood of complaints by considering the margin by which the noise in question exceeds the background noise level.

## 7.2 Design Target

It is currently unknown whether the local authority has specific plant noise limits; therefore, the plant noise rating level limits at the nearest noise sensitive receptor will be set at a later date in accordance with any planning conditions set for this development by the local authority.

This will be assessed against the existing background noise levels, $L_{A90}$. For the purposes of assessment, MACH Acoustics has used the **typical** daytime and night-time background noise level.

| Position | Time Period | Assessed Background Noise Level (dB $L_{A90}$) |
|---|---|---|
| Fixed | Daytime (07:00 - 23:00) | 44 |
| | Night-Time (23:00 - 07:00) | 34 |

**Table 7.1: $L_{A90}$ Background Noise Levels for Plant Noise Break-out Assessment**

# 8.0 CONCLUSION

In summary the following points set out the conclusions of this report;

### Noise Survey

- A noise survey has been conducted at the proposed site to establish the existing noise climate. These noise levels are presented in Section 4.0 of this report and the details of the noise survey itself are included in APPENDIX A -

### Design Criteria

- MACH has proposed a set of design criteria, which is considered appropriate for the planning stage, which has been provided in Section 3.0.
- Three assessments have been considered;
    - Internal noise levels during the background ventilation condition.
    - Internal noise levels during the night time during overheating condition, if naturally ventilated. This is a requirement of Part O Building Regulations.
    - External noise levels within outdoor amenity areas, e.g. gardens.

### Assessment – Background Ventilation

- The background ventilation assessment in section 5.2 outlines minimum sound reduction indices required for the façade elements such to comply with the established internal noise criteria.

### Assessment – Overheating Ventilation

- Such to comply with Part O of the Building Regulations, the feasibility assessment of different ventilation strategies during an overheating scenario indicates that natural ventilation through openable windows is feasible for all spaces on site.

### Assessment – Outdoor Amenity

- The outdoor amenity assessment shows the proposed garden spaces comply with the desirable noise level of 50 dB $L_{Aeq,T}$ as outlined in BS8233.

### Assessment – Noise Breakout

- Appropriate background noise levels have been determined in Section 7.2 to be able to set noise limits at a later date for building services plant to protect neighbouring noise sensitive receptors.

# APPENDIX A - ENVIRONMENTAL NOISE SURVEY

To establish the existing environmental noise levels on site, a noise survey was conducted between 13:25 on the 22/07/2024 and 12:05 on the 23/07/2024.

This site assessment was undertaken by Sam Hawthorn of MACH Group.

## A.1 Site Description

The site is located at Scaffold House, Toddington Ln, Wick, Littlehampton and is situated in a suburb area near a connecting rail line to 'Angmering' train station. Local business 'Roundstone scrap car and MOT' is in proximity of the site.

### A.1.1 Subjective Noise Climate (On-site)

| Noise Type | Noise Characteristics | Sources |
|---|---|---|
| Dominant | A primary contributor of noise levels on the site. | Angmering railway line.<br>Round stone scrap car and MOT. |
| Other Noise Contributions | Contributors to the remainder of the noise climate on site. | Residential housing<br>Toddington Ln Road. |

**Table A.1.1 Subjective Summary of the Noise Sources**

### A.1.2 Non-Representative Noise Sources

During the survey, no noise events occurred which would be deemed as atypical of the site location.

## A.2 All Measurement Locations

To help with the understanding of the site and measurement locations all the measurement positions are presented on the map below. Photos of the locations in situ are in the following sections.


**Figure A.2.1 All Measurement Locations on a Map**

## A.3 Fixed Measurement

A fixed microphone position was used to record noise levels between 13:25 on the 22/07/2024 and 12:05 on the 23/07/2024, where the fixed long-term meter was set to measure consecutive 'A' weighted 5-minute time samples. Measurements have been taken in free field conditions

To help with the understanding of the site and the measurement locations, the figures below present the location of the microphone position(s) in situ.

### A.3.1 Fixed measurement Location – F1

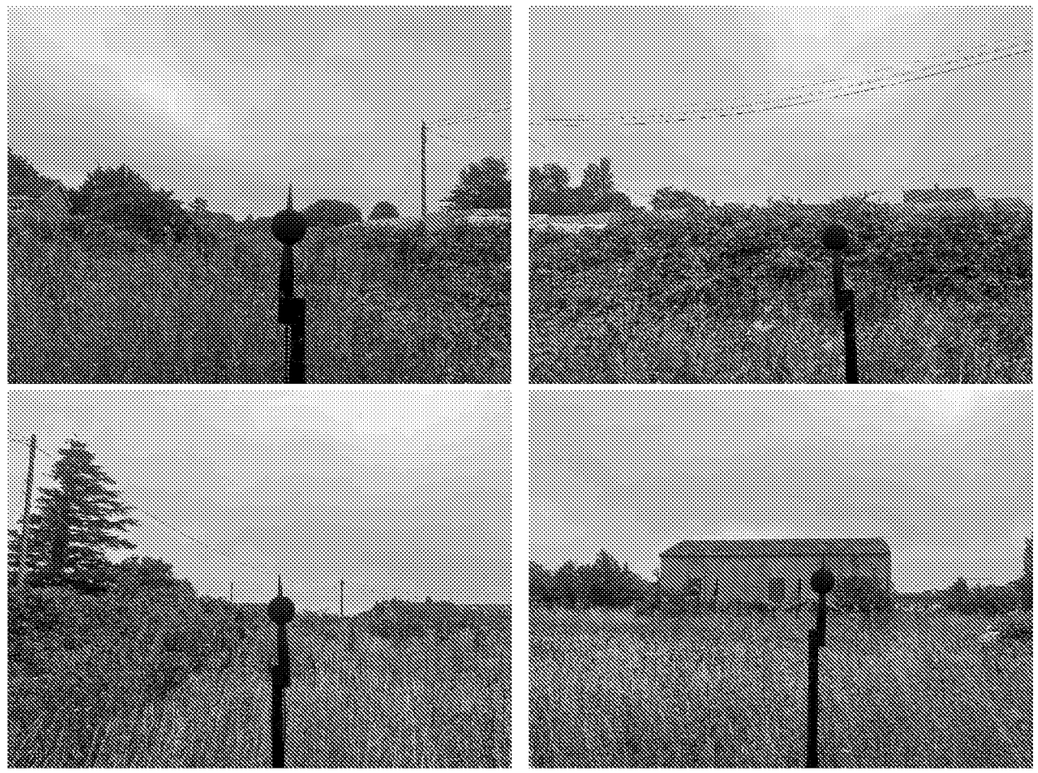

**Figure A.3.2 Fixed measurement location in situ**

### A.3.2 Fixed Measurement Results

The following graph presents the noise levels recorded over the measurement period at the fixed location (F1).

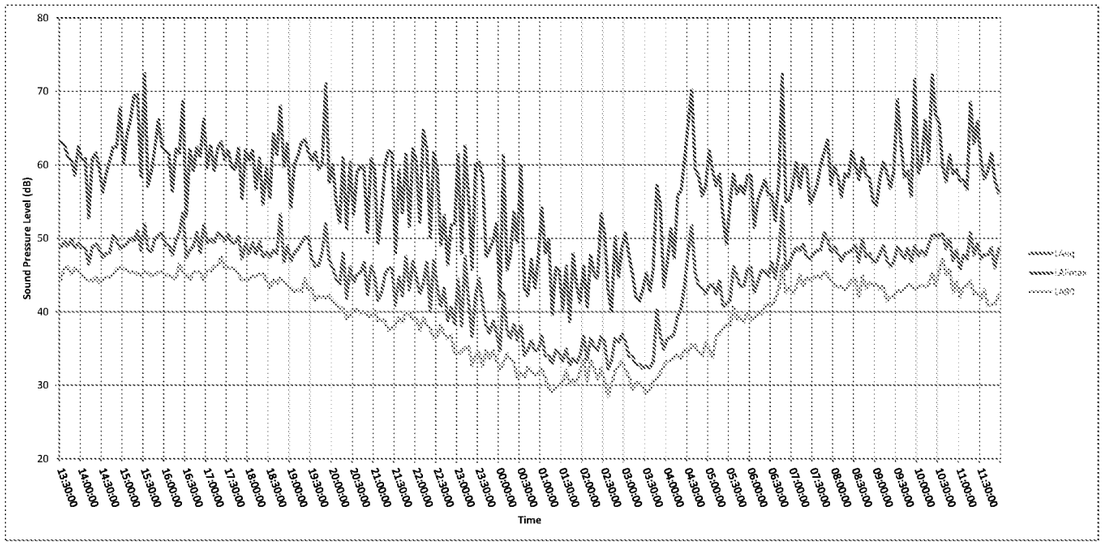


**Figure A.3.3 Sound Pressure Level at fixed location, F1**

## A.4 Measurement Equipment

| Item | Serial No. | Last Calibration | Certificate No. | Calibration Due |
|---|---|---|---|---|
| NTI Precision Sound Analyser XL2 TA | A2A-18713-E0 | 13/04/2023 | 190661 | 13/04/2025 |
| NTI Pre-amplifier MA220 | 9517 | 13/04/2023 | 190661 | 13/04/2025 |
| NTI Microphone Capsule MC230A | A19763 | 11/04/2023 | 190545 | 11/04/2025 |
| Svantek Acoustic Calibrator SV33A | 64140 | 13/12/2023 | 204757 | 13/12/2024 |

**Table A.4.2 Measurement Equipment**

## A.5 Meteorological Conditions

Data Taken from: https://www.timeanddate.com/weather/

| Date | Time (hh:mm) | Temperature (High / Low) (°C) | Humidity (%) | Pressure (hPa) | Wind Speed (m/s) | Wind Direction | Conditions |
|---|---|---|---|---|---|---|---|
| 22/07/2024 | 12:00 | 21/18 | 83 | 1016 | 5.8 | SSW | Partly sunny |
| | 18:00 | 20/18 | 83 | 1016 | 4.2 | SSW | Passing clouds |
| 23/07/2024 | 00:00 | 18/17 | 95 | 1015 | 3.1 | SW | Passing clouds |
| | 06:00 | 18/16 | 86 | 1016 | 4.7 | WSW | Partly sunny |
| | 12:00 | 23/18 | 72 | 1020 | 3.6 | WNW | Passing clouds |

**Table A.5.3 Meteorological Conditions**