

The Wonderful Barn

Acoustic Design Statement
31 May 2024

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Executive Summary

Wave Dynamics were engaged by Kildare County Council to undertake a planning stage Inward Noise Impact Assessment for the redevelopment of The Wonderful Barn, Celbridge Rd, Barnhall, Leixlip, Co. Kildare.

The proposed redevelopment of The Wonderful Barn comprises an area of c.19.8ha and incorporates the protected structure of the Wonderful Barn and its ancillary buildings, all protected structures, including Barnhall House, two dovecotes, a walled garden and two ranges of adjacent courtyards containing former farm buildings and the public parklands enclosed by the M4 motorway to the South, Celbridge Road R404 to the East and suburban residential developments to the North and West.

The proposed works will protect and enhance the architectural heritage and amenity of the Wonderful Barn and adjacent buildings and provide an integrated public amenity park and tourism destination at The Wonderful Barn and associated lands, informed by a detailed conservation and management plan.

The dominant noise source at the development location is from the M4 motorway with intermittent light aircraft noise. The proposed Parkland is compromised by L_{den} noise levels (at 4m height) ranging >75 dB nearest motorway to 65dB towards the northern boundary. The site should be made suitable for its intended recreational /commercial/ community activities, within the historic and architectural constraints and legacy location of the site beside a motorway.

Noise Impact Assessment

A Stage 1 and Stage 2 ProPG assessment has been undertaken. As part of the stage one assessment to categorise the site a baseline noise survey was undertaken to measure the existing noise levels. Following a review of the noise levels on the site including the L_{AFmax} and L_{Aeq} the site has been characterised as high to medium risk.

Internal Noise Levels

Following the baseline survey, a noise impact assessment was undertaken, this included break-in noise calculations to predict the internal noise levels from road traffic on the M4 Motorway. Consideration has also been given to the future growth of the roads. Following the assessment, the building envelope performance requirements were determined. The performance specification for the building envelope has been provided in this report which includes the external walls, glazing, roof and ventilation requirements.

External Amenity Noise Levels

The assessment has also considered the external amenity noise levels for future patrons of The Wonderful Barn in accordance with ProPG 2017 and BS 8233:2014. There are a number of external amenity spaces for patrons across the development, including two large amenity courtyards to the north of the Wonderful Barn buildings which are predicted to achieve the desirable external amenity levels without mitigation.

There are also large amenity spaces along the southern boundary of the site which are predicted to have noise levels exceeding the desirable level. Mitigation has been recommended in the form of a 3m high noise wall to significantly reduce the contribution of the M4 motorway to the external amenity noise levels at these amenity spaces. A reduction of up to 10dB is predicted along the southern boundary of the site. This is in line with BS 8233 guidance and ProPG.

Façade Noise Levels

The onset façade noise levels in terms of L_{den} meet the Kildare County Council requirements without any additional mitigation when considering each floor level.

Based on the recommendations in this report it is predicted that the internal and external noise levels will achieve the targeted internal noise levels in line with BS 82233:2014 and ProPG 2017 guidance. The onset façade noise level requirements in terms of L_{den} are achieved without any additional mitigation.

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1 Introduction

Wave Dynamics were engaged by Kildare County Council as the acoustic consultants to undertake an Inward Noise Impact Assessment for the change of use and reconfiguration of The Wonderful Barn, Celbridge Rd, Barnhall, Leixlip, Co. Kildare.

The proposed Redevelopment of The Wonderful Barn comprises an area of c.19.8ha and incorporates the protected structure of the Wonderful Barn and its ancillary buildings, all protected structures, including Barnhall House, two dovecotes, a walled garden and two ranges of adjacent courtyards containing former farm buildings and the public parklands enclosed by the M4 motorway to the South, Celbridge Road R404 to the East and suburban residential developments to the North and West.

The proposed redevelopment of “The Wonderful Barn” aims to restore the existing structures on the site, including one house, one barn, two dovecotes, a walled garden and two adjacent courtyards containing two stable buildings (all protected structures – RPS no. B11-15). The proposed works will protect and enhance the architectural heritage and amenity of the site and provide an integrated public amenity park and tourism destination at the Wonderful Barn and associated lands, informed by a detailed conservation plan. The project is aimed at fostering community engagement, provision of diverse recreational and cultural amenities and to attract tourism to the site.

The proposed redevelopment includes:

A) Conservation-led restoration and reuse of the existing building complex including:

- The barn (corkscrew-shaped conical tower), reuse of ground floor as community/cultural space, reuse of upper floors within confines of limited access for other use. Conversion of existing ‘potato house’ to toilets / first floor add-on general storage area.
- The house, including demolition of small quantum of existing fabric to reinstate integrity of protected structures, provision of improved access at rear of the house for community reuse,
- Reuse of existing stable buildings to facilitate re-use as cafe and multipurpose community /meeting rooms, other community activities, including events, classes, and gatherings. Provision of a 115sqm extension to former stable buildings to provide a commercial kitchen and café with a southern outlook into the historic walled working vegetable garden amenity.
- Dedicated space within Barnhall House to highlight the context of the structure’s past, key historic events, architectural features.
- Restoration of both dovecotes (conical towers) and adjacent courtyards.
- Walled garden restoration, including small scale intervention to facilitate proposed cafe, relocation of existing temporary roadway to be outside of the garden,
- provision of security, including CCTV.
- exterior lighting to the Barn to highlight the structure.

B) Upgrade works at existing site entrance from R404 including.

- Provision of new carpark with 65 no. of carparking spaces and 28 no. of bike parking spaces.
- Accommodation works to provide access to existing Uisce Eireann water services pumphouse, to include landscape screening works.

C) Redevelopment of existing parkland to include

- Redevelopment of the current 55 no. allotments to realign the plots within the restored historical landscape axes and provide new and improved facilities for the local allotment users.
- Provision of a new 174sqm building to the East of the existing building complex which will provide a storage facility to replace an existing container on site, new toilets, kitchenette, and workshop facilities for the local allotment user group as well as short term workplace facilities for the KCC Parks Department. Provision of water and power outlet market facilities adjacent to the new building to accommodate weekly / monthly local markets.
- Installation of children’s play-area, fitness stations, sport areas and other ancillary open space facilities. Upgrade of existing/ addition of new combined footpath/cycle-paths throughout the site with associated new

street furniture, seating, and public lighting throughout the parkland., new wayfinding and signage throughout the parkland, facilities for existing park user groups, eg dog walking facilities.

- The proposed internal route will link to the Celbridge/Backweston to Leixlip cycle route proposed (by others) to the south via the Kildare Innovation Campus (formerly the Hewlett Packard site) and via the M4 pedestrian/cycle overpass. The proposed internal route within the Wonderful Barn site allows for future connections to planned cycle infrastructure improvements along the R404 Celbridge Road towards Leixlip Town Centre, to be delivered by Kildare County Council.
- Protection and reinstatement of the axial views within the site boundary between Castletown House and the Wonderful Barn by undergrounding of some overhead cables.
- Protection and reinstatement of the integrity of the historic landscape including the Southern and South-Western formal tree lined avenues and forecourt to Barnhall House, formal planting of the walled garden, formal planting of the historic orchard to the Northwest of the building complex and an historic tree line and hedgerow to the Northern boundary of the courtyards.
- Improve overall park accessibility for residents of all ages and abilities throughout the park.
- soft and hard landscaping, including sustainable landscaping practices to enhance biodiversity and environmental sustainability. New conservation-led woodland planting and motorway screening planting.
- Sensitive design and mitigation measures to minimize environmental impact on native habitat preservation.

D) other works

- Realignment and improvements to pedestrian, cycle and vehicular access to site including all necessary infrastructure works required to integrate the site with a proposed M4 Cycle/Walkway bridge.
- Proposed noise barrier to protect the site from adjacent motorway noise nuisance.
- Provision of all utilities, necessary services, drainage works and associated site works.

The proposal has undergone Appropriate Assessment Screening under the Habitats Directive (92/43/EEC), and the relevant provisions of the Planning and Development Act 2000, as amended, and the Planning and Development Regulations 2001, as amended, and the European Communities (Bird and Natural Habitats) Regulations 2011 - 2015. Kildare County Council has determined that the proposed development will not have a significant effect on a European Site and an Appropriate Assessment is not required.

The proposal has also undergone screening for Environmental Impact Assessment under the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU and the relevant provisions of the Planning and Development Act 2000, as amended, and the Planning and Development Regulations 2001, as amended. Having regard to the provisions of the legislation, the nature and scale of the proposed development, the information provided in accordance with Schedule 7A of the Regulations, and having regard to the scale, nature and location of the proposed impacts, the potential impacts and proposed mitigation measures and the results of the any other relevant assessments of the effects on the environment, Kildare County Council has determined that there is no real likelihood of significant effects on the environment arising from the proposed development and that an Environmental Impact Assessment is not required.

As the development is adjacent to a "Major Road" as defined under the European Communities Environmental Noise Regulations 2018, S.I No. 459/2018 a review of the existing noise environment is required to quantify the existing noise levels and establish the project acoustic requirements to ensure the amenity of the future users of the site.

A baseline noise survey was undertaken to measure the existing noise levels. This report outlines the project criteria, baseline survey results, assessment, and recommendations for.

- External amenity spaces,
- Building envelope sound insulation and;
- Ventilation requirements.

Appendix A outlines a glossary of the acoustic terminology used in this report.

1.1 Statement of Competence

This report was completed by Wave Dynamics, an acoustic consultancy that specialises in noise and vibration. Our consultants have completed numerous similar projects in the Ireland the UK and Europe.

This assessment and report were completed by Sean Rocks, Director | Senior Consultant, Sean has experience of numerous planning stage assessments. Sean's qualifications include; BEng (Hons) in Mechanical and Manufacturing Engineering, Diploma in Acoustics and Noise Control (Institute of Acoustics), IOA Certificate of Competence in Environmental Noise Measurement and SITRI certified sound insulation tester. Sean is a member of both Engineers Ireland and the Institute of Acoustics.

The assessment and report were peer reviewed by James Cousins, Managing Director | Principal Consultant with Wave Dynamics who has extensive experience in assessing noise impacts. James is an experienced acoustic consultant. His qualifications include; BSc (Hons) in Construction Management and Engineering, Pg Cert in Construction Law and Diploma in Acoustics and Noise Control (Institute of Acoustics) and an IOA Competence Cert in Building Acoustic Measurements. James is a member of both Engineers Ireland (MIEI) and the Institute of Acoustics (MIOA) and is the current SITRI Chairman.

2 Site Description

The historic site is located at Celbridge Rd, Barnhall, Leixlip, Co. Kildare. The site is bounded by the M4 motorway along the southern boundary, Barnhall Meadows to the west and north, and agricultural land to the east.



Figure 1: Site Location, measurement locations and the surrounding area

3 Project Criteria

The acoustic criterion for the project is set out in this section, the purpose of the criteria is to ensure reasonable:

- Internal noise levels and
- External amenity noise levels.

To provide adequate conditions Wave Dynamics have developed the project criteria for:

- Façade sound insulation performance,
- Ventilation requirements and,
- External amenity requirements.

Assessment Standards

The criteria for the project have been developed based on the following industry standards:

- ✓ BS 8233:2014 Guidance on sound insulation and noise reduction for buildings.
- ✓ Kildare County Council – Noise Action Plan 2019-2023
- ✓ ProPG Professional Practice Guidance on Planning & Noise.
- ✓ ISO 1996-1:2016 Acoustics — Description, measurement and assessment of environmental noise — Part 1: Basic quantities and assessment procedures
- ✓ British Standard BS 6472-1:2008 Guide to evaluation of human exposure to vibration in buildings.
- ✓ AS / NZS 2106 Acoustics—Recommended design sound levels and reverberation times for building interiors.
- ✓ Previous experience on similar projects.

3.1 Noise Assessment Criteria

The noise levels requirements have been developed from the following standards and publications outlined in this section. It should be noted that there is no typical guidance in the ProPG for non-residential buildings. The function of the space will be for patron use and enjoyment, the standards have been developed with this in mind.

Kildare County Council Noise Action Plan

The Kildare County Council Noise Action Plan 2019 – 2023: Kildare County Council states the following with respect to assessing the noise impact on new residential development. There are no specific limits in the Kildare Noise Action Plan for commercial premises therefore the above criteria has been applied for the purpose of the project.

“In the scenario where new residential properties or other noise sensitive premises are introduced into an existing climate of environmental noise, there is currently no clear national planning guidance on noise from the Department of Housing, Planning and Local Government (DHPLG). Kildare Local Authority may develop and publish its own set of guidance on noise assessment and control which would be applicable throughout the county. In the interim, Kildare Local Authority shall require quantifiable noise assessments to be carried where any part of the residential developments is located within 150m of a rail corridor or adjacent to the “Major Roads” within the county.”

“There are no specific noise limit values currently in place within the country except for those arbitrary threshold values indicated in this Plan which are as follows:

Day-Evening Night time Noise Value: 70dB (A) L_{den}

Night time Noise Value: 57 dB (A) L_{night}

ProPg: Professional Practice Guidance on Planning & Noise

ProPg 2017 is used to assess airborne noise from transport sources including road, rail and aircraft noise. The aim of the document is to provide a good design process which considers the internal acoustic environment at an early stage in the design process. The guidance was prepared by the Institute of Acoustics, the Association of Noise Consultants and the Chartered Institute of Environmental Health and is based on the findings by the World Health Organisation in relation to noise impact on humans. Its adoption is considered best practice for assessing the potential noise impact on the future occupants for residential developments.

The guidance is primarily designed for residential developments however it can be applied to other development types including developments where people require appropriate noise levels for rest and sleep. This includes residential care homes, hospitals etc. The criteria is not in general applied to leisure facilities however given the function of the development the ProPg is suitable for assessing the inward noise impact particularly for the external amenity spaces. The guidance advocates a holistic design process which considers the site, its location and likely suitability for the development at an early stage.

The two primary stages of the ProPg design approach are summarised as follows:

Stage 1 – The first stage is to undertake an initial high-level noise risk assessment of the proposed site considering the noise levels (measured and or predicted) to identify any noise risks. This would include consideration of the current noise environment, future use and future noise levels ; and,

Stage 2 –The second stage is a full detailed assessment of the proposed development covering the “*Four Key Elements*”:

1. *“Good Acoustic Design Process,*
2. *Internal Noise Level Guidelines,*
3. *External Amenity Area Noise Assessment; and*
4. *Assessment of Other Relevant Issues.”*

As part of the process an Acoustic Design Statement is produced and submitted to the planning authority. This document sets out the design process used to come to the conclusions and recommendations in the report.

Following the ProPg the following conclusions are recommended by ProPg in relation to the findings of the Acoustic Design Statement based on the recommendations of the Acoustic Consultant:

- a. *“Planning consent may be granted without any need for noise conditions;”*
- b. *“Planning consent may be granted subject to the inclusion of suitable noise conditions; “*
- c. *“Planning consent should be refused on noise grounds in order to avoid significant adverse effects (“avoid”); or, “*
- d. *“Planning consent should be refused on noise grounds in order to prevent unacceptable adverse effects (“prevent”).”*

Section 3 of the ProPg outlines the recommended approach decision makers should following in coming to their conclusions based on the recommendations of the Acoustic Design Statement. Figure 1 on the next page illustrates the ProPg approach.

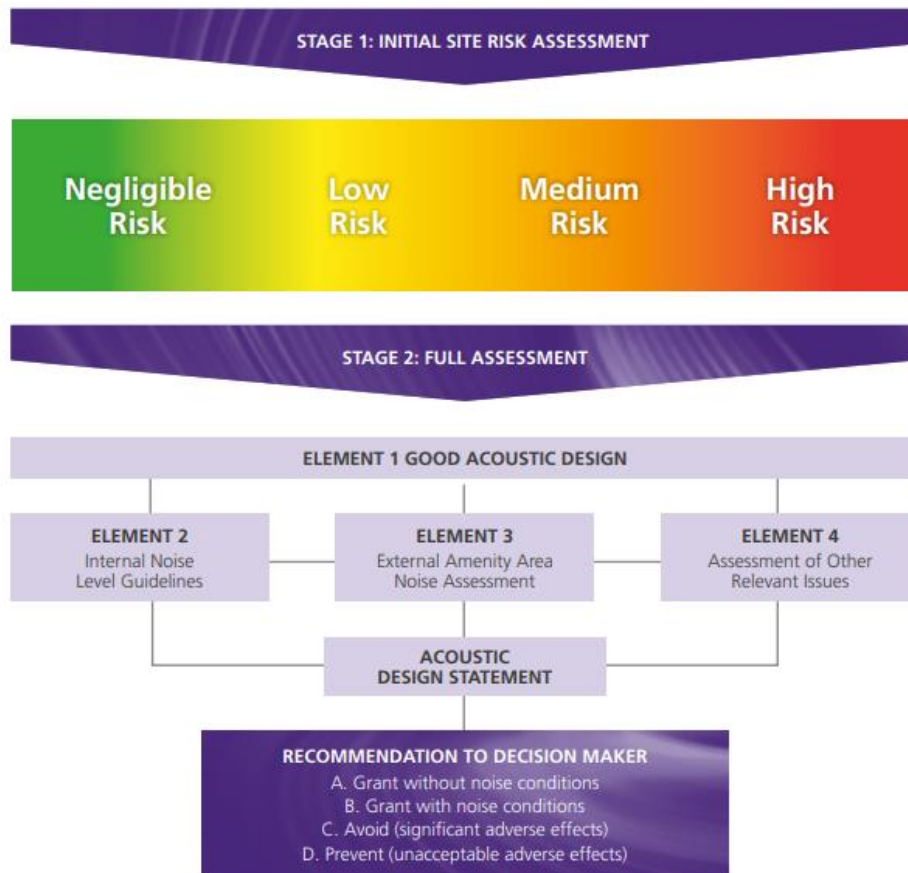


Figure 2: Summary of overall ProPG approach

Internal Noise Levels

The guidance limits for internal noise levels set out within ProPG are intended for residential dwellings only, however the development is currently not proposed to have any residential elements therefore the internal noise level requirements have been developed from other good practice standards. Recommended internal noise level criteria has been applied to the project based on guidance from BS8233 and AS/NZS 2107. Table 1 below outlines the recommended internal noise levels.

Table 1: BS 8233:2014 internal noise criteria.

Type of occupancy/activity	Overall Noise Design Range $L_{eq,16hour}$ (07:00hrs – 23:00hrs) dB(A)
Offices, Meeting rooms, Community workshop rooms, café, exhibition rooms	35
Performance Spaces (Barn ground floor)	30 – 35

External Amenity Space Noise Levels

With regard to noise levels in external amenity spaces ProPG 2017 refers to the BS8233:2014 guidance which states that:

“the acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed and noise levels should ideally not be above the range 50 – 55 dB $L_{Aeq,16hr}$ ”.

It also states that:

“These guideline values may not be achievable in all circumstances where development might be desirable. In such a situation, development should be designed to achieve the lowest practicable noise levels in these external amenity spaces but should not be prohibited.”

BS 8233:2014 elaborates on this further, it acknowledges that it may not always be necessary or feasible to ensure that noise levels remain within the guideline values. In respect of gardens and patios, BS 8233:2014 states:

“however it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces but should not be prohibited.”

Both BS8233:2014 and ProPG 2017 do not advise that development should be restricted in areas with undesirable noise levels. The standards recommend that mitigation measures are put in place where practicable to achieve the recommended noise levels for the external amenity spaces. It notes that this may not be practical in all situations and local or governmental policy should take precedence in these situations.

Adopted Project Criteria

The project criteria for this development have adopted the following targeted values:

- *Day-Evening Nighttime Noise Value: 70dB (A) L_{den} - KCC Noise Action Plan*
- *Nighttime Noise Value: 57 dB (A) L_{night} -- KCC Noise Action Plan*
- *External Amenity Spaces 50-55dBA $L_{Aeq,16hour}$. – BS8233:2014 & ProPG 2017*
- *Internal Noise levels 30-35 dB $L_{Aeq16hr}$ – BS 8233:2014 & AS/NZS 2107.*

4 ProPG Stage 1 – Assessment

The stage one risk assessment is used to assess the site for potential risks that may occur in terms of noise impact. The ProPG sets out four categories of risk: 1) negligible, 2) low, 3) medium or 4) high risk. Figure 2 below illustrates the ProPG risk assessment and the values associated with each risk category.

The risk assessment also considers the risk based on the number of L_{AFmax} events per night as follows;

- A site should not be considered a negligible risk if more than 10 L_{AFmax} events exceed 60 dB during the night period and;
- A site should be considered a high risk if the L_{AFmax} events exceed 80 dB more than 20 times per night.

Paragraph 2.9 of ProPG states that,

“The noise risk assessment may be based on measurements or prediction (or a combination of both) as appropriate and should aim to describe noise levels over a “typical worst case” 24 hour day either now or in the foreseeable future.”

To assess the noise impact with the ProPG risk categories a baseline noise survey was undertaken on the site to quantify the existing noise environment.

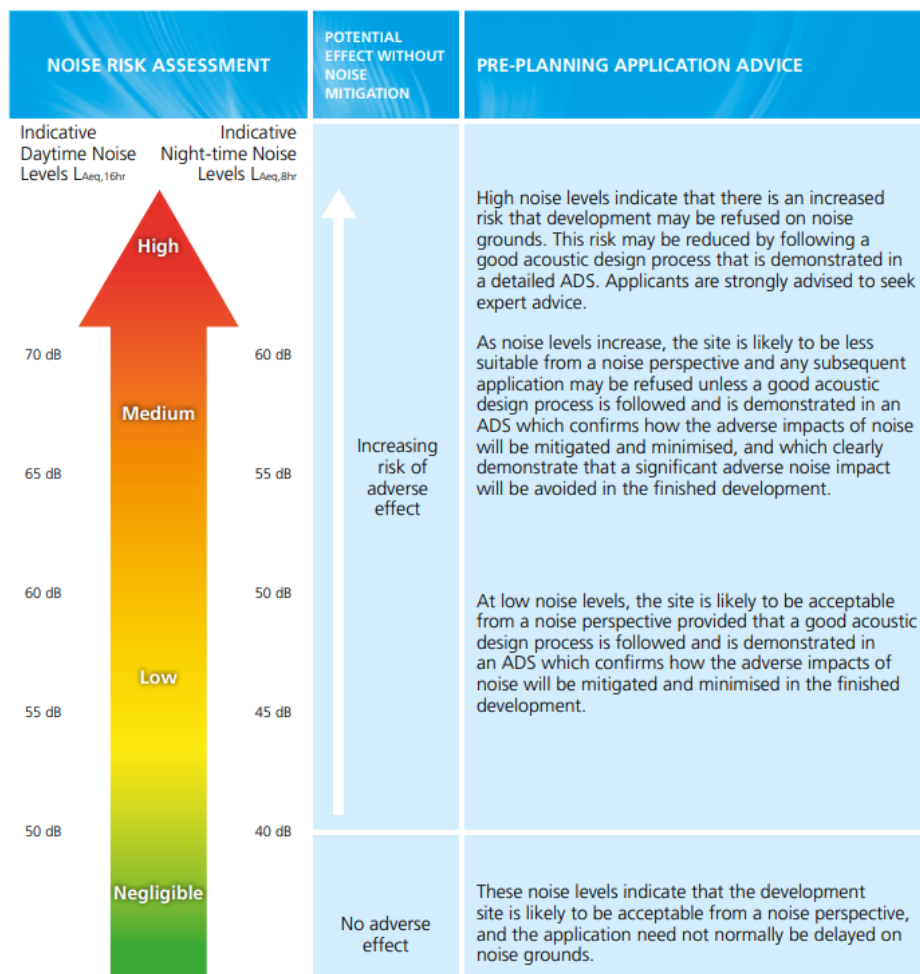


Figure 3: ProPG Risk Analysis

4.1 Baseline Noise Survey

An unattended and attended noise survey was conducted to quantify the existing noise environment and current noise levels experienced from the M4 motorway and other roads in the area.

4.1.1 Site Description and Measurement Locations

The historic site is located at Celbridge Rd, Barnhall, Leixlip, Co. Kildare. The site is bounded by the M4 motorway along the southern boundary, Barnhall Meadows to the west and north, and agricultural land to the east.



Figure 4: Site location and measurement locations L1, A1-A8.

4.1.2 Survey Methodology and Personnel

The attended survey, unattended logger deployment and collection were completed by Daniel Cousins (Field Engineer).

Attended Noise Measurements

Noise measurements were undertaken in general accordance with ISO 1996-1:2016 using ISO Class 1 sound analysers. Attended measurements were taken for a duration of 15 minutes in the locations, A1, A2, A3, A4, A5, A6, A7 and A8. Care was taken to avoid any effect on the measurement of extraneous noise, acoustic vibration, or interference. During the attended noise measurements, the sound level meter was positioned at approximately 1.5m above the ground level. The weather conditions were calm (wind less than 5m/s) with no rain, a windshield was used for the duration of the attended surveys. The noise logger was calibrated before and after the survey and no significant drift was noted.



Figure 5: Attended noise monitor setup

Unattended Noise Measurements

An unattended noise logger was deployed in location L1 as per Figure 1. The logger was placed on a logger pole to the South of the site. The logger was deployed at a height of approximately 4m above the ground. Measurements were filtered for periods of unsuitable weather conditions where appropriate. The noise logger was calibrated before and after the survey and no significant drift was noted.

4.1.3 Survey Period

The attended noise measurements were undertaken on the 23rd of April 2024. The noise logger was deployed on the 23rd of April 2024 at 13:15hrs and collected on the 2nd of May 2024 at 10:00hrs.

4.1.4 Noise Measurement Equipment

A Class 1 sound level meter/noise logger in general accordance with IEC 61672-1:2013 was used for the attended measurements. Table 2 below summarises the measurement equipment used.

Table 2: Noise Measurement Equipment

Description	WD Asset Number	Model	Serial No.	Calibration Certificate No.	Calibration Due Date
Calibrator	CAL3	Nor 1251	32096	U44813	10/07/2024
Sound Level Meter	SLM1	Nor 140	1405554	U45343/ U45344/ U45342	27/07/2025

4.1.5 Subjective Noise Environment

During the attended noise survey and logger deployment, the following noise sources were identified:

- Road traffic noise,
- Low wind generated noise on foliage.

4.2 Noise Measurement Results

This section outlines the results of both the unattended and attended noise measurements.

Attended Measurement Results

Table 3 outlines the results of the attended measurement survey.

Table 3: Attended Noise Measurement Results

Measurement				Measured Noise Levels		
Location	Date	Time (hrs)	Duration (mins)	L _{Aeq} dB	L _{AFmax} dB	L _{A90} dB
A1	23/04/2024	09:29	15:00	71	77	68
A2	23/04/2024	09:47	15:00	62	70	60
A3	23/04/2024	10:06	15:00	60	66	57
A4	23/04/2024	10:27	15:00	53	67	51
A5	23/04/2024	10:48	15:00	47	69	43
A6	23/04/2024	11:10	15:00	47	66	43
A7	23/04/2024	11:33	15:00	54	79	51
A8	23/04/2024	12:11	15:00	67	72	63

Unattended Monitoring Results

Table 4 outlines the results of noise measurements at the unattended monitoring location L1. The logger was located at the closest boundary of the site to the M4 motorway, at 4m height. A full breakdown of the noise monitoring results can be found in Appendix B of this report.

Table 4: Unattended Measurement Results

Start Date	L _{Aeq,16hour} 07:00 - 23:00 dB	L _{night} (L _{Aeq,8hour} 23:00 - 07:00) dB	L _{den} (00:00 - 00:00) dB	10th highest night-time L _{AFmax}	L _{A90} (23:00 - 07:00) dB
23/04/2024	80 ¹	75	N/A	87	55
24/04/2024	80	75	83	86	54
25/04/2024	80	76	83	87	58
26/04/2024	81	75	84	87	55
27/04/2024	80	74	83	87	55
28/04/2024	81	76	83	87	57
29/04/2024	79	75	85	87	55
30/04/2024	80	76	83	87	56
01/05/2024	80	76	83	87	56
02/05/2024	81 ¹	N/A	N/A	N/A	N/A

- (1) Shortened measurement duration.
- (2) Where night-time period is referred to the date is the date the measurement commenced on at 23:00hrs and finished at 07:00hrs on the following calendar day.
- (3) Arithmetic average of L_{AF90}.

4.2.1 L_{AFmax} Noise Levels

With regard to the maximum noise levels ProPg states:

“A site should not be regarded as negligible risk if the $L_{Amax,F}$ exceeds, or is likely to exceed 60 dB more than 10 times a night. A site should be regarded as high risk if the $L_{Amax,F}$ exceeds, or is likely to exceed 80 dB more than 20 times a night.”

Figure 6 below highlights the average number of L_{AFmax} events recorded on the noise logger per night based on a 15min measurement interval. It should be noted that the noise logger was located alongside the boundary for the site and the M4 motorway representing a worst case noise level for the site. The L_{AFmax} noise levels across the remainder of the site are predicted to be lower than those measured. Based on the ProPG risk assessment of the L_{AFmax} noise levels, the southern boundary of the site is considered high risk as there are typically more than 20 occurrences exceeding 80dB L_{AFmax} .

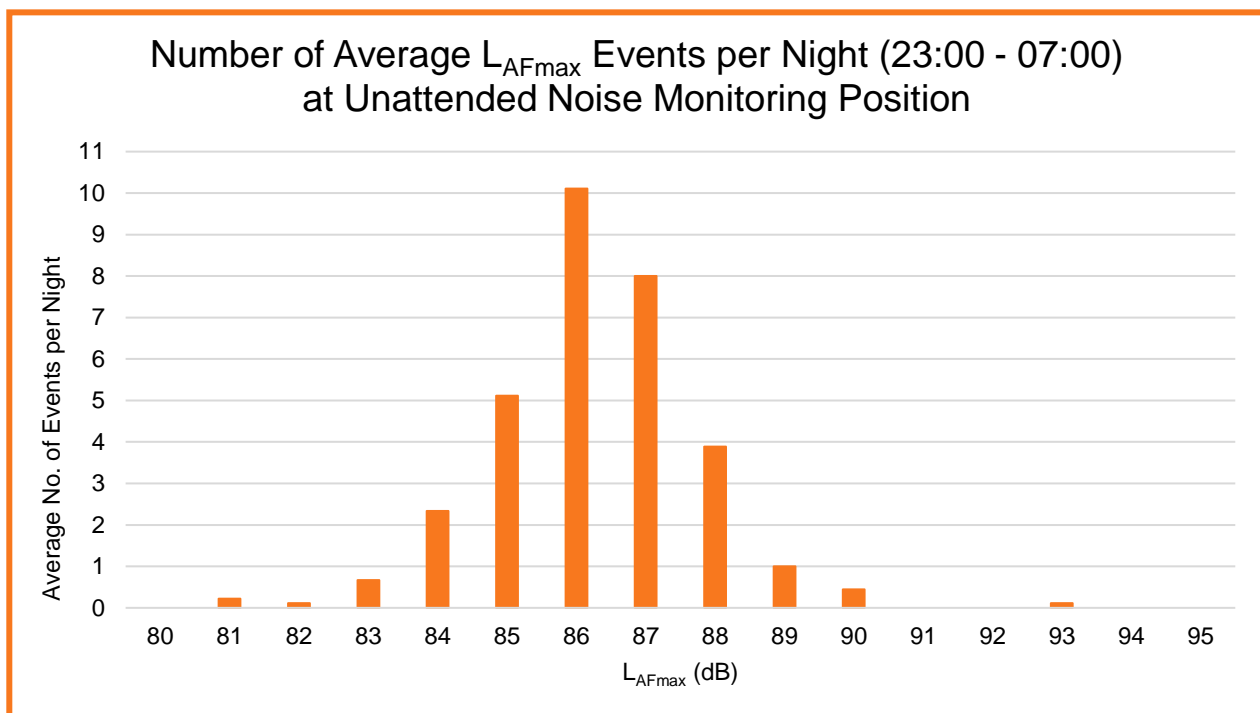


Figure 6: Average recorded L_{AFmax} events per night based on 15min measurement intervals.

Discussion of Measurement Results

The measurements were taken during weekdays and weekends to provide an understanding of the noise climate during all periods. The measured road levels were very similar for both weekends and weekdays and therefore both time periods have been considered for the assessment.

The ambient noise was dominated by road traffic noise from the M4 motorway. The road traffic noise levels impacted on the overall ambient noise level and maximum noise levels experienced onsite.

4.3 Weather Conditions for Monitoring Period

Good weather conditions were noted in general during the deployment and collection during the attended survey, with winds of less than 5 m/s and no rain.

Where weather conditions during the unattended survey impacted on the results they were filtered where required.

4.4 Future Noise Levels

Based on data from the TII (2017) the average rate of growth on Irish roads is a 3.9%, assuming linear growth of 3.9% over the next 10 years an increase in noise levels from road traffic of 1-2 dB would be expected. WDA have allowed for this growth in our assessment.

4.4.1 TII Strategic Noise Maps

Consideration has also been given to the Round 4 2022 TII noise maps. The L_{den} noise map and L_{night} strategic noise maps are included in Figure 7 and Figure 8 below. The TII noise maps predict road traffic noise levels at a height of 4m.

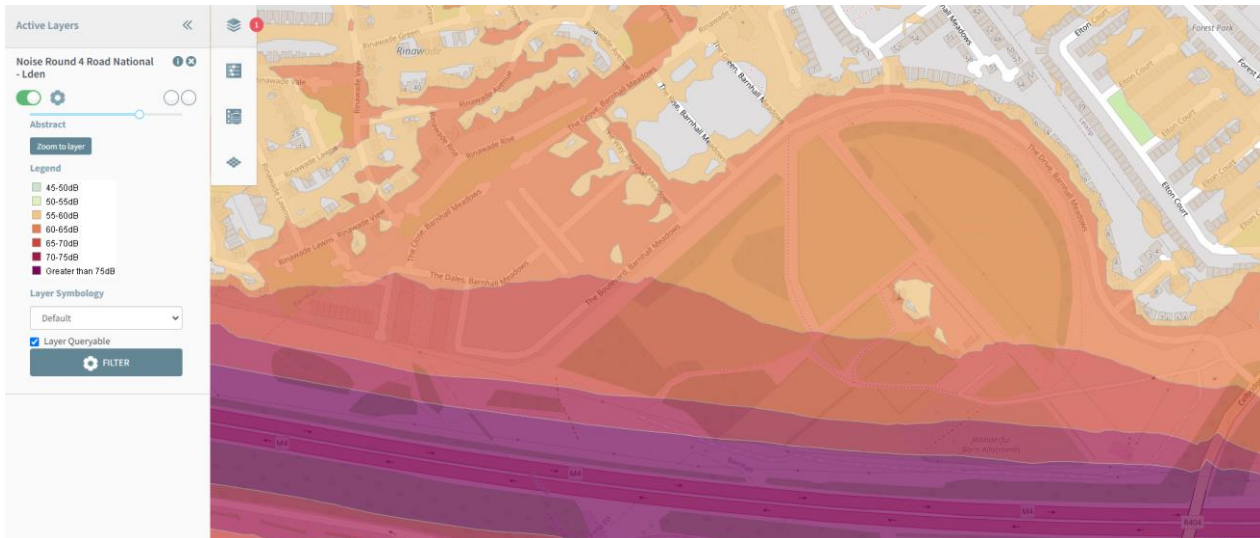


Figure 7: TII Round 4 Strategic Noise Maps L_{den} (2022)

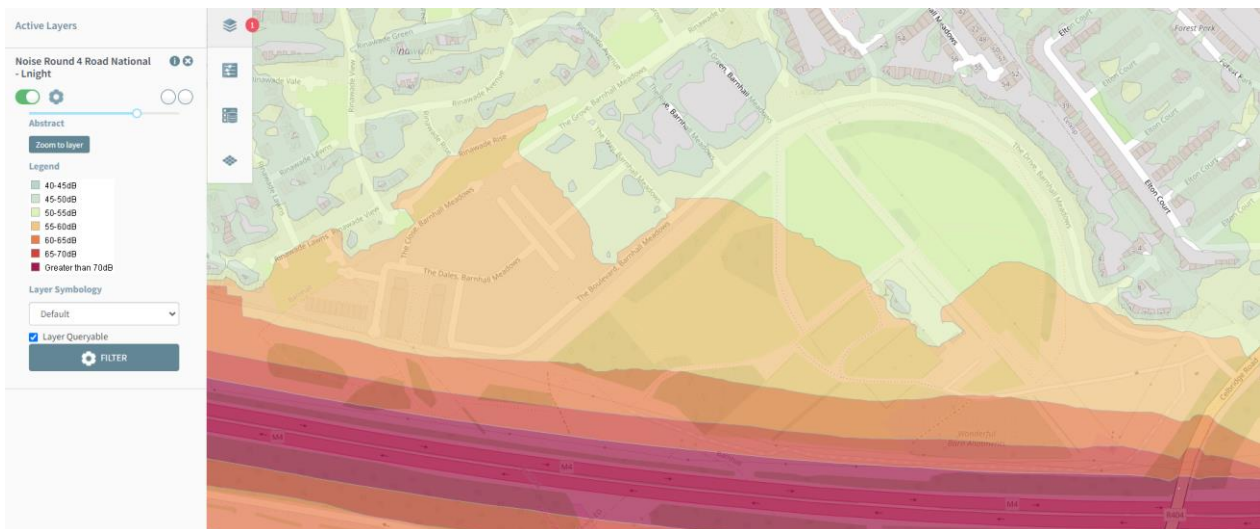


Figure 8: TII Round 4 Strategic Noise Maps L_{night} (2022)

4.5 ProPG Stage 1 – Initial Risk Assessment

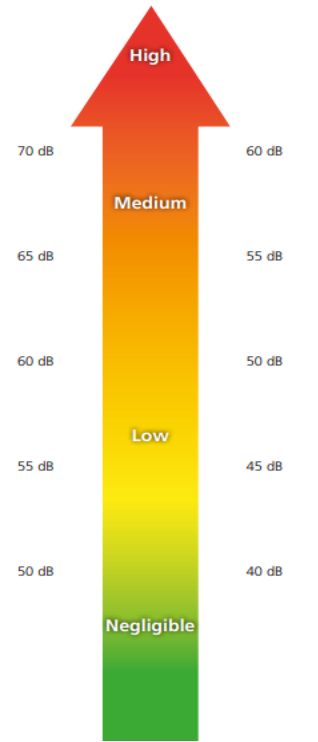
The measured noise levels on the site and future noise levels have been predicted for road and any existing/proposed industrial noise to assess the probability of an adverse impact.

Table 5 below identifies the Noise Risk Categorisation of the site based on the predicted free field façade noise levels. The site has been categorised as medium to high risk. Considering this risk categorisation of the development mitigation measures will be required to mitigate the noise risk in following with ProPG guidance and good acoustic design process.

It should be noted that the ProPG 2017 states the following with regard to how the initial site noise risk is to be used:

“2.12 It is important that the assessment of noise risk at a proposed residential development site is not the basis for the eventual recommendation to the decision maker. The recommended approach is intended to give the developer, the noise practitioner, and the decision maker an early indication of the likely initial suitability of the site for new residential development from a noise perspective and the extent of the acoustic issues that would be faced. Thus, a site considered to be high risk will be recognised as presenting more acoustic challenges than a site considered as low risk. A site considered as negligible risk is likely to be acceptable from a noise perspective and need not normally be delayed on noise grounds. A potentially problematical site will be flagged at the earliest possible stage, with an increasing risk indicating the increasing importance of good acoustic design.”

Table 5: ProPG Stage 1 Risk Assessment of Existing Noise Levels

Noise Risk Assessment		Risk Assessment Rating	
Indicative Daytime Noise Levels $L_{Aeq,16hour}$	Indicative Night-time Noise Levels $L_{Aeq,8hour}$	Daytime Noise Levels	Night-time Noise Levels
 <p>The diagram shows a vertical scale from 40 dB to 70 dB. It is divided into four risk levels: Negligible (40-50 dB, green), Low (50-60 dB, yellow), Medium (60-65 dB, orange), and High (65-70 dB, red). A large red arrow points upwards, indicating increasing risk with increasing noise levels.</p>		High Risk	High Risk
		The southern part of the site is at high risk from road traffic noise impact due to the M4. Good acoustic design is vital.	The southern part of the site is at high risk from road traffic noise impact due to the M4. Good acoustic design is vital.
		Medium Risk	Medium Risk
		The centre of the site is at medium risk from road noise impact. Good acoustic design is vital.	The centre of the site is at medium risk from road noise impact. Good acoustic design is vital.
		Low Risk	Low Risk
		The northern part of the site is at low risk of from road noise impact due to attenuation with distance.	The northern part of the site is at low risk of from road noise impact due to attenuation with distance.
	Negligible Risk	Negligible Risk	
	N/A	N/A	

5 ProPG Stage 2- Full Assessment

This section outlines the full acoustic design assessment in line with ProPG guidance.

5.1 Element 1: Good Acoustic Design Process

ProPg States the following in relation to Good Acoustic Design Process:

“A good acoustic design process takes a multi-faceted and integrated approach to achieve optimal acoustic conditions, both internally (inside noise-sensitive parts of the building(s)) and externally (in spaces to be used for amenity purposes).”

“Good acoustic design should avoid “unreasonable” acoustic conditions and prevent “unacceptable” acoustic conditions (these terms are defined in Element 2). Good acoustic design does not mean overdesign or gold plating of all new development but seeking to deliver the optimum acoustic outcome for a particular site”

The following considerations are recommended by ProPG:

- *“Check the feasibility of relocating, or reducing noise levels from relevant sources.*
- *Consider options for planning the site or building layout.*
- *Consider the orientation of proposed building(s).*
- *Select construction types and methods for meeting building performance requirements.*
- *Examine the effects of noise control measures on ventilation, fire regulation, health and safety, cost, CDM (construction, design and management) etc.*
- *Assess the viability of alternative solutions.*
- *Assess external amenity area noise.”*

5.1.1 Discussion of Good Acoustic Design

Mitigation of Sources

The development is located close to the road noise sources which are not on or part of the development therefore it is not possible to reduce or relocate the relevant noise sources. The potential to include a noise barrier on the road was considered with TII as part of the project.

Site Layout and Orientation

The southern boundary of the site is most exposed to road traffic noise due to the vicinity of the M4 motorway. The two courtyard areas will benefit from screening due to the layout and orientation of the buildings and will experience lower onset noise levels.

Construction Methods

Section 5.2.2 considers the construction methods required to meet the building performance control measures. The construction measures are in general robust, providing standard external wall and façade details to meet thermal, fire and weathertightness requirements will in general provide adequate performance to achieve good levels of sound insulation. The existing structures were found to be of a robust construction and offer good sound insulation.

Impact of Noise Control Measures

The effects for noise control measures on other building elements including ventilation are considered in Section 5.2.2. It is generally impractical to provide ventilation via openable windows in urban/built up areas. An open window will provide 10-15dB of attenuation which in built-up urban areas is not practical. In general, the good acoustic design process in these areas is to provide ventilation via attenuated natural vents or mechanical ventilation. This allows the occupants to have adequate ventilation with adequate noise levels.

External Amenity

ProPG states the following with regard to external amenity spaces:

“The acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed and noise levels should ideally not be above the range 50 – 55 dB LAeq,16hr.”

The external amenity source noise levels are considered in section 5.3.

5.2 Element 2 – Assessment of Internal Noise Levels

This section outlines the assessment of the building envelope including the façade noise modelling, and specification of the glazing requirements.

A noise intrusion assessment for the proposed development has been completed in accordance with the methodology outlined International Standard *ISO EN 12354-3:2017 Building acoustics — Estimation of acoustic performance of buildings from the performance of elements — Part 3: Airborne sound insulation against outdoor sound*. The standard provides a method for calculating the indoor noise levels due to for instance road traffic noise.

The calculation method accounts for multiple factors including:

- The external noise level at the affected building façade.
- The frequency characteristics of the specific noise source (i.e. road traffic noise).
- The sound insulation performance of each façade element (i.e. Windows, Walls, Roof...).
- The area of each façade element.
- Direct and flanking transmission paths.

5.2.1 Predicted Internal Noise Levels

The proposed development is predicted to achieve the internal noise limits defined in Section 3 subject to implementing the construction details outlined in Section 5.2.2 of this report.

5.2.2 Building Envelope Specification

This section outlines the building envelope requirements based on the measurements outlined in Section 3. Facade, wall, glazing, roof and ventilation specifications have been determined to achieve the internal noise level criteria for the development. The specification has been determined in accordance with EN ISO 12354-3: 2017 based on the predicted façade day and night noise levels, the room and facade dimensions from the drawings provided.

The building envelope specification should be confirmed by the acoustic consultant at design stage once the internal layouts and design development has been completed. Any changes to the assumed ventilation strategy should be considered as part of the review.

Glazed Elements and Ventilation

The glazed elements and ventilation openings are typically the acoustically weakest elements of any façade. The required sound insulation performance of façade glazed elements and ventilation openings is outlined in Table 6 below. This has been calculated based on the forementioned BS8233:2014 Annex G. this has been also based on a 2dB increase of the measurements gathered in Section 3.

It is required that the glazing, frame and seals as a whole achieve the performance when the window is in the closed position. The performance requirements outlined in Table 6 below are considered to provide adequate sound insulation to achieve the relevant day and night internal design goals respectively. A markup outlining the performance requirements for each façade are included in Appendix B.

Table 6: Sound Insulation performance requirements for glazed elements and ventilation

Façade	Glazed Elements (Frame & Glazing) Sound Insulation Requirements (Indicative requirements equal or approved)						Glazing Acoustic Performance dB R _w	Proposed Façade Ventilation ¹
	Octave Band Frequency Requirements ¹ R dB							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz		
RED	14	19	25	33	42	21	29dB R _w	Standard passive ventilation ³

- (1) Natural ventilation assumed throughout, the performance cited for the ventilator is in the open position. Should this change to mechanical ventilation the above specification may be reduced. An acoustic consultant should be engaged to assess the level of reduction appropriate to maintain the internal noise level criteria.
- (2) The calculation assumes a maximum of 1 ventilation opening per bedroom at the above specification.
- (3) Standard passive ventilation assumed as per Table 7 below.

It is important to note that the requirements outlined above are minimum requirements for the glazed element as a whole. The octave band values are indicative and specific to the assessed glazing type, equal or approved to meet the minimum project requirements is acceptable.

We understand the ventilation strategy for the development has not been confirmed at this stage of the design. It has been assumed that ventilation will be provided via natural ventilation system. Should the ventilation strategy change to mechanical ventilation. Wave Dynamics should be notified. Typically, the use of a natural ventilation strategy will lead to an enhanced glazing specification compared to a sealed mechanical ventilation system. This assessment is based on the windows in closed position.

It is recommended that the facade supplier provide laboratory tests confirming the airborne sound insulation performance in the absence of suitable laboratory data a composite sound reduction index calculation undertaken by a suitably qualified acoustic consultant can be used to demonstrate compliance.

The calculations for the glazing figures in Table 6 are based on the use of basic trickle vents. The performance value required and that used in the internal noise level predictions is given in Table 7 below.

Table 7: Recommended ventilation specification

Description	Octave Band Centre Frequency (Hz) Sound Reduction Index D _{n,e} dB					
	125	250	500	1k	2k	4k
Standard non-acoustic trickle ventilator typically ≥ D _{n,e,w} 30dB	30	30	30	30	30	28

External Wall Construction

The façade wall construction has been assumed to achieve a minimum sound insulation performance of 50dB R_w. Typical façade construction such as concrete, blockwork, timber frame and brick offer high levels of sound insulation and will meet this requirement. The existing structure of the Wonderful Barn buildings would be expected to meet this requirement.

Roof Construction

The roof construction has been assumed to achieve a minimum sound insulation performance of 50dB R_w. Any skylights and glazing in the roof system should be of standard double-glazed construction to meet a performance of minimum 29 dB R_w.

5.3 Element 3- External Amenity Spaces

It is currently predicted that the noise levels on the southern half of the site, located closest the M4 motorway will exceed the desirable external amenity level criteria of 50-55dBA $L_{Aeq,16hour}$. The southern boundary of the site includes external amenity including walking and cycle paths, dog park, public meadow area and parkland, allotments and an informal kickabout area. The predicted noise levels across the site at 1.5m height without mitigation are shown in Figure 9 below. The contour map shows the southern boundary of the site alongside the M4 within the 70-75dBA contour, and majority of the southern half of the site between 55 and 65dBA $L_{Aeq,16hour}$.

The amenity courtyard spaces to the rear of the Wonderful Barn buildings are predicted to achieve the desirable noise levels due to the benefit of screening from the buildings themselves.



Figure 9: Predicted daytime noise levels ($L_{Aeq,16hour}$) across the site without mitigation

It is recommended that mitigation of the external noise levels is provided via the use of a noise wall to the southern boundary of the site to reduce the external amenity noise levels. Figure 10 shows the predicted noise contours across the site with the implementation of a 3m noise wall along the southern boundary of the site. The noise wall is predicted to reduce the noise level across the majority of the site to within the 50-55dBA $L_{Aeq,16hour}$ desirable level, with some small sections of the site closest the M4 predicted to marginally exceed this by no more than 5dB.

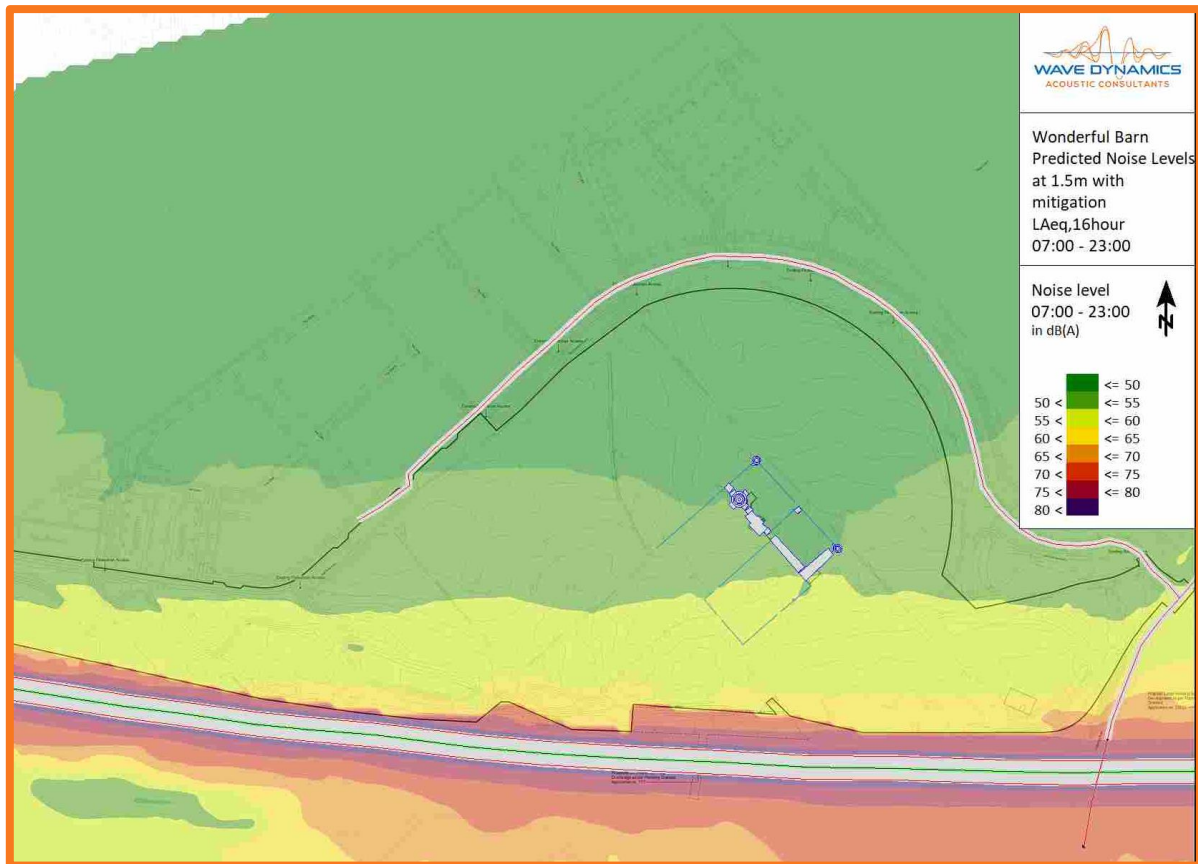


Figure 10: Predicted daytime noise levels ($L_{Aeq,16hour}$) across the site with mitigation.

The recommended extent and height of the noise walls are shown below Figure 11. For the barrier to work as intended it is vital that the barrier is solid to its full extent and that there are no gaps/holes in the barrier. Suitable materials for a noise barrier are listed below, other materials and products should be approved by an acoustic consultant prior to installation:

- Timber fence barrier with a surface density of $> 20 \text{ kg/m}^2$ such as that supplied by Mulligan Fencing.
- 100mm concrete block.
- Sonant acoustic noise barrier.

It was noted that there is a future overpass to be constructed on this road. As part of the design of the noise wall this was discussed. It has been confirmed that the details of the noise wall will be agreed between TII and Kildare Innovation Campus once the final drawings are available for the overpass. It is recommended that any changes to the noise wall are remodelled to assess the noise impact.

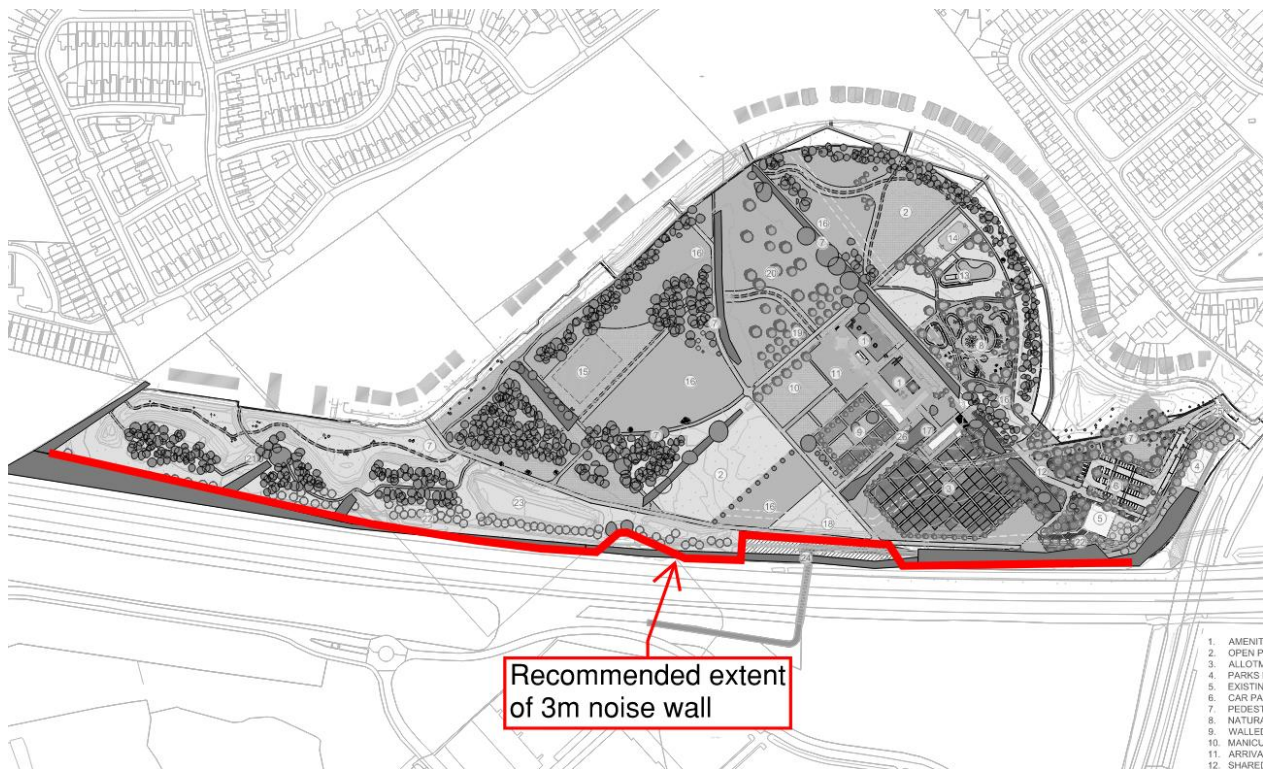


Figure 11: Recommended extent of 3m noise wall.

5.4 Element 4- Assessment of Other Relevant Issues

This section of the acoustic design report considered the other relevant issues. Element 4 considers other issues which may remain relevant to the assessment, these issues are as follows:

- 4(i) compliance with relevant national and local policy.
- 4(ii) magnitude and extent of compliance with ProPG.
- 4(iii) likely occupants of the development.
- 4(iv) acoustic design v unintended adverse consequences and;
- 4(v) acoustic design v wider planning objectives.

5.4.1 Compliance with Relevant National and Local Policy

Kildare County Council Third Noise Action Plan 2019-2023 provides additional criteria for this assessment. This requires the predicted post mitigation L_{den} noise levels at 1.5m above all floor levels are below the 70dB (A) L_{den} threshold. The action plan also requires that the predicted post mitigation L_{night} noise levels at 1.5m above all floor levels is below the 57dBA threshold.

L_{den} Noise Impact Contours

Figure 12 shows the L_{den} noise contours from the M4 Motorway. This has been assessed at 1.5m contour height in accordance with the Kildare County Council Third Noise Action Plan 2019-2023. The noise contours show that all facades will meet the Kildare County Council Third Noise Action Plan 2019-2023 threshold of 70 dBA L_{den} .

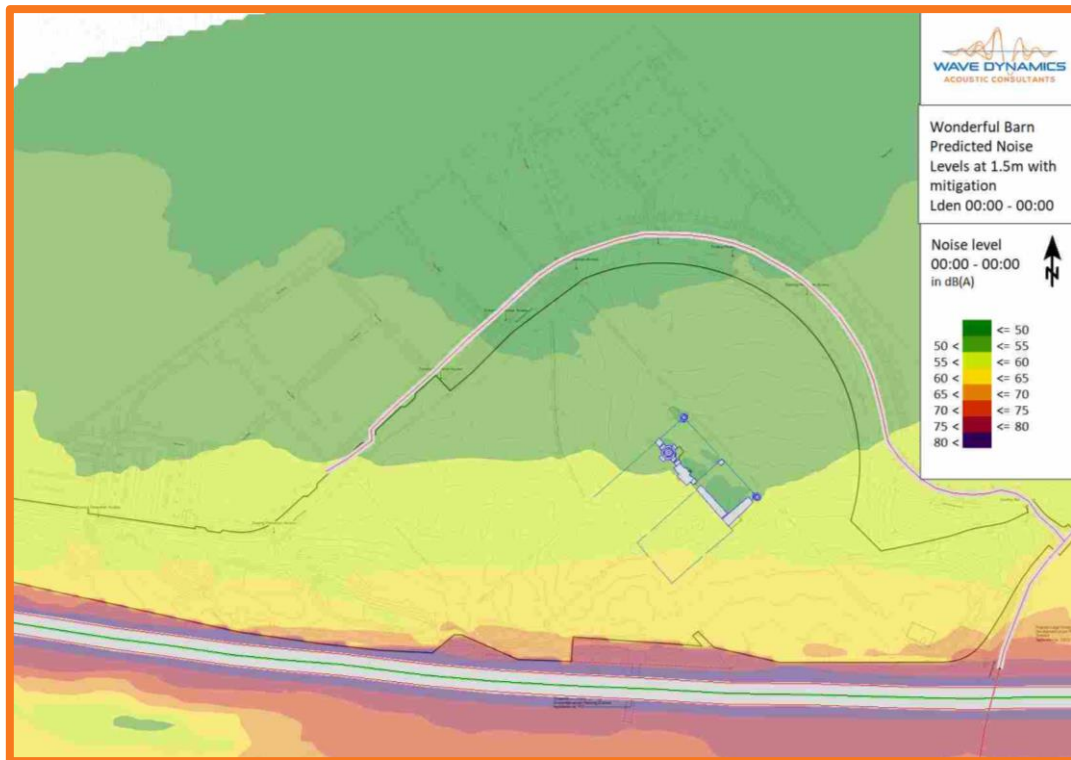


Figure 12: Lden contour figures at 1.5m in dBA

L_{night} Noise Impact Contours

Figure 13 shows the L_{night} noise impact contours, from the M4 Motorway on the proposed buildings. This has been done at 1.5m contour heights in accordance with the Kildare County Council Third Noise Action Plan 2019-2023.

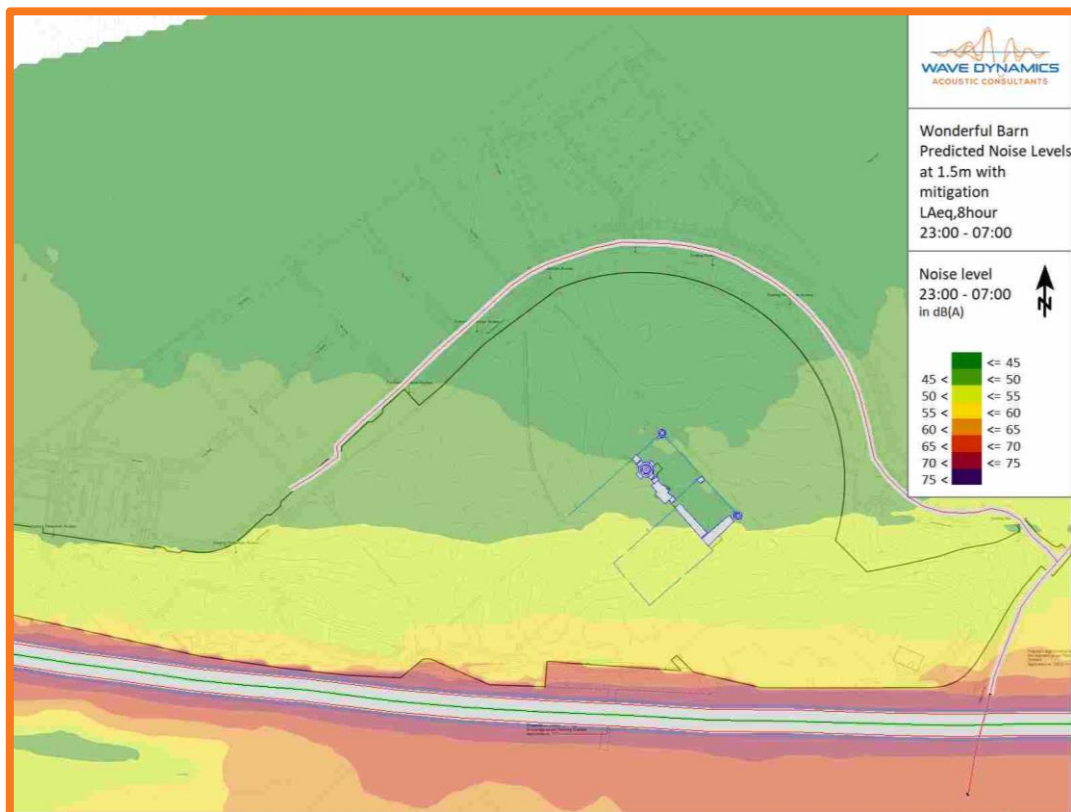


Figure 13: L_{night} predicted noise contours at 1.5m in dBA with mitigation

5.4.2 Magnitude and Extent of Compliance with ProPG

This report demonstrates that the internal noise levels will meet the recommended project criteria provided the guidance in this report is followed. External amenity spaces have been provided in line with the guidance set out in ProPG, and best efforts have been made to reduce the noise impact of the M4 motorway on the external amenity of the proposed development. Based on this the development is in general compliance with the ProPG requirements with the suggested mitigation measures in place.

5.4.3 Likely Occupants of The Development

As the development does not consist of any residential dwellings or buildings for long term stay there will be no occupants of the development. The assessment has considered the likely users of the development and ensured adequate internal and external noise levels for potential users. The visitors to the development will have various needs, those exact needs of the visitors are not known at this time.

5.4.4 Acoustic Design v Unintended Adverse Consequences

The design has considered the impact of adverse consequences, mitigation has been provided by specification of the sound insulation and ventilation requirements. Further mitigation measures have been specified for the outdoor spaces in the form of an acoustic barrier to the Southern boundary of the site.

5.4.5 Acoustic Design v Wider Planning Objective

Where possible the wider planning objectives have been considered including the need for social and leisure spaces with good transport links. It is assumed that the wider planning objectives have been adhered to by following the ProPG guidance.

5.5 Stage 2 Assessment Conclusion

The stage 2 assessment considers all four (4) elements, the principals of good acoustic design have been followed.

The element 2 assessment has considered the measures required to provide an adequate acoustic environment with appropriate noise levels for internal spaces. The sound insulation and ventilation requirements have been specified based on the predicted façade noise levels.

The element 3 assessment of external amenity spaces has considered the noise impact on the development and the external amenity spaces. Appropriate provision of external amenity space has been provided in line with the ProPG guidance.

Other relevant issues have been considered including, local policy, unintended consequences and the wider planning objectives.

6 Conclusion

Wave Dynamics were engaged by Kildare County Council as the acoustic consultants to undertake a planning stage Inward Noise Impact Assessment for the redevelopment of The Wonderful Barn, Celbridge Rd, Barnhall, Leixlip, Co. Kildare.

The proposed Redevelopment of The Wonderful Barn comprises an area of c.19.8ha and incorporates the protected structure of the Wonderful Barn and its ancillary buildings, all protected structures, including Barnhall House, two dovecotes, a walled garden and two ranges of adjacent courtyards containing former farm buildings and the public parklands enclosed by the M4 motorway to the South, Celbridge Road R404 to the East and suburban residential developments to the North and West.

The proposed works will protect and enhance the architectural heritage and amenity of the Wonderful Barn and adjacent buildings and provide an integrated public amenity park and tourism destination at The Wonderful Barn and associated lands, informed by a detailed conservation and management plan.

Noise Impact Assessment

A Stage 1 and Stage 2 ProPG assessment has been undertaken. As part of the stage one assessment to categorise the site a baseline noise survey was undertaken to measure the existing noise levels. Following a review of the noise levels on the site including the L_{AFmax} and L_{Aeq} the site has been characterised as high to medium risk.

Internal Noise Levels

Following the baseline survey, a noise impact assessment was undertaken, this included break-in noise calculations to predict the internal noise levels from road traffic on the M4 Motorway. Consideration has also been given to the future growth of the roads. Following the assessment, the building envelope performance requirements were determined. The performance specification for the building envelope has been provided in this report which includes the external walls, glazing, roof and ventilation requirements.

External Amenity Noise Levels

The assessment has also considered the external amenity noise levels for future patrons of The Wonderful Barn in accordance with ProPG 2017 and BS 8233:2014. There are a number of external amenity spaces for patrons across the development, including two large amenity courtyards to the north of the Wonderful Barn buildings which are predicted to achieve the desirable external amenity levels without mitigation.

There are also large amenity spaces along the southern boundary of the site which are predicted to have noise levels exceeding the desirable level. Mitigation has been recommended in the form of a 3m high noise wall to significantly reduce the contribution of the M4 motorway to the external amenity noise levels at these amenity spaces. A reduction of up to 10dB is predicted along the southern boundary of the site. This is in line with BS 8233 guidance and ProPG.

Façade Noise Levels

The onset façade noise levels in terms of L_{den} meet the Kildare County Council requirements without any additional mitigation when considering each floor level.

Based on the recommendations in this report it is predicted that the internal and external noise levels will achieve the targeted internal noise levels in line with BS 82233:2014 and ProPG 2017 guidance. The onset façade noise level requirements in terms of L_{den} are achieved without any additional mitigation.

Appendix A- Glossary of Terms

Ambient Noise	The totally encompassing sound in a given situation at a given time, usually composed of sound from all the noise sources in the area.
Background Noise	The steady existing noise level present without contribution from any intermittent sources. The A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90 per cent of a given time interval, T ($L_{AF90,T}$).
dB	Decibel - The scale in which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the RMS pressure of the sound field and the reference pressure of 20 micro-pascals (20 μ Pa).
dB(A)	An 'A-weighted decibel' - a measure of the overall noise level of sound across the audible frequency range (20 Hz – 20 kHz) with A-frequency weighting (i.e. 'A'-weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Hertz	The unit of sound frequency in cycles per second.
L_{A90}	A-weighted, sound level just exceeded for 90% of the measurement period and calculated by statistical analysis. See also the background noise level.
L_{Aeq}	A-weighted, equivalent continuous sound level.
L_{AFmax}	A-weighted, maximum, sound level measured with a fast time-constant - maximum is not peak
L_{den}	day-evening-night noise level, the A-weighted, L_{eq} (equivalent noise level) over a whole day, but with a penalty of 10 dB(A) for night-time noise (23:00-07:00) and 5 dB(A) for evening noise (19:00-23:00), also known as the day evening night noise indicator

Appendix B - Noise Measurement Data

Table 8: Unattended measurement 15min data

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
23/04/2024	13:15:00	15min	Day	80	86	83	72
23/04/2024	13:30:00	15min	Day	80	93	83	71
23/04/2024	13:45:00	15min	Day	80	87	83	71
23/04/2024	14:00:00	15min	Day	80	86	83	72
23/04/2024	14:15:00	15min	Day	80	88	83	71
23/04/2024	14:30:00	15min	Day	80	87	83	70
23/04/2024	14:45:00	15min	Day	80	87	83	71
23/04/2024	15:00:00	15min	Day	81	87	84	71
23/04/2024	15:15:00	15min	Day	81	87	83	72
23/04/2024	15:30:00	15min	Day	80	87	83	71
23/04/2024	15:45:00	15min	Day	80	86	83	71
23/04/2024	16:00:00	15min	Day	81	87	84	73
23/04/2024	16:15:00	15min	Day	81	88	84	74
23/04/2024	16:30:00	15min	Day	81	87	84	75
23/04/2024	16:45:00	15min	Day	81	87	84	75
23/04/2024	17:00:00	15min	Day	82	87	84	74
23/04/2024	17:15:00	15min	Day	82	87	84	76
23/04/2024	17:30:00	15min	Day	81	94	84	74
23/04/2024	17:45:00	15min	Day	81	88	84	73
23/04/2024	18:00:00	15min	Day	81	87	84	73
23/04/2024	18:15:00	15min	Day	81	88	84	72
23/04/2024	18:30:00	15min	Day	80	87	83	71
23/04/2024	18:45:00	15min	Day	80	87	83	71
23/04/2024	19:00:00	15min	Evening	80	86	83	70
23/04/2024	19:15:00	15min	Evening	80	87	83	70
23/04/2024	19:30:00	15min	Evening	79	87	83	69
23/04/2024	19:45:00	15min	Evening	78	88	82	67
23/04/2024	20:00:00	15min	Evening	78	86	82	67
23/04/2024	20:15:00	15min	Evening	78	89	82	68
23/04/2024	20:30:00	15min	Evening	78	86	82	67
23/04/2024	20:45:00	15min	Evening	78	88	82	67
23/04/2024	21:00:00	15min	Evening	77	86	81	66
23/04/2024	21:15:00	15min	Evening	77	87	81	65
23/04/2024	21:30:00	15min	Evening	76	86	81	64
23/04/2024	21:45:00	15min	Evening	77	86	81	65
23/04/2024	22:00:00	15min	Evening	76	86	81	64
23/04/2024	22:15:00	15min	Evening	76	87	80	62
23/04/2024	22:30:00	15min	Evening	76	86	80	61
23/04/2024	22:45:00	15min	Evening	75	85	80	60
23/04/2024	23:00:00	15min	Night	74	86	79	58
23/04/2024	23:15:00	15min	Night	74	87	80	59
23/04/2024	23:30:00	15min	Night	73	86	79	56
23/04/2024	23:45:00	15min	Night	72	84	77	54
24/04/2024	00:00:00	15min	Night	72	86	78	54
24/04/2024	00:15:00	15min	Night	72	86	76	52
24/04/2024	00:30:00	15min	Night	71	84	76	50
24/04/2024	00:45:00	15min	Night	69	87	72	49
24/04/2024	01:00:00	15min	Night	70	84	74	50
24/04/2024	01:15:00	15min	Night	68	86	68	43
24/04/2024	01:30:00	15min	Night	67	83	68	45

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
24/04/2024	01:45:00	15min	Night	70	86	73	47
24/04/2024	02:00:00	15min	Night	68	84	70	47
24/04/2024	02:15:00	15min	Night	69	86	70	44
24/04/2024	02:30:00	15min	Night	69	86	71	45
24/04/2024	02:45:00	15min	Night	68	84	69	43
24/04/2024	03:00:00	15min	Night	70	85	74	48
24/04/2024	03:15:00	15min	Night	72	87	77	49
24/04/2024	03:30:00	15min	Night	72	85	77	47
24/04/2024	03:45:00	15min	Night	72	84	78	47
24/04/2024	04:00:00	15min	Night	73	86	79	52
24/04/2024	04:15:00	15min	Night	73	86	78	52
24/04/2024	04:30:00	15min	Night	74	85	80	53
24/04/2024	04:45:00	15min	Night	76	88	81	56
24/04/2024	05:00:00	15min	Night	76	87	81	58
24/04/2024	05:15:00	15min	Night	77	87	82	62
24/04/2024	05:30:00	15min	Night	79	88	83	66
24/04/2024	05:45:00	15min	Night	80	88	83	68
24/04/2024	06:00:00	15min	Night	82	88	84	75
24/04/2024	06:15:00	15min	Night	81	86	83	77
24/04/2024	06:30:00	15min	Night	76	81	78	74
24/04/2024	06:45:00	15min	Night	76	87	77	74
24/04/2024	07:00:00	15min	Day	75	80	76	73
24/04/2024	07:15:00	15min	Day	76	80	77	74
24/04/2024	07:30:00	15min	Day	75	79	76	72
24/04/2024	07:45:00	15min	Day	76	87	78	74
24/04/2024	08:00:00	15min	Day	76	80	77	74
24/04/2024	08:15:00	15min	Day	76	81	77	73
24/04/2024	08:30:00	15min	Day	75	87	76	73
24/04/2024	08:45:00	15min	Day	75	88	77	73
24/04/2024	09:00:00	15min	Day	74	81	75	72
24/04/2024	09:15:00	15min	Day	79	86	83	73
24/04/2024	09:30:00	15min	Day	81	87	83	78
24/04/2024	09:45:00	15min	Day	82	87	84	77
24/04/2024	10:00:00	15min	Day	81	88	84	74
24/04/2024	10:15:00	15min	Day	81	88	84	74
24/04/2024	10:30:00	15min	Day	81	87	83	73
24/04/2024	10:45:00	15min	Day	81	87	83	73
24/04/2024	11:00:00	15min	Day	81	88	83	72
24/04/2024	11:15:00	15min	Day	81	88	84	72
24/04/2024	11:30:00	15min	Day	81	87	83	72
24/04/2024	11:45:00	15min	Day	80	87	83	71
24/04/2024	12:00:00	15min	Day	81	87	83	72
24/04/2024	12:15:00	15min	Day	80	87	83	71
24/04/2024	12:30:00	15min	Day	81	87	83	72
24/04/2024	12:45:00	15min	Day	80	87	83	71
24/04/2024	13:00:00	15min	Day	81	87	84	73
24/04/2024	13:15:00	15min	Day	81	87	83	72
24/04/2024	13:30:00	15min	Day	81	87	83	73
24/04/2024	13:45:00	15min	Day	80	88	83	71
24/04/2024	14:00:00	15min	Day	81	87	84	71
24/04/2024	14:15:00	15min	Day	81	88	83	72
24/04/2024	14:30:00	15min	Day	80	90	83	72
24/04/2024	14:45:00	15min	Day	80	87	83	70
24/04/2024	15:00:00	15min	Day	81	86	83	72

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
24/04/2024	15:15:00	15min	Day	81	87	83	73
24/04/2024	15:30:00	15min	Day	81	87	83	73
24/04/2024	15:45:00	15min	Day	81	87	84	74
24/04/2024	16:00:00	15min	Day	81	87	84	73
24/04/2024	16:15:00	15min	Day	81	87	84	74
24/04/2024	16:30:00	15min	Day	81	93	84	75
24/04/2024	16:45:00	15min	Day	81	87	84	76
24/04/2024	17:00:00	15min	Day	81	88	84	75
24/04/2024	17:15:00	15min	Day	81	96	84	75
24/04/2024	17:30:00	15min	Day	81	87	84	73
24/04/2024	17:45:00	15min	Day	81	87	84	72
24/04/2024	18:00:00	15min	Day	81	87	84	72
24/04/2024	18:15:00	15min	Day	81	87	84	72
24/04/2024	18:30:00	15min	Day	81	87	83	72
24/04/2024	18:45:00	15min	Day	80	87	83	71
24/04/2024	19:00:00	15min	Evening	80	87	83	71
24/04/2024	19:15:00	15min	Evening	80	87	83	71
24/04/2024	19:30:00	15min	Evening	79	88	83	69
24/04/2024	19:45:00	15min	Evening	79	88	83	69
24/04/2024	20:00:00	15min	Evening	78	88	82	68
24/04/2024	20:15:00	15min	Evening	79	88	82	69
24/04/2024	20:30:00	15min	Evening	79	87	83	68
24/04/2024	20:45:00	15min	Evening	78	88	82	67
24/04/2024	21:00:00	15min	Evening	78	94	82	68
24/04/2024	21:15:00	15min	Evening	77	86	82	67
24/04/2024	21:30:00	15min	Evening	78	86	82	66
24/04/2024	21:45:00	15min	Evening	77	87	81	66
24/04/2024	22:00:00	15min	Evening	77	86	81	64
24/04/2024	22:15:00	15min	Evening	76	87	81	64
24/04/2024	22:30:00	15min	Evening	76	90	81	63
24/04/2024	22:45:00	15min	Evening	75	87	80	61
24/04/2024	23:00:00	15min	Night	74	85	80	58
24/04/2024	23:15:00	15min	Night	74	86	79	58
24/04/2024	23:30:00	15min	Night	73	86	79	57
24/04/2024	23:45:00	15min	Night	72	85	78	54
25/04/2024	00:00:00	15min	Night	72	85	78	51
25/04/2024	00:15:00	15min	Night	71	85	75	48
25/04/2024	00:30:00	15min	Night	71	84	76	49
25/04/2024	00:45:00	15min	Night	71	84	76	52
25/04/2024	01:00:00	15min	Night	70	84	74	46
25/04/2024	01:15:00	15min	Night	68	84	69	45
25/04/2024	01:30:00	15min	Night	70	85	72	42
25/04/2024	01:45:00	15min	Night	69	86	69	44
25/04/2024	02:00:00	15min	Night	68	86	69	45
25/04/2024	02:15:00	15min	Night	70	85	72	47
25/04/2024	02:30:00	15min	Night	70	87	73	46
25/04/2024	02:45:00	15min	Night	69	85	71	44
25/04/2024	03:00:00	15min	Night	69	84	73	45
25/04/2024	03:15:00	15min	Night	71	85	76	44
25/04/2024	03:30:00	15min	Night	72	84	78	50
25/04/2024	03:45:00	15min	Night	71	86	76	47
25/04/2024	04:00:00	15min	Night	73	87	79	52
25/04/2024	04:15:00	15min	Night	74	85	80	54
25/04/2024	04:30:00	15min	Night	74	87	80	54

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
25/04/2024	04:45:00	15min	Night	73	86	79	54
25/04/2024	05:00:00	15min	Night	76	88	81	58
25/04/2024	05:15:00	15min	Night	77	86	82	62
25/04/2024	05:30:00	15min	Night	79	93	83	65
25/04/2024	05:45:00	15min	Night	80	87	83	68
25/04/2024	06:00:00	15min	Night	82	87	84	75
25/04/2024	06:15:00	15min	Night	81	87	83	77
25/04/2024	06:30:00	15min	Night	76	81	77	74
25/04/2024	06:45:00	15min	Night	76	87	78	74
25/04/2024	07:00:00	15min	Day	76	80	77	74
25/04/2024	07:15:00	15min	Day	76	81	77	74
25/04/2024	07:30:00	15min	Day	76	82	78	74
25/04/2024	07:45:00	15min	Day	75	81	77	73
25/04/2024	08:00:00	15min	Day	80	86	82	77
25/04/2024	08:15:00	15min	Day	81	86	83	77
25/04/2024	08:30:00	15min	Day	81	87	84	76
25/04/2024	08:45:00	15min	Day	81	88	84	77
25/04/2024	09:00:00	15min	Day	80	93	82	75
25/04/2024	09:15:00	15min	Day	79	87	82	74
25/04/2024	09:30:00	15min	Day	81	87	83	78
25/04/2024	09:45:00	15min	Day	81	95	84	74
25/04/2024	10:00:00	15min	Day	81	86	83	75
25/04/2024	10:15:00	15min	Day	81	87	83	72
25/04/2024	10:30:00	15min	Day	81	87	83	73
25/04/2024	10:45:00	15min	Day	81	87	83	72
25/04/2024	11:00:00	15min	Day	80	87	83	71
25/04/2024	11:15:00	15min	Day	81	87	83	70
25/04/2024	11:30:00	15min	Day	80	86	83	71
25/04/2024	11:45:00	15min	Day	81	87	83	72
25/04/2024	12:00:00	15min	Day	81	88	83	72
25/04/2024	12:15:00	15min	Day	80	88	83	72
25/04/2024	12:30:00	15min	Day	81	86	84	74
25/04/2024	12:45:00	15min	Day	81	87	83	72
25/04/2024	13:00:00	15min	Day	81	87	83	71
25/04/2024	13:15:00	15min	Day	81	87	84	71
25/04/2024	13:30:00	15min	Day	81	87	83	72
25/04/2024	13:45:00	15min	Day	81	87	83	72
25/04/2024	14:00:00	15min	Day	80	87	83	71
25/04/2024	14:15:00	15min	Day	81	88	84	73
25/04/2024	14:30:00	15min	Day	81	87	83	73
25/04/2024	14:45:00	15min	Day	80	87	83	70
25/04/2024	15:00:00	15min	Day	80	86	83	72
25/04/2024	15:15:00	15min	Day	81	89	84	76
25/04/2024	15:30:00	15min	Day	81	88	84	73
25/04/2024	15:45:00	15min	Day	81	91	84	73
25/04/2024	16:00:00	15min	Day	81	87	84	74
25/04/2024	16:15:00	15min	Day	81	87	84	76
25/04/2024	16:30:00	15min	Day	81	94	84	76
25/04/2024	16:45:00	15min	Day	81	88	84	75
25/04/2024	17:00:00	15min	Day	81	86	83	76
25/04/2024	17:15:00	15min	Day	81	86	83	76
25/04/2024	17:30:00	15min	Day	81	86	83	76
25/04/2024	17:45:00	15min	Day	81	87	83	75
25/04/2024	18:00:00	15min	Day	81	86	83	75

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
25/04/2024	18:15:00	15min	Day	80	86	83	74
25/04/2024	18:30:00	15min	Day	80	86	83	74
25/04/2024	18:45:00	15min	Day	81	87	83	74
25/04/2024	19:00:00	15min	Evening	80	87	83	72
25/04/2024	19:15:00	15min	Evening	80	86	83	72
25/04/2024	19:30:00	15min	Evening	80	87	83	72
25/04/2024	19:45:00	15min	Evening	80	86	83	72
25/04/2024	20:00:00	15min	Evening	79	88	83	71
25/04/2024	20:15:00	15min	Evening	79	88	83	70
25/04/2024	20:30:00	15min	Evening	79	88	82	70
25/04/2024	20:45:00	15min	Evening	79	88	82	69
25/04/2024	21:00:00	15min	Evening	79	87	82	69
25/04/2024	21:15:00	15min	Evening	78	86	82	69
25/04/2024	21:30:00	15min	Evening	78	86	82	67
25/04/2024	21:45:00	15min	Evening	77	87	81	67
25/04/2024	22:00:00	15min	Evening	77	86	81	66
25/04/2024	22:15:00	15min	Evening	76	87	81	64
25/04/2024	22:30:00	15min	Evening	76	86	81	60
25/04/2024	22:45:00	15min	Evening	76	86	81	62
25/04/2024	23:00:00	15min	Night	75	86	80	62
25/04/2024	23:15:00	15min	Night	75	86	80	60
25/04/2024	23:30:00	15min	Night	74	87	80	58
25/04/2024	23:45:00	15min	Night	73	86	79	55
26/04/2024	00:00:00	15min	Night	73	87	78	57
26/04/2024	00:15:00	15min	Night	72	85	77	53
26/04/2024	00:30:00	15min	Night	73	85	78	53
26/04/2024	00:45:00	15min	Night	72	86	77	53
26/04/2024	01:00:00	15min	Night	72	87	76	50
26/04/2024	01:15:00	15min	Night	72	85	77	53
26/04/2024	01:30:00	15min	Night	71	86	75	48
26/04/2024	01:45:00	15min	Night	70	84	72	48
26/04/2024	02:00:00	15min	Night	69	86	72	49
26/04/2024	02:15:00	15min	Night	69	84	71	48
26/04/2024	02:30:00	15min	Night	70	86	73	49
26/04/2024	02:45:00	15min	Night	70	84	75	49
26/04/2024	03:00:00	15min	Night	71	85	75	51
26/04/2024	03:15:00	15min	Night	72	86	77	52
26/04/2024	03:30:00	15min	Night	72	85	78	51
26/04/2024	03:45:00	15min	Night	74	86	80	54
26/04/2024	04:00:00	15min	Night	73	87	79	55
26/04/2024	04:15:00	15min	Night	75	87	80	55
26/04/2024	04:30:00	15min	Night	75	87	80	57
26/04/2024	04:45:00	15min	Night	75	86	81	58
26/04/2024	05:00:00	15min	Night	76	88	81	58
26/04/2024	05:15:00	15min	Night	77	90	82	62
26/04/2024	05:30:00	15min	Night	79	89	83	65
26/04/2024	05:45:00	15min	Night	81	87	84	70
26/04/2024	06:00:00	15min	Night	82	88	85	74
26/04/2024	06:15:00	15min	Night	82	87	84	79
26/04/2024	06:30:00	15min	Night	82	87	84	79
26/04/2024	06:45:00	15min	Night	82	87	83	78
26/04/2024	07:00:00	15min	Day	82	87	84	78
26/04/2024	07:15:00	15min	Day	82	87	84	78
26/04/2024	07:30:00	15min	Day	82	86	84	78

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
26/04/2024	07:45:00	15min	Day	82	87	84	78
26/04/2024	08:00:00	15min	Day	82	87	84	79
26/04/2024	08:15:00	15min	Day	81	87	84	77
26/04/2024	08:30:00	15min	Day	82	88	84	77
26/04/2024	08:45:00	15min	Day	81	89	84	75
26/04/2024	09:00:00	15min	Day	81	87	84	76
26/04/2024	09:15:00	15min	Day	82	87	84	77
26/04/2024	09:30:00	15min	Day	81	87	83	76
26/04/2024	09:45:00	15min	Day	81	87	84	74
26/04/2024	10:00:00	15min	Day	81	87	84	74
26/04/2024	10:15:00	15min	Day	81	87	83	74
26/04/2024	10:30:00	15min	Day	81	87	83	74
26/04/2024	10:45:00	15min	Day	81	87	83	73
26/04/2024	11:00:00	15min	Day	80	86	83	73
26/04/2024	11:15:00	15min	Day	80	86	83	75
26/04/2024	11:30:00	15min	Day	81	87	84	75
26/04/2024	11:45:00	15min	Day	81	87	84	74
26/04/2024	12:00:00	15min	Day	81	87	83	76
26/04/2024	12:15:00	15min	Day	81	87	84	75
26/04/2024	12:30:00	15min	Day	81	87	84	74
26/04/2024	12:45:00	15min	Day	81	88	84	75
26/04/2024	13:00:00	15min	Day	81	87	84	74
26/04/2024	13:15:00	15min	Day	81	87	84	75
26/04/2024	13:30:00	15min	Day	81	87	84	75
26/04/2024	13:45:00	15min	Day	81	86	84	76
26/04/2024	14:00:00	15min	Day	81	87	83	75
26/04/2024	14:15:00	15min	Day	80	90	83	75
26/04/2024	14:30:00	15min	Day	81	88	83	75
26/04/2024	14:45:00	15min	Day	81	87	83	75
26/04/2024	15:00:00	15min	Day	81	86	83	73
26/04/2024	15:15:00	15min	Day	81	86	83	74
26/04/2024	15:30:00	15min	Day	81	87	83	71
26/04/2024	15:45:00	15min	Day	81	87	84	73
26/04/2024	16:00:00	15min	Day	81	86	83	74
26/04/2024	16:15:00	15min	Day	81	88	84	73
26/04/2024	16:30:00	15min	Day	81	89	84	74
26/04/2024	16:45:00	15min	Day	81	87	84	72
26/04/2024	17:00:00	15min	Day	81	88	84	72
26/04/2024	17:15:00	15min	Day	81	87	84	71
26/04/2024	17:30:00	15min	Day	81	88	84	72
26/04/2024	17:45:00	15min	Day	81	87	84	73
26/04/2024	18:00:00	15min	Day	81	87	84	73
26/04/2024	18:15:00	15min	Day	81	88	84	73
26/04/2024	18:30:00	15min	Day	81	88	84	73
26/04/2024	18:45:00	15min	Day	81	88	84	73
26/04/2024	19:00:00	15min	Evening	81	89	84	73
26/04/2024	19:15:00	15min	Evening	81	88	84	71
26/04/2024	19:30:00	15min	Evening	81	87	84	72
26/04/2024	19:45:00	15min	Evening	80	88	84	70
26/04/2024	20:00:00	15min	Evening	80	87	83	70
26/04/2024	20:15:00	15min	Evening	80	89	83	69
26/04/2024	20:30:00	15min	Evening	79	86	83	68
26/04/2024	20:45:00	15min	Evening	79	87	82	69
26/04/2024	21:00:00	15min	Evening	78	87	82	67

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
26/04/2024	21:15:00	15min	Evening	78	92	82	67
26/04/2024	21:30:00	15min	Evening	78	89	82	65
26/04/2024	21:45:00	15min	Evening	78	86	82	65
26/04/2024	22:00:00	15min	Evening	77	87	82	64
26/04/2024	22:15:00	15min	Evening	77	89	82	65
26/04/2024	22:30:00	15min	Evening	76	88	81	64
26/04/2024	22:45:00	15min	Evening	76	86	81	62
26/04/2024	23:00:00	15min	Night	76	86	81	63
26/04/2024	23:15:00	15min	Night	75	86	81	62
26/04/2024	23:30:00	15min	Night	76	87	81	60
26/04/2024	23:45:00	15min	Night	75	88	80	60
27/04/2024	00:00:00	15min	Night	74	86	79	56
27/04/2024	00:15:00	15min	Night	73	85	78	57
27/04/2024	00:30:00	15min	Night	74	85	80	57
27/04/2024	00:45:00	15min	Night	73	85	78	51
27/04/2024	01:00:00	15min	Night	71	87	75	49
27/04/2024	01:15:00	15min	Night	72	85	76	50
27/04/2024	01:30:00	15min	Night	72	87	77	50
27/04/2024	01:45:00	15min	Night	71	84	74	47
27/04/2024	02:00:00	15min	Night	71	86	76	48
27/04/2024	02:15:00	15min	Night	71	84	75	49
27/04/2024	02:30:00	15min	Night	71	88	74	49
27/04/2024	02:45:00	15min	Night	71	87	75	48
27/04/2024	03:00:00	15min	Night	72	86	77	50
27/04/2024	03:15:00	15min	Night	72	86	78	50
27/04/2024	03:30:00	15min	Night	72	87	77	50
27/04/2024	03:45:00	15min	Night	74	87	80	55
27/04/2024	04:00:00	15min	Night	73	87	79	52
27/04/2024	04:15:00	15min	Night	74	87	79	51
27/04/2024	04:30:00	15min	Night	74	88	79	52
27/04/2024	04:45:00	15min	Night	73	86	79	51
27/04/2024	05:00:00	15min	Night	74	90	80	51
27/04/2024	05:15:00	15min	Night	75	87	81	57
27/04/2024	05:30:00	15min	Night	76	86	81	56
27/04/2024	05:45:00	15min	Night	75	86	81	56
27/04/2024	06:00:00	15min	Night	77	88	82	61
27/04/2024	06:15:00	15min	Night	79	87	83	65
27/04/2024	06:30:00	15min	Night	80	89	84	68
27/04/2024	06:45:00	15min	Night	80	89	84	67
27/04/2024	07:00:00	15min	Day	79	88	83	64
27/04/2024	07:15:00	15min	Day	79	88	83	67
27/04/2024	07:30:00	15min	Day	80	87	84	69
27/04/2024	07:45:00	15min	Day	80	88	83	67
27/04/2024	08:00:00	15min	Day	80	87	84	67
27/04/2024	08:15:00	15min	Day	80	88	84	69
27/04/2024	08:30:00	15min	Day	81	88	84	70
27/04/2024	08:45:00	15min	Day	81	88	84	71
27/04/2024	09:00:00	15min	Day	81	87	84	71
27/04/2024	09:15:00	15min	Day	82	88	85	73
27/04/2024	09:30:00	15min	Day	82	88	84	74
27/04/2024	09:45:00	15min	Day	82	88	85	74
27/04/2024	10:00:00	15min	Day	82	87	84	75
27/04/2024	10:15:00	15min	Day	82	88	84	75
27/04/2024	10:30:00	15min	Day	82	87	84	74

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
27/04/2024	10:45:00	15min	Day	82	89	84	76
27/04/2024	11:00:00	15min	Day	82	87	84	75
27/04/2024	11:15:00	15min	Day	82	87	84	76
00/01/1900	11:30:00	15min	Day	82	88	84	75
00/01/1900	11:45:00	15min	Day	82	87	84	76
00/01/1900	12:00:00	15min	Day	82	88	84	76
00/01/1900	12:15:00	15min	Day	82	87	84	77
00/01/1900	12:30:00	15min	Day	81	86	84	76
00/01/1900	12:45:00	15min	Day	82	87	84	76
00/01/1900	13:00:00	15min	Day	82	88	84	77
00/01/1900	13:15:00	15min	Day	82	88	84	76
00/01/1900	13:30:00	15min	Day	82	87	84	75
00/01/1900	13:45:00	15min	Day	81	87	84	74
00/01/1900	14:00:00	15min	Day	82	88	84	75
00/01/1900	14:15:00	15min	Day	82	87	84	75
00/01/1900	14:30:00	15min	Day	82	88	84	76
00/01/1900	14:45:00	15min	Day	81	87	84	73
00/01/1900	15:00:00	15min	Day	81	88	84	73
00/01/1900	15:15:00	15min	Day	81	87	84	73
00/01/1900	15:30:00	15min	Day	81	89	84	73
00/01/1900	15:45:00	15min	Day	81	87	84	72
00/01/1900	16:00:00	15min	Day	81	87	84	72
00/01/1900	16:15:00	15min	Day	81	87	84	73
00/01/1900	16:30:00	15min	Day	81	89	84	72
00/01/1900	16:45:00	15min	Day	81	88	84	71
27/04/2024	17:00:00	15min	Day	81	87	84	73
27/04/2024	17:15:00	15min	Day	81	87	84	72
27/04/2024	17:30:00	15min	Day	81	87	84	72
27/04/2024	17:45:00	15min	Day	81	89	84	71
27/04/2024	18:00:00	15min	Day	81	87	84	72
27/04/2024	18:15:00	15min	Day	81	88	84	72
27/04/2024	18:30:00	15min	Day	81	93	84	71
27/04/2024	18:45:00	15min	Day	81	88	84	71
27/04/2024	19:00:00	15min	Evening	80	87	84	70
27/04/2024	19:15:00	15min	Evening	80	88	84	71
27/04/2024	19:30:00	15min	Evening	80	87	83	69
27/04/2024	19:45:00	15min	Evening	80	87	83	69
27/04/2024	20:00:00	15min	Evening	79	87	83	68
27/04/2024	20:15:00	15min	Evening	79	88	83	67
27/04/2024	20:30:00	15min	Evening	79	87	83	68
27/04/2024	20:45:00	15min	Evening	79	89	83	67
27/04/2024	21:00:00	15min	Evening	79	87	82	67
27/04/2024	21:15:00	15min	Evening	79	86	82	67
27/04/2024	21:30:00	15min	Evening	78	89	82	65
27/04/2024	21:45:00	15min	Evening	78	86	82	64
27/04/2024	22:00:00	15min	Evening	77	87	82	65
27/04/2024	22:15:00	15min	Evening	78	87	82	66
27/04/2024	22:30:00	15min	Evening	78	87	82	64
27/04/2024	22:45:00	15min	Evening	77	87	82	63
27/04/2024	23:00:00	15min	Night	77	86	82	64
27/04/2024	23:15:00	15min	Night	76	88	81	62
27/04/2024	23:30:00	15min	Night	75	89	81	59
27/04/2024	23:45:00	15min	Night	75	87	80	59
28/04/2024	00:00:00	15min	Night	75	86	81	60

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
28/04/2024	00:15:00	15min	Night	74	86	80	58
28/04/2024	00:30:00	15min	Night	75	87	81	59
28/04/2024	00:45:00	15min	Night	74	87	80	57
28/04/2024	01:00:00	15min	Night	74	86	79	56
28/04/2024	01:15:00	15min	Night	73	86	78	55
28/04/2024	01:30:00	15min	Night	72	85	77	54
28/04/2024	01:45:00	15min	Night	72	88	76	52
28/04/2024	02:00:00	15min	Night	72	86	77	50
28/04/2024	02:15:00	15min	Night	72	87	77	54
28/04/2024	02:30:00	15min	Night	71	89	75	49
28/04/2024	02:45:00	15min	Night	73	86	78	56
28/04/2024	03:00:00	15min	Night	72	87	77	54
28/04/2024	03:15:00	15min	Night	72	87	76	52
28/04/2024	03:30:00	15min	Night	71	87	73	50
28/04/2024	03:45:00	15min	Night	72	85	76	51
28/04/2024	04:00:00	15min	Night	73	86	78	50
28/04/2024	04:15:00	15min	Night	71	85	75	48
28/04/2024	04:30:00	15min	Night	72	88	77	50
28/04/2024	04:45:00	15min	Night	72	87	76	51
28/04/2024	05:00:00	15min	Night	72	87	78	53
28/04/2024	05:15:00	15min	Night	73	86	78	53
28/04/2024	05:30:00	15min	Night	74	86	80	55
28/04/2024	05:45:00	15min	Night	73	87	79	52
28/04/2024	06:00:00	15min	Night	75	88	81	59
28/04/2024	06:15:00	15min	Night	76	88	82	60
28/04/2024	06:30:00	15min	Night	77	87	82	63
28/04/2024	06:45:00	15min	Night	77	88	82	61
28/04/2024	07:00:00	15min	Day	78	88	82	63
28/04/2024	07:15:00	15min	Day	78	88	83	62
28/04/2024	07:30:00	15min	Day	78	88	82	64
28/04/2024	07:45:00	15min	Day	78	90	82	63
28/04/2024	08:00:00	15min	Day	78	88	83	63
28/04/2024	08:15:00	15min	Day	78	87	83	65
28/04/2024	08:30:00	15min	Day	79	88	83	65
28/04/2024	08:45:00	15min	Day	79	88	83	66
28/04/2024	09:00:00	15min	Day	80	87	84	66
28/04/2024	09:15:00	15min	Day	80	88	84	68
28/04/2024	09:30:00	15min	Day	81	88	84	71
28/04/2024	09:45:00	15min	Day	81	89	84	69
28/04/2024	10:00:00	15min	Day	81	88	84	70
28/04/2024	10:15:00	15min	Day	81	87	84	71
28/04/2024	10:30:00	15min	Day	82	88	84	73
28/04/2024	10:45:00	15min	Day	82	88	84	73
28/04/2024	11:00:00	15min	Day	82	88	84	73
28/04/2024	11:15:00	15min	Day	82	88	84	73
28/04/2024	11:30:00	15min	Day	82	97	85	75
28/04/2024	11:45:00	15min	Day	82	87	85	76
28/04/2024	12:00:00	15min	Day	82	88	84	75
28/04/2024	12:15:00	15min	Day	82	91	85	77
28/04/2024	12:30:00	15min	Day	82	87	84	76
28/04/2024	12:45:00	15min	Day	82	87	85	77
28/04/2024	13:00:00	15min	Day	82	88	85	76
28/04/2024	13:15:00	15min	Day	82	88	84	77
28/04/2024	13:30:00	15min	Day	82	89	84	77

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
28/04/2024	13:45:00	15min	Day	82	89	85	76
28/04/2024	14:00:00	15min	Day	82	88	84	76
28/04/2024	14:15:00	15min	Day	82	87	85	76
28/04/2024	14:30:00	15min	Day	82	89	85	77
28/04/2024	14:45:00	15min	Day	82	91	84	75
28/04/2024	15:00:00	15min	Day	82	87	84	75
28/04/2024	15:15:00	15min	Day	82	88	84	73
28/04/2024	15:30:00	15min	Day	82	87	84	74
28/04/2024	15:45:00	15min	Day	81	89	84	73
28/04/2024	16:00:00	15min	Day	81	87	84	75
28/04/2024	16:15:00	15min	Day	82	89	85	75
28/04/2024	16:30:00	15min	Day	82	87	84	74
28/04/2024	16:45:00	15min	Day	82	88	84	76
28/04/2024	17:00:00	15min	Day	82	88	84	75
28/04/2024	17:15:00	15min	Day	82	88	84	74
28/04/2024	17:30:00	15min	Day	81	88	84	72
28/04/2024	17:45:00	15min	Day	82	88	84	74
28/04/2024	18:00:00	15min	Day	82	89	84	74
28/04/2024	18:15:00	15min	Day	81	88	84	74
28/04/2024	18:30:00	15min	Day	82	88	84	75
28/04/2024	18:45:00	15min	Day	82	88	85	74
28/04/2024	19:00:00	15min	Evening	82	89	85	75
28/04/2024	19:15:00	15min	Evening	82	87	84	74
28/04/2024	19:30:00	15min	Evening	81	88	84	74
28/04/2024	19:45:00	15min	Evening	81	87	83	73
28/04/2024	20:00:00	15min	Evening	80	88	84	71
28/04/2024	20:15:00	15min	Evening	81	89	84	73
28/04/2024	20:30:00	15min	Evening	81	88	84	72
28/04/2024	20:45:00	15min	Evening	81	88	84	71
28/04/2024	21:00:00	15min	Evening	80	87	84	69
28/04/2024	21:15:00	15min	Evening	79	89	83	68
28/04/2024	21:30:00	15min	Evening	79	88	83	68
28/04/2024	21:45:00	15min	Evening	79	88	83	67
28/04/2024	22:00:00	15min	Evening	79	87	83	65
28/04/2024	22:15:00	15min	Evening	77	87	82	63
28/04/2024	22:30:00	15min	Evening	77	90	82	65
28/04/2024	22:45:00	15min	Evening	76	88	82	63
28/04/2024	23:00:00	15min	Night	76	87	81	62
28/04/2024	23:15:00	15min	Night	75	86	81	62
28/04/2024	23:30:00	15min	Night	75	86	80	60
28/04/2024	23:45:00	15min	Night	73	86	78	55
29/04/2024	00:00:00	15min	Night	73	86	78	54
29/04/2024	00:15:00	15min	Night	72	86	76	53
29/04/2024	00:30:00	15min	Night	71	87	74	53
29/04/2024	00:45:00	15min	Night	71	86	75	51
29/04/2024	01:00:00	15min	Night	71	88	72	49
29/04/2024	01:15:00	15min	Night	71	86	73	51
29/04/2024	01:30:00	15min	Night	70	86	71	50
29/04/2024	01:45:00	15min	Night	69	86	71	47
29/04/2024	02:00:00	15min	Night	69	87	70	40
29/04/2024	02:15:00	15min	Night	67	85	70	48
29/04/2024	02:30:00	15min	Night	71	85	75	49
29/04/2024	02:45:00	15min	Night	69	86	71	44
29/04/2024	03:00:00	15min	Night	72	87	77	50

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
29/04/2024	03:15:00	15min	Night	71	86	73	44
29/04/2024	03:30:00	15min	Night	72	86	76	50
29/04/2024	03:45:00	15min	Night	72	85	77	50
29/04/2024	04:00:00	15min	Night	74	87	80	54
29/04/2024	04:15:00	15min	Night	74	88	80	52
29/04/2024	04:30:00	15min	Night	76	88	81	56
29/04/2024	04:45:00	15min	Night	76	87	82	55
29/04/2024	05:00:00	15min	Night	76	87	82	58
29/04/2024	05:15:00	15min	Night	78	87	82	61
29/04/2024	05:30:00	15min	Night	80	87	84	67
29/04/2024	05:45:00	15min	Night	81	90	84	71
29/04/2024	06:00:00	15min	Night	82	88	85	76
29/04/2024	06:15:00	15min	Night	82	87	84	80
29/04/2024	06:30:00	15min	Night	81	85	83	79
29/04/2024	06:45:00	15min	Night	81	86	83	78
29/04/2024	07:00:00	15min	Day	76	82	79	72
29/04/2024	07:15:00	15min	Day	76	82	77	74
29/04/2024	07:30:00	15min	Day	76	81	77	74
29/04/2024	07:45:00	15min	Day	76	79	77	73
29/04/2024	08:00:00	15min	Day	77	82	79	75
29/04/2024	08:15:00	15min	Day	76	80	78	74
29/04/2024	08:30:00	15min	Day	78	85	80	71
29/04/2024	08:45:00	15min	Day	81	87	84	76
29/04/2024	09:00:00	15min	Day	82	88	84	77
29/04/2024	09:15:00	15min	Day	82	87	84	78
29/04/2024	09:30:00	15min	Day	82	88	84	78
29/04/2024	09:45:00	15min	Day	82	87	85	76
29/04/2024	10:00:00	15min	Day	81	88	84	75
29/04/2024	10:15:00	15min	Day	82	88	85	75
29/04/2024	10:30:00	15min	Day	82	88	85	75
29/04/2024	10:45:00	15min	Day	82	89	85	76
29/04/2024	11:00:00	15min	Day	82	88	85	75
29/04/2024	11:15:00	15min	Day	82	88	85	75
29/04/2024	11:30:00	15min	Day	82	88	84	75
29/04/2024	11:45:00	15min	Day	82	88	85	75
29/04/2024	12:00:00	15min	Day	82	88	85	74
29/04/2024	12:15:00	15min	Day	82	89	84	75
29/04/2024	12:30:00	15min	Day	82	87	84	75
29/04/2024	12:45:00	15min	Day	81	88	84	74
29/04/2024	13:00:00	15min	Day	81	88	84	74
29/04/2024	13:15:00	15min	Day	82	89	84	76
29/04/2024	13:30:00	15min	Day	81	88	84	75
29/04/2024	13:45:00	15min	Day	81	89	84	74
29/04/2024	14:00:00	15min	Day	81	88	84	74
29/04/2024	14:15:00	15min	Day	82	88	85	75
29/04/2024	14:30:00	15min	Day	82	89	84	74
29/04/2024	14:45:00	15min	Day	82	88	84	75
29/04/2024	15:00:00	15min	Day	81	89	83	75
29/04/2024	15:15:00	15min	Day	82	87	84	75
29/04/2024	15:30:00	15min	Day	82	88	84	76
29/04/2024	15:45:00	15min	Day	82	89	85	76
29/04/2024	16:00:00	15min	Day	83	88	85	77
29/04/2024	16:15:00	15min	Day	83	88	85	77
29/04/2024	16:30:00	15min	Day	82	89	85	76

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
29/04/2024	16:45:00	15min	Day	82	93	85	75
29/04/2024	17:00:00	15min	Day	82	93	85	76
29/04/2024	17:15:00	15min	Day	82	88	85	75
29/04/2024	17:30:00	15min	Day	82	88	84	75
29/04/2024	17:45:00	15min	Day	82	88	85	75
29/04/2024	18:00:00	15min	Day	82	92	85	74
29/04/2024	18:15:00	15min	Day	81	88	84	74
29/04/2024	18:30:00	15min	Day	81	87	84	73
29/04/2024	18:45:00	15min	Day	81	87	84	71
29/04/2024	19:00:00	15min	Evening	81	88	84	73
29/04/2024	19:15:00	15min	Evening	80	90	84	71
29/04/2024	19:30:00	15min	Evening	80	88	83	70
29/04/2024	19:45:00	15min	Evening	80	88	83	70
29/04/2024	20:00:00	15min	Evening	80	87	83	69
29/04/2024	20:15:00	15min	Evening	79	88	83	70
29/04/2024	20:30:00	15min	Evening	79	87	83	68
29/04/2024	20:45:00	15min	Evening	78	88	82	67
29/04/2024	21:00:00	15min	Evening	78	87	82	65
29/04/2024	21:15:00	15min	Evening	78	87	82	68
29/04/2024	21:30:00	15min	Evening	78	86	82	66
29/04/2024	21:45:00	15min	Evening	77	87	82	65
29/04/2024	22:00:00	15min	Evening	77	87	82	63
29/04/2024	22:15:00	15min	Evening	76	86	81	62
29/04/2024	22:30:00	15min	Evening	76	86	81	62
29/04/2024	22:45:00	15min	Evening	75	87	81	59
29/04/2024	23:00:00	15min	Night	75	88	81	58
29/04/2024	23:15:00	15min	Night	75	89	80	57
29/04/2024	23:30:00	15min	Night	73	86	79	51
29/04/2024	23:45:00	15min	Night	73	88	78	54
30/04/2024	00:00:00	15min	Night	72	86	78	52
30/04/2024	00:15:00	15min	Night	72	86	77	52
30/04/2024	00:30:00	15min	Night	71	88	74	47
30/04/2024	00:45:00	15min	Night	71	86	75	49
30/04/2024	01:00:00	15min	Night	70	86	72	47
30/04/2024	01:15:00	15min	Night	70	86	71	46
30/04/2024	01:30:00	15min	Night	71	86	72	43
30/04/2024	01:45:00	15min	Night	69	84	71	42
30/04/2024	02:00:00	15min	Night	70	87	73	49
30/04/2024	02:15:00	15min	Night	71	86	73	50
30/04/2024	02:30:00	15min	Night	68	85	70	45
30/04/2024	02:45:00	15min	Night	67	83	70	43
30/04/2024	03:00:00	15min	Night	69	85	72	48
30/04/2024	03:15:00	15min	Night	71	85	76	49
30/04/2024	03:30:00	15min	Night	71	85	76	49
30/04/2024	03:45:00	15min	Night	72	86	78	51
30/04/2024	04:00:00	15min	Night	72	87	78	52
30/04/2024	04:15:00	15min	Night	74	86	79	52
30/04/2024	04:30:00	15min	Night	74	87	80	55
30/04/2024	04:45:00	15min	Night	75	86	80	55
30/04/2024	05:00:00	15min	Night	75	86	81	55
30/04/2024	05:15:00	15min	Night	77	88	82	60
30/04/2024	05:30:00	15min	Night	79	89	83	66
30/04/2024	05:45:00	15min	Night	81	88	84	70
30/04/2024	06:00:00	15min	Night	82	87	84	75

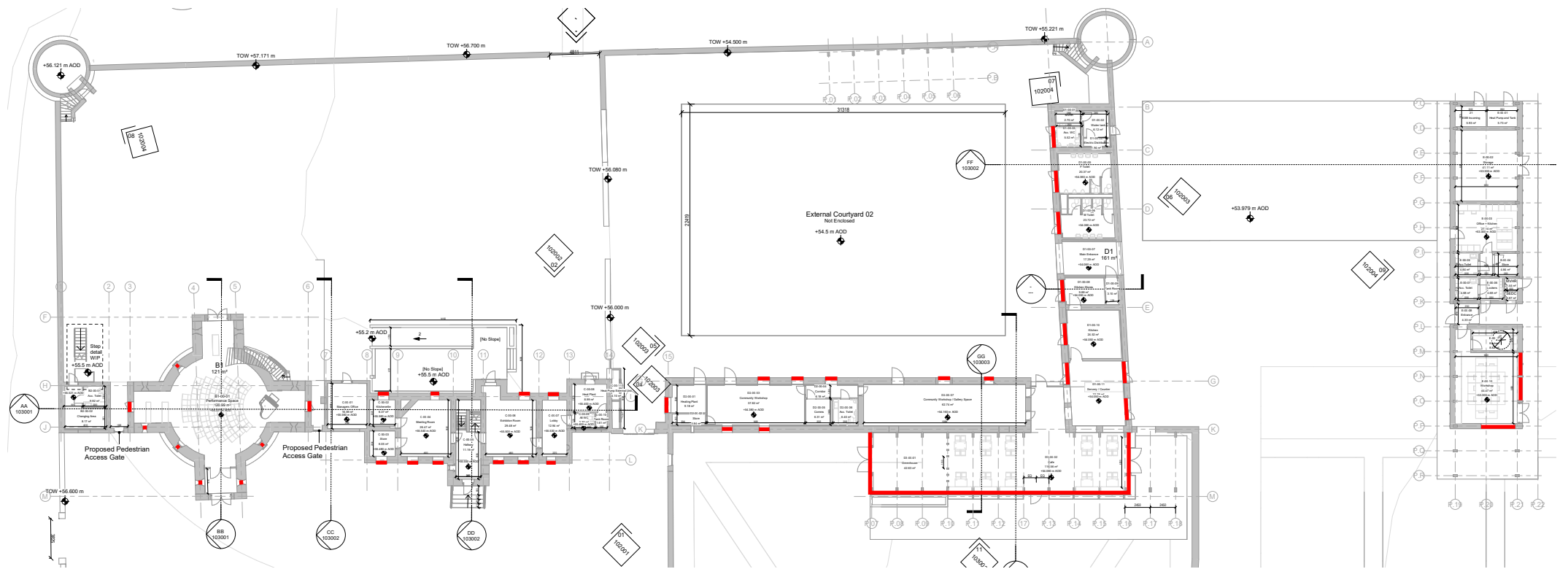
Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
30/04/2024	06:15:00	15min	Night	81	90	83	78
30/04/2024	06:30:00	15min	Night	77	82	78	74
30/04/2024	06:45:00	15min	Night	77	84	79	75
30/04/2024	07:00:00	15min	Day	77	82	79	75
30/04/2024	07:15:00	15min	Day	77	81	79	74
30/04/2024	07:30:00	15min	Day	78	84	79	76
30/04/2024	07:45:00	15min	Day	77	82	79	75
30/04/2024	08:00:00	15min	Day	77	82	79	74
30/04/2024	08:15:00	15min	Day	77	83	79	74
30/04/2024	08:30:00	15min	Day	78	83	80	74
30/04/2024	08:45:00	15min	Day	81	88	84	76
30/04/2024	09:00:00	15min	Day	82	88	85	78
30/04/2024	09:15:00	15min	Day	83	88	85	79
30/04/2024	09:30:00	15min	Day	83	88	85	77
30/04/2024	09:45:00	15min	Day	82	88	85	76
30/04/2024	10:00:00	15min	Day	82	89	85	74
30/04/2024	10:15:00	15min	Day	82	88	84	74
30/04/2024	10:30:00	15min	Day	82	88	84	75
30/04/2024	10:45:00	15min	Day	81	87	84	75
30/04/2024	11:00:00	15min	Day	81	87	84	73
30/04/2024	11:15:00	15min	Day	81	88	84	74
30/04/2024	11:30:00	15min	Day	81	87	84	75
30/04/2024	11:45:00	15min	Day	81	88	84	73
30/04/2024	12:00:00	15min	Day	81	88	84	74
30/04/2024	12:15:00	15min	Day	81	87	84	73
30/04/2024	12:30:00	15min	Day	82	88	84	75
30/04/2024	12:45:00	15min	Day	82	87	84	75
30/04/2024	13:00:00	15min	Day	81	93	84	73
30/04/2024	13:15:00	15min	Day	81	87	84	75
30/04/2024	13:30:00	15min	Day	82	88	84	74
30/04/2024	13:45:00	15min	Day	81	88	84	74
30/04/2024	14:00:00	15min	Day	81	87	84	74
30/04/2024	14:15:00	15min	Day	81	87	84	73
30/04/2024	14:30:00	15min	Day	81	88	84	74
30/04/2024	14:45:00	15min	Day	80	87	83	73
30/04/2024	15:00:00	15min	Day	81	87	84	74
30/04/2024	15:15:00	15min	Day	82	87	84	75
30/04/2024	15:30:00	15min	Day	82	87	84	74
30/04/2024	15:45:00	15min	Day	81	88	84	73
30/04/2024	16:00:00	15min	Day	82	88	84	75
30/04/2024	16:15:00	15min	Day	81	87	84	75
30/04/2024	16:30:00	15min	Day	82	91	84	76
30/04/2024	16:45:00	15min	Day	82	88	84	75
30/04/2024	17:00:00	15min	Day	82	88	84	74
30/04/2024	17:15:00	15min	Day	82	88	84	76
30/04/2024	17:30:00	15min	Day	82	94	84	74
30/04/2024	17:45:00	15min	Day	81	88	84	72
30/04/2024	18:00:00	15min	Day	81	88	84	72
30/04/2024	18:15:00	15min	Day	81	88	84	72
30/04/2024	18:30:00	15min	Day	81	89	84	71
30/04/2024	18:45:00	15min	Day	80	87	83	71
30/04/2024	19:00:00	15min	Evening	79	87	83	67
30/04/2024	19:15:00	15min	Evening	80	87	83	69
30/04/2024	19:30:00	15min	Evening	79	87	83	66

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
30/04/2024	19:45:00	15min	Evening	79	88	83	63
30/04/2024	20:00:00	15min	Evening	78	86	82	65
30/04/2024	20:15:00	15min	Evening	78	88	82	65
30/04/2024	20:30:00	15min	Evening	79	87	82	68
30/04/2024	20:45:00	15min	Evening	78	87	82	68
30/04/2024	21:00:00	15min	Evening	78	87	82	68
30/04/2024	21:15:00	15min	Evening	78	86	82	68
30/04/2024	21:30:00	15min	Evening	77	87	82	65
30/04/2024	21:45:00	15min	Evening	77	87	81	64
30/04/2024	22:00:00	15min	Evening	77	86	81	64
30/04/2024	22:15:00	15min	Evening	77	86	81	65
30/04/2024	22:30:00	15min	Evening	76	86	81	60
30/04/2024	22:45:00	15min	Evening	75	86	81	62
30/04/2024	23:00:00	15min	Night	75	86	80	59
30/04/2024	23:15:00	15min	Night	74	86	80	59
30/04/2024	23:30:00	15min	Night	74	87	79	58
30/04/2024	23:45:00	15min	Night	74	87	79	59
01/05/2024	00:00:00	15min	Night	74	85	79	57
01/05/2024	00:15:00	15min	Night	72	86	76	53
01/05/2024	00:30:00	15min	Night	71	85	75	51
01/05/2024	00:45:00	15min	Night	71	87	75	50
01/05/2024	01:00:00	15min	Night	71	86	73	47
01/05/2024	01:15:00	15min	Night	70	85	72	47
01/05/2024	01:30:00	15min	Night	70	87	71	46
01/05/2024	01:45:00	15min	Night	69	86	69	45
01/05/2024	02:00:00	15min	Night	70	89	71	46
01/05/2024	02:15:00	15min	Night	68	85	69	45
01/05/2024	02:30:00	15min	Night	70	85	73	46
01/05/2024	02:45:00	15min	Night	70	86	73	47
01/05/2024	03:00:00	15min	Night	71	86	74	47
01/05/2024	03:15:00	15min	Night	71	87	73	47
01/05/2024	03:30:00	15min	Night	73	86	79	51
01/05/2024	03:45:00	15min	Night	72	87	78	51
01/05/2024	04:00:00	15min	Night	74	88	79	53
01/05/2024	04:15:00	15min	Night	74	86	80	55
01/05/2024	04:30:00	15min	Night	74	86	80	53
01/05/2024	04:45:00	15min	Night	76	87	81	59
01/05/2024	05:00:00	15min	Night	76	86	81	60
01/05/2024	05:15:00	15min	Night	77	87	82	64
01/05/2024	05:30:00	15min	Night	79	88	83	66
01/05/2024	05:45:00	15min	Night	81	87	84	70
01/05/2024	06:00:00	15min	Night	82	87	84	76
01/05/2024	06:15:00	15min	Night	82	87	84	79
01/05/2024	06:30:00	15min	Night	81	86	83	79
01/05/2024	06:45:00	15min	Night	81	86	83	78
01/05/2024	07:00:00	15min	Day	81	87	83	78
01/05/2024	07:15:00	15min	Day	78	85	80	75
01/05/2024	07:30:00	15min	Day	81	85	82	77
01/05/2024	07:45:00	15min	Day	81	86	83	78
01/05/2024	08:00:00	15min	Day	81	86	83	78
01/05/2024	08:15:00	15min	Day	81	85	82	78
01/05/2024	08:30:00	15min	Day	81	86	83	77
01/05/2024	08:45:00	15min	Day	80	87	83	75
01/05/2024	09:00:00	15min	Day	79	87	83	75

Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
01/05/2024	09:15:00	15min	Day	82	86	84	76
01/05/2024	09:30:00	15min	Day	81	87	84	75
01/05/2024	09:45:00	15min	Day	81	88	84	75
01/05/2024	10:00:00	15min	Day	81	87	84	74
01/05/2024	10:15:00	15min	Day	81	87	84	74
01/05/2024	10:30:00	15min	Day	80	86	83	72
01/05/2024	10:45:00	15min	Day	80	89	83	71
01/05/2024	11:00:00	15min	Day	80	87	83	71
01/05/2024	11:15:00	15min	Day	81	87	83	72
01/05/2024	11:30:00	15min	Day	80	87	83	72
01/05/2024	11:45:00	15min	Day	80	87	83	71
01/05/2024	12:00:00	15min	Day	80	86	83	71
01/05/2024	12:15:00	15min	Day	80	86	83	71
01/05/2024	12:30:00	15min	Day	81	87	83	72
01/05/2024	12:45:00	15min	Day	80	87	83	70
01/05/2024	13:00:00	15min	Day	80	88	83	72
01/05/2024	13:15:00	15min	Day	80	89	83	71
01/05/2024	13:30:00	15min	Day	80	88	83	70
01/05/2024	13:45:00	15min	Day	80	87	83	71
01/05/2024	14:00:00	15min	Day	80	87	83	71
01/05/2024	14:15:00	15min	Day	80	86	83	71
01/05/2024	14:30:00	15min	Day	80	87	83	71
01/05/2024	14:45:00	15min	Day	80	87	83	71
01/05/2024	15:00:00	15min	Day	80	87	83	71
01/05/2024	15:15:00	15min	Day	81	86	83	72
01/05/2024	15:30:00	15min	Day	81	87	83	73
01/05/2024	15:45:00	15min	Day	81	87	84	72
01/05/2024	16:00:00	15min	Day	81	87	83	74
01/05/2024	16:15:00	15min	Day	81	87	84	74
01/05/2024	16:30:00	15min	Day	81	87	84	74
01/05/2024	16:45:00	15min	Day	81	93	84	73
01/05/2024	17:00:00	15min	Day	81	87	84	73
01/05/2024	17:15:00	15min	Day	81	87	83	74
01/05/2024	17:30:00	15min	Day	81	87	84	74
01/05/2024	17:45:00	15min	Day	81	87	84	76
01/05/2024	18:00:00	15min	Day	81	87	84	74
01/05/2024	18:15:00	15min	Day	81	87	84	73
01/05/2024	18:30:00	15min	Day	81	88	84	72
01/05/2024	18:45:00	15min	Day	81	88	83	72
01/05/2024	19:00:00	15min	Evening	80	87	83	72
01/05/2024	19:15:00	15min	Evening	80	87	83	70
01/05/2024	19:30:00	15min	Evening	80	88	83	71
01/05/2024	19:45:00	15min	Evening	79	86	83	69
01/05/2024	20:00:00	15min	Evening	78	86	82	68
01/05/2024	20:15:00	15min	Evening	78	88	83	68
01/05/2024	20:30:00	15min	Evening	79	87	83	67
01/05/2024	20:45:00	15min	Evening	78	87	82	66
01/05/2024	21:00:00	15min	Evening	78	86	82	67
01/05/2024	21:15:00	15min	Evening	77	86	82	66
01/05/2024	21:30:00	15min	Evening	77	86	82	65
01/05/2024	21:45:00	15min	Evening	77	86	81	64
01/05/2024	22:00:00	15min	Evening	76	86	81	63
01/05/2024	22:15:00	15min	Evening	77	90	81	63
01/05/2024	22:30:00	15min	Evening	76	87	81	61

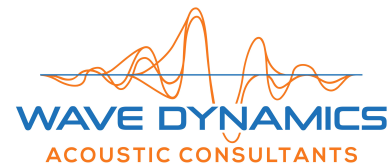
Date	Time	Duration	Period	Recorded Noise Levels			
				L _{Aeq,15min}	L _{AFmax,15min}	L _{AF10,15min}	L _{AF90,15min}
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01/05/2024	23:00:00	15min	Night	75	86	80	57
01/05/2024	23:15:00	15min	Night	74	88	80	60
01/05/2024	23:30:00	15min	Night	73	88	79	57
01/05/2024	23:45:00	15min	Night	73	86	78	53
02/05/2024	00:00:00	15min	Night	72	86	77	53
02/05/2024	00:15:00	15min	Night	71	85	76	50
02/05/2024	00:30:00	15min	Night	71	85	74	50
02/05/2024	00:45:00	15min	Night	69	84	71	46
02/05/2024	01:00:00	15min	Night	68	86	70	46
02/05/2024	01:15:00	15min	Night	70	84	73	50
02/05/2024	01:30:00	15min	Night	70	85	74	46
02/05/2024	01:45:00	15min	Night	70	83	73	47
02/05/2024	02:00:00	15min	Night	70	85	73	45
02/05/2024	02:15:00	15min	Night	68	85	70	47
02/05/2024	02:30:00	15min	Night	70	83	74	51
02/05/2024	02:45:00	15min	Night	69	83	73	49
02/05/2024	03:00:00	15min	Night	70	83	74	47
02/05/2024	03:15:00	15min	Night	71	85	74	50
02/05/2024	03:30:00	15min	Night	72	85	78	49
02/05/2024	03:45:00	15min	Night	74	86	80	53
02/05/2024	04:00:00	15min	Night	74	86	80	55
02/05/2024	04:15:00	15min	Night	74	88	80	55
02/05/2024	04:30:00	15min	Night	75	88	81	57
02/05/2024	04:45:00	15min	Night	75	87	81	55
02/05/2024	05:00:00	15min	Night	77	88	82	59
02/05/2024	05:15:00	15min	Night	78	87	83	63
02/05/2024	05:30:00	15min	Night	79	88	83	67
02/05/2024	05:45:00	15min	Night	81	89	84	70
02/05/2024	06:00:00	15min	Night	82	88	85	75
02/05/2024	06:15:00	15min	Night	82	87	84	79
02/05/2024	06:30:00	15min	Night	81	85	83	78
02/05/2024	06:45:00	15min	Night	77	85	79	75
02/05/2024	07:00:00	15min	Day	77	81	78	75
02/05/2024	07:15:00	15min	Day	76	85	78	74
02/05/2024	07:30:00	15min	Day	77	81	78	74
02/05/2024	07:45:00	15min	Day	78	88	81	75
02/05/2024	08:00:00	15min	Day	82	87	84	79
02/05/2024	08:15:00	15min	Day	82	87	84	77
02/05/2024	08:30:00	15min	Day	82	88	84	78
02/05/2024	08:45:00	15min	Day	82	88	84	77
02/05/2024	09:00:00	15min	Day	82	87	84	77
02/05/2024	09:15:00	15min	Day	82	87	84	78
02/05/2024	09:30:00	15min	Day	82	87	84	78
02/05/2024	09:45:00	15min	Day	82	88	84	76
02/05/2024	10:00:00	15min	Day	81	87	84	75

Appendix C- Façade Sound Insulation Requirements



Glazed Elements Specification

— 29 dB R_w



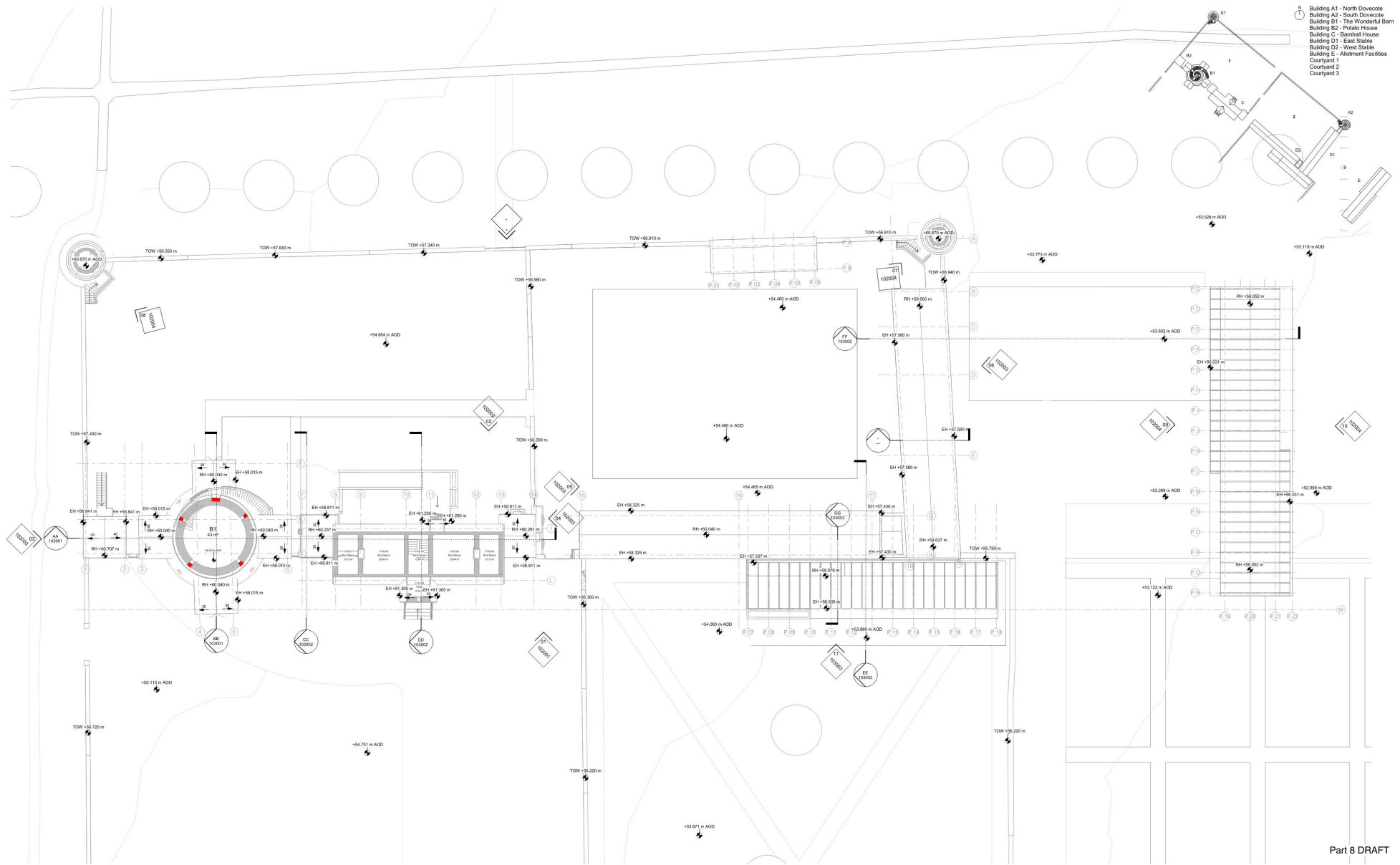
Project: Wonderful Barn

Title: Glazing Markup - Ground Floor

Prepared By: Ryan Cox

Reviewed By: James Cousins

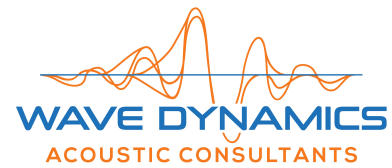
Date: 27/05/2024



Part 8 DRAFT

Glazed Elements Specification

— 29 dB R_w



Project: Wonderful Barn

Title: Glazing Markup - Second Floor

Prepared By: Ryan Cox

Reviewed By: James Cousins

Date: 27/05/2024