SHEPPEY UNITED FOOTBALL CLUB

HOLM PLACE, QUEENBOROUGH ROAD, HALFWAY

SHEERNESS, KENT

SPORTS PITCH - PROPOSED EXTENDED HOURS

NOISE IMPACT ASSESSMENT

Report No. MRL/100/2171.1v1
June 2025

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NOISE IMPACT ASSESSMENT

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CONTENTS

1.0 INTRODUCTION

1.1 MRL Acoustics Limited was commissioned by Padro Ltd to assess the impact of noise in relation to a recent planning application for extended lighting times, resulting in an extension of the sport activities operating hours of the artificial grass football pitch, at the Sheppey United Football Club site, Holm Place, Queenborough Road, Halfway, Sheerness, Kent.

1.2 We understand that a 2010 approval (10/0882) granted permission for the lights to be on as shown below:-

- 08:00 - 21:00 hours Monday to Friday;
- 08:00 - 20:00 hours Saturday;
- 08:00 - 18:00 hours Sundays and Bank Holidays.

1.3 The 2014 application (14/0457) granted a variation of the relevant planning condition to allow the lights to be on until 22:00 hours 52 times a year on a Tuesday or a Thursday.

1.4 The applicant has since applied for this to be varied further to allow for the lights to be on and the pitch used between 08:00 - 21:30 hours Monday to Friday; to be allowed to remain on until 22:00 hours 52 times a year on a Tuesday or a Thursday and for Saturdays, Sundays and Bank Holidays to remain as approved within the 10/0882 application.

1.5 Therefore, the noise impact assessment is required to cover the proposed extended 30-minute period from 21:00 hours until 21:30 hours, Monday to Friday.

1.6 Our assessment has involved the following scope of work:-

- measurements of the ambient noise climate at the site boundary with the nearest affected residential properties over a representative time period up to 21:00 hours with the football pitches in use;

- additional noise measurements of the ambient noise climate at the nearest affected residential boundary up until 21:30 hours after the pitch ceased to be used;

- assessment of the noise impact from the pitch being used later in the evening based on our measured ambient noise levels in accordance with the National Planning Policy Framework; the Noise Policy Statement For England; BS 8233 : 2014; and Sports England : Design Guidance Note – Artificial Grass Pitch (AGP) Acoustics – Planning Implications : 2015;

- providing recommendations for any additional noise mitigation measures, if necessary.

1.7 This report details our findings and our recommendations.

1.8 The noise survey and report were carried out and prepared by Matthew Lawrence who has over 30 years' experience in the acoustic industry and an MSc and Diploma in Acoustics & Noise Control, and who is a Member of the Institute of Acoustics (IOA). MRL Acoustics Ltd is also a member of the Association of Noise Consultants (ANC).

1.9 Noise levels referred to in the text have been rounded to the nearest whole decibel (dB), as fractions of decibels are imperceptible.

1.10 An explanation of acoustical terms used in this report is provided in Appendix I.

2.0 DESCRIPTION OF THE SITE

2.1 Sheppey United Football Club is located along Holm Farm Lane, just to the north of the A250 Queenborough Road. The football pitch consists of artificial grass and is suitable to be used all year round in conjunction with the perimeter floodlighting.

2.2 There are 2 no. existing grass pitches directly to the west of the man pitch, and to the east is a small spectator stand, a bar and the club car park.

2.3 The pitch has been provided with approximately 3m high solid perimeter screening along the southern and western boundaries.

2.4 The nearest affected residential properties to the pitch are situated to the south, approximately 50m distance from the southern edge of the pitch to the residential facades, as indicated outlined in red on the site plan below:-

3.0 NOISE LEVEL SURVEY

3.1 A noise level survey was carried out at the site from 19:30 hours until 21:30 hours on Wednesday 14th May 2025 in order to obtain typical source noise data for the pitch in full use during an adult football match.

3.2 The noise measurements of the ambient noise climate were continued from 21:00 hours to 21:30 hours after the match had ceased and the club had closed in order to determine the existing noise climate experienced at the nearest affected residential properties during the proposed extended usage time up until 21:30 hours.

3.3 The noise measurements were carried out at the site boundary with the nearest affected dwellings, as shown in the site plan below:-

3.4 The measurement location chosen was approximately in line with the centre of the southern end goal mouth and is considered to be representative of the existing ambient noise climate experienced within the garden areas of the nearest residential properties to the south of the pitch as it was behind the 3m tall perimeter screening.

3.5 The noise measurements of the football match in progress consisted of 6 no. consecutive 15-minute samples of noise. The ambient noise levels measured after the match had ended and the pitch was not in use consisted of 2 no. consecutive 15-minute periods.

3.6 The noise survey was carried out using a Rion NA-28 'Class 1' Sound Level Meter (serial no. 01291241) mounted on a tripod. The calibration level of the meter was checked before and after the survey to a level of 94.0 dB with a Rion NC-74 sound calibrator (serial no. 35094450) with no variation in the levels observed.

3.7 The microphone height was approximately 1.5m above ground level and was fitted with a Rion WS-10 windshield at all times.

3.8 Details of the equipment used during the noise level survey are shown in Table 1. Current calibration certificates for the equipment can be provided if required.

Table 1: Details of Equipment Used During Noise Survey

Equipment Description	Manufacturer	Type/Number	Serial Number	Date of Expiration of Calibration	Calibration Certification Number
Sound Level Meter	Rion	Type NA-28	01291241	01/07/2026	TCRT24/1484
Microphone	Rion	UC-59	01683	01/07/2026	TCRT24/1484
Pre-Amplifier	Rion	NH-23	81273	01/07/2026	TCRT24/1484
Calibrator	Rion	Type NC-74	35094450	01/07/2026	TCRT24/1480

The weather conditions for the survey were generally warm and dry with a light breeze throughout and are shown in Table 2 below:-

Table 2: Weather Conditions During Noise Survey

Date	Temperature (°C)		Wind Speed (m/s)	Wind Direction	Rainfall (mm)	Cloud Cover (%)	Acceptable Conditions
	Start	End					
14/05/2025	14	12	1.2	SW	0	10	Yes

3.9 The weather conditions were measured on-site using a Kestrel 2000 hand-held weather meter and supported by weather data from the Meteorological Office weather app relating to local weather conditions for this area.

3.10 The noise survey was carried out in general accordance with the requirements outlined in BS 7455 – 1 : 2003 for environmental noise surveys.

3.11 The measured results are 'free-field' levels as the microphone was not within 3.5m of a reflective surface (other than the ground) and therefore a -2.5 dB façade correction is not applicable to the measured results to convert them to 'free-field' levels in order to assess the noise impact in accordance with BS 8233 : 2014.

3.12 It should be noted that for the pitch noise level survey that the measurements included ball strikes, ball impacts on the perimeter fencing, referee whistles and voices and shouts from both players and spectators.

3.13 For the late evening ambient noise level survey after the match had ended, the measurements included occasional cars in the car park, distant road traffic noise, along with some intermittent noise from dogs barking.

Results

3.14 The measured 'free-field' levels are detailed in Appendix II at the end of this report and are summarised in Table 3 below:-

Table 3: Summary of Ambient Noise Levels at Site Boundary With Nearest Dwellings

Measurement Description	Noise Levels, dB(A)			
	Average L_{Aeq}	Average L_{Amax}	Average L_{A10}	Average L_{A90}
Pitch In Use (Up to 21:00)	51	70	53	42
Pitch Not In Use (Up to 21:30)	45	66	46	39

4.0 NOISE STANDARDS

National Planning Policy Framework (NPPF)

4.1 National Government Guidance is available in the form of the National Planning Policy Framework (NPPF) – December 2024. The NPPF sets out the Government's planning policies for England and how these are expected to be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced.

4.2 Paragraph 187 of Section 15 of the NPPF, 'Conserving and enhancing the natural environment' provides general guidance regarding planning and noise. It states:-

"Planning policies and decisions should contribute to and enhance the natural and local environment by:-

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible,

help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."

4.3 Paragraph 198 of Section 15 of the NPPF, 'Conserving and enhancing the natural environment' goes on to state:-

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:-

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and

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

The Noise Policy Statement for England 2010 (NPSE)

4.4 The NPSE sets out the long term vision for government noise policy which is to:-

"Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development."

4.5 This is supported by the following aims:-

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:-

- avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life."

4.6 The first aim of the NPSE should be read in the context of Government policy on sustainable development indicating that significant adverse effects on health and quality of life should be avoided while accommodating the principles of sustainable development.

4.7 The second aim of the NPSE is applicable where the impact falls between LOAEL and SOAEL (see Section 4.9 below) requiring that all reasonable measures to mitigate and minimise adverse impacts on health and quality of life be implemented while accommodating the principles of sustainable development. This does not imply that any adverse effects cannot occur.

4.8 The third aim of the NPSE is to actively improve health and quality of life through effective management of noise within the context of Government policy on sustainable development wherever it is possible and reasonable to do so.

4.9 The NPSE applies the following concepts adapted from toxicology:-

NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur.

4.10 It should be noted that there are no numerical values for these concepts defined in the NPSE. There is also no single objective noise-based measure that defines Observed Effect Levels that is applicable to all sources of noise in all situations and consequently, the levels are likely to be different for different noise sources, for different receptors and at different times.

4.11 Table 4 below summarises the noise exposure hierarchy outline above, based on the likely average response:-

Table 4: Noise Exposure Hierarchy + Likely Average Response

Perception	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not Noticeable	No Effect	No Observed Effect	No specific measures required
Noticeable and not Intrusive	Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required

Perception	Examples of Outcomes	Increasing Effect Level	Action
Lowest Observed Adverse Effect Level			
Noticeable and Intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

British Standard 8233 : 2014

4.12 Guidance on acoustic design goals for new residential developments is set out in British Standard 8233 : 2014 *'Guidance on sound insulation and noise reduction for buildings'*. The World Health Organisation *'Guidelines for Community Noise'* and the ProPG guidance generally concurs with the recommendations of BS 8233 : 2014. The criteria are summarised in Table 5 below:-

Table 5: BS 8233 Recommended Acoustic Design Criteria

Location	Internal Noise Levels	
	Daytime (07:00 – 23:00)	**Night-time (23:00 – 07:00)**
Living Room	35 dB L_{Aeq}	-
Dining Room	40 dB L_{Aeq}	-
Bedroom	35 dB L_{Aeq}	30 dB L_{Aeq}
Garden	Desired Limit Not Exceeding 50 dB L_{Aeq} Upper Limit 55 dB L_{Aeq}	

Sport England : Design Guidance Note – Artificial Grass Pitch (AGP) Acoustics – Planning Implications : 2015

4.13 The above document offers a simple explanation for those wishing to develop such facilities and provides a more consistent approach for Local Authority noise assessments and limits that might be set for proposals adjacent to sensitive residential areas. It highlights the importance of considering the potential for disturbance to neighbours early in the planning and design stages.

4.14 The sections relating to noise levels and predicted noise levels are reproduced on the following pages:-

Artificial Grass Pitch (AGP) Acoustics - Planning Implications

Design Guidance Note

3.0 Relevant Noise Guidance

With no specific noise criteria for an AGP, the following documents are considered the most relevant and the most commonly applied for the assessment of AGP noise.

World Health Organisation 'Guidelines for Community Noise'

The World Health Organisation (WHO) *'Guidelines for Community Noise'* published in 1999 gives the following description of community noise:

> *Community noise (also called environmental noise, residential noise or domestic noise) is defined as noise emitted from all sources except noise at the industrial workplace. Main sources of community noise include road, rail and air traffic, industries, construction and public work, and the neighbourhood. Typical neighbourhood noise comes from premises and installations related to the catering trade (restaurant, cafeterias, discotheques, etc.); from live or recorded music; sport events including motor sports; playgrounds; car parks; and domestic animals such as barking dogs.*

14

For noise levels internally and externally to dwellings it states:

> *To enable casual conversation indoors during daytime, the sound level of interfering noise should not exceed 35 dB L_{Aeq}. The maximum sound pressure level should be measured with the sound pressure meter set at "fast".*

Based on a 15 decibel sound reduction of a partially open window, the noise level outside a residential property during the daytime about 1 metre from façades of living spaces should not exceed 50 dB L_{Aeq}.

The WHO document also provides guidance for outdoor living areas. It states that to avoid 'moderate annoyance' during the daytime and evening the noise level should not exceed 50 dB $L_{Aeq(T)}$.

World Health Organisation guidelines for residential development are typically calculated over a 16 hour daytime period. For an artificial grass pitch, a 16 hour assessment period may not truly reflect the noise impact as it takes into account times of use and non-use. It is suggested an appropriate assessment time period is for one hour, $L_{Aeq(1\ hour)}$ as this is typically the time period for a community sports session on an AGP.

This WHO criteria was reviewed in a report by the National Physical Laboratory (reference CMAM16) which states:

> *Exceedance of the WHO guideline values does not necessarily imply significant noise impact and indeed, it may be that significant impacts do not occur until much higher levels of noise exposure are reached*

Therefore it is not necessarily the case that where these levels are exceeded, the noise will adversely affect nearby residential properties.

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Artificial Grass Pitch (AGP) Acoustics - Planning Implications

Design Guidance Note

Comparison of AGP noise against existing noise climate

In some circumstances, an alternative assessment methodology may be appropriate such as where there are changes to an existing natural turf or AGP pitch, or where existing noise levels in the area are high.

The IOA/IEMA [3] Working Party Consultation Draft 2002 categorises the significance of a change in noise level. Although this is currently at a draft stage, it provides some helpful guidance on the impact of changes in noise levels.

A 'slight' impact is considered for an increase less than 3 decibels. This generally conforms with the withdrawn Planning Policy Guidance Document 24 statement that a change of 3 dB(A) is the minimum perceptible under normal conditions.

Where noise from the new source (the AGP) does not exceed the existing noise climate the increase in noise will be no more than 3 decibels. This is the minimum that can normally be perceived. The noise levels are both to be measured using the L_{Aeq} parameter over the same time period, T.

In some instances it may be beneficial to use both a comparative and absolute assessment method.

Typical noise levels

Noise levels were measured during nine sports sessions on three separate AGPs. The sessions included football, hockey and rugby and participation by men, women and children. The purpose was to determine a 'typical' noise level generated from a 'typical' AGP sports session.

Noise level measurements were taken at a distance of 10 metres behind the mid-way points along goal lines and sidelines. They were found to be highest behind the sideline halfway line.

The most significant noise levels were found to be generally derived from the voices of players, with the exception of hockey where impact noises of balls hitting perimeter strike boards and goal back boards were more noticeable. Such impact noises can be mitigated by incorporating shock absorbing noise reduction measures. Assuming such mitigation measures, the most significant noise source from typical AGP sports sessions is therefore voice and as such, a typical noise level can be determined.

The most significant noise source from typical AGP sports sessions is voice

From the measurement data, a typical free-field noise level of 58 dB $L_{Aeq(1\ hour)}$ [4] at a distance of 10 metres (m) from the sideline halfway marking has been determined as representative for noise from an AGP.

A typical free-field noise level from an AGP (at 10 m from the sideline halfway marking)

= 58 dB $L_{Aeq(1\ hour)}$

[3] Institute of Acoustics (IOA) / Institute of Environmental Management & Assessment (IEMA)

[4] Equivalent noise level $L_{Aeq(T)}$, is an average of the varying noise levels over a time period T, in this case, 1 hour as the duration of a typical AGP session.

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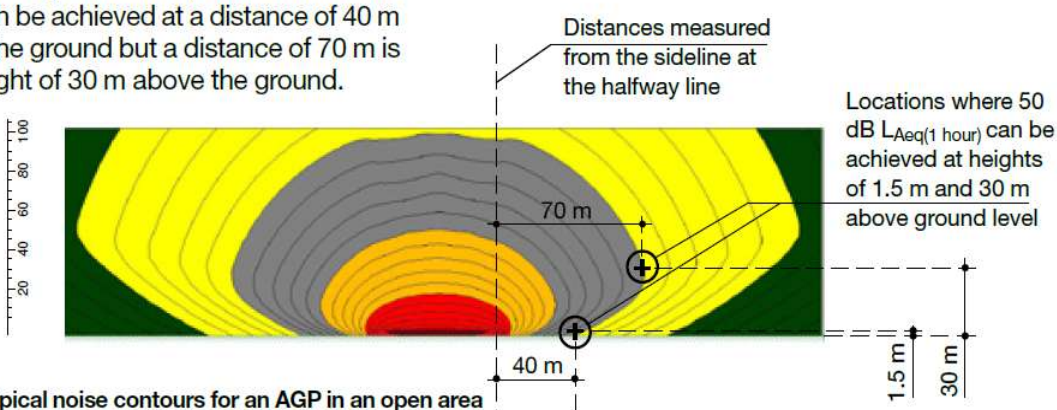
AGP noise emission

The noise map below is based on the measured noise emission level of 58 dB $L_{Aeq(1\ hour)}$ at a distance of 10 m from an AGP and shows the propagation of noise calculated at a height of 1.5 m in an open area - for example, on an existing playing field. The 50 dB $L_{Aeq(1\ hour)}$ noise contour is shown as the border between the grey and light yellow.

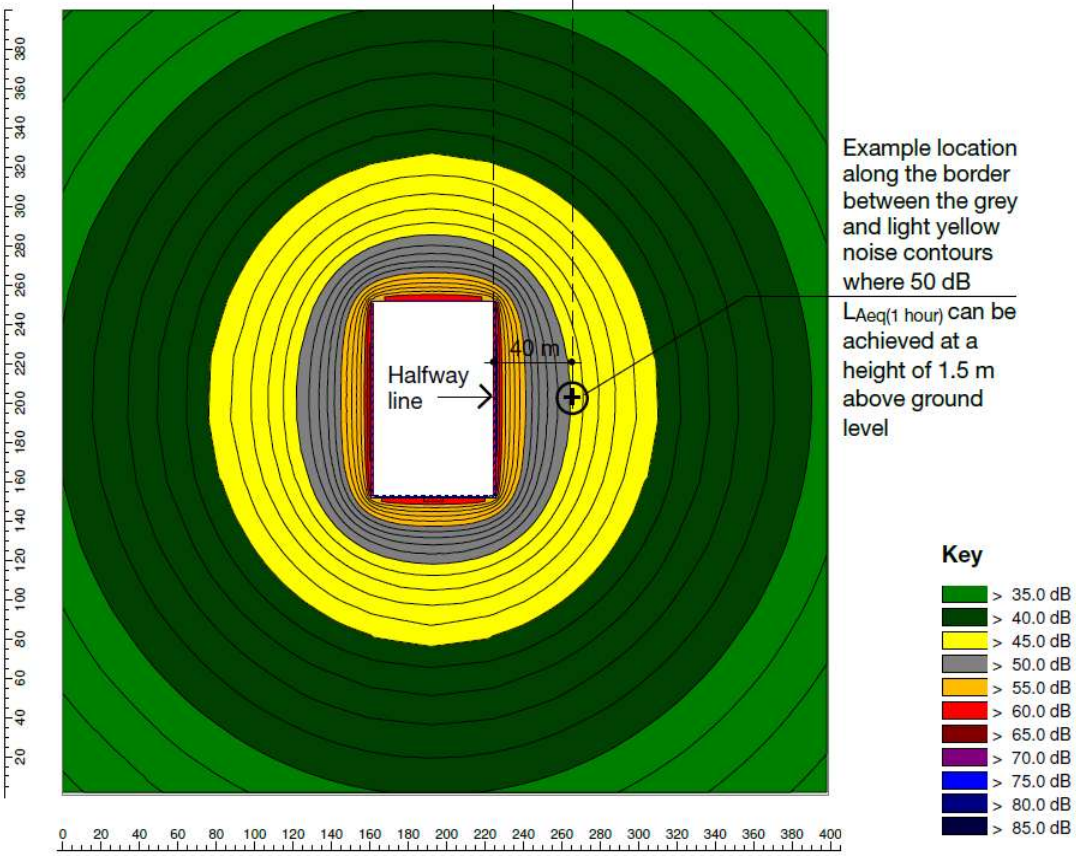
The cross section below shows that at greater heights, the noise level is higher. This would need to be considered where the site is surrounded by blocks of flats with dwellings at high level.

When a site is in an open location, noise levels of 50 dB $L_{Aeq(1\ hour)}$ can be achieved at a distance of 40 m at 1.5 m above the ground but a distance of 70 m is required at a height of 30 m above the ground.

Where a site for a proposed pitch is surrounded by dwellings at high level e.g. blocks of flats, the evidence that noise levels increase at greater heights should be carefully considered



Cross section of typical noise contours for an AGP in an open area



Plan of typical noise contours for an AGP in an open area measured at a height of 1.5 m above ground level

5.0 ASSESSMENT OF NOISE IMPACT

5.1 General noise measurements indicate that the noise levels around sports pitches are generally reasonably constant for a typical match; there is little difference between noise levels measured behind the goals and near the half-way line.

5.2 It is generally accepted that there is also only a very small difference in noise levels created by adult's and children's matches.

5.3 It is worth noting that the Sports England AGP Acoustics document provides a source noise level of 58 dB $L_{Aeq\,(1\text{-}Hour)}$ at 10m distance for typical AGP sports pitches. If we take into account the attenuation provided by the 3m high perimeter screening at the southern end of the pitch, then our measured football match level of 51 dB L_{Aeq} at the site boundary appears to confirm that our measured football pitch noise levels are robust and accurate.

5.4 We have assessed the noise impact at the residential site boundaries located directly to the south of the pitch, and the results are shown in Table 6 below:-

Table 6: Pitch Noise Levels v Ambient Noise Levels (without pitch in use)

Location	Pitch Noise Levels		Ambient Noise Levels		Noise Impact	
	L_{Aeq}	L_{Amax}	L_{Aeq}	L_{Amax}	L_{Aeq}	L_{Amax}
Dwellings South Of The Pitch	51	70	45	66	+ 6 dB	+ 4 dB

5.5 The results in Table 6 above indicate that the measured pitch noise level of 51 dB L_{Aeq} at the nearest affected residential boundaries dwellings is 6 dB(A) higher than the ambient noise climate with the pitch not in use.

5.6 In terms of maximum noise levels, the results indicate that the measured pitch noise level of 70 dB L_{Amax} at the residential boundary is 4 dB(A) higher than the average maximum noise level at these dwellings.

5.7 Therefore, based on the above noise impacts, it can be concluded that the proposed extended usage time of 9.30pm for the football pitch can be considered as being at the 'No Observed Adverse Effect' in accordance with The Noise Policy Statement for England (NPSE) 2010, i.e. the noise impact is 'Noticeable and not Intrusive' which equates to:-

'Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.'

5.8 Therefore, no specific scheme of noise mitigation measures is deemed to be required.

5.9 In terms of BS 8233 : 2014, the predicted noise impact of 51 dB L_{Aeq} at the residential boundary is 4 dB(A) below the upper limit of 55 dB L_{Aeq} for general outdoor daytime noise.

5.10 The actual facades of the nearest dwellings are at least another 30m distance from the site boundary and allowing for attenuation of sound over distance, a noise level of 51 dB(A) at 10m would equate to approximately 42 dB(A) at the residential facades.

5.11 The Sport England : Design Guidance Note – Artificial Grass Pitch (AGP) Acoustics – Planning Implications : 2015, states that the noise level outside a residential property during the daytime about 1m from facades of living spaces should not exceed 50 dB L_{Aeq}.

5.12 In addition, the Design Guidance Note refers to the WHO Guidance for outdoor living area and states that to avoid 'moderate annoyance' during the daytime and evening the noise level should not exceed 50 dB $L_{Aeq(T)}$.

5.13 Therefore, the both of the above criteria will be achieved at the residential facades and also within the rear gardens and outdoor living areas of the dwellings.

5.14 The resulting external noise level of 42 dB(A) outlined above would result in an internal noise level within habitable rooms with the windows open of approximately 27 dB(A), based on -15 dB(A) attenuation for an open window, and therefore the internal daytime noise limits of 35 – 40 dB(A) for habitable rooms outlined in BS 8233 : 2014 will be achieved.

5.15 As the sports pitch will cease being used at 9.30pm at the latest, the impact of night-time noise does not need to be assessed.

6.0 SUMMARY AND CONCLUSIONS

6.1 The impact of noise has been assessed for the proposed extended hours of the football pitch at the Sheppey United Football Club, Holm Place, Queenborough Road, Halfway, Sheerness, Kent, in relation to an application for extended use of the floodlights from 9pm until 9.30pm Monday to Friday.

6.2 The results of the noise level survey and assessment indicate that the extended operating hours up to 9.30pm would result in a marginal noise impact when assessed at the nearest affected residential properties based on a 'typical' scenario with the pitche in full use.

6.3 The noise impact has been determined to be of 'No Observed Adverse Effect Level' when assessed in accordance with The Noise Policy Statement for England (NPSE) 2010.

6.4 The noise impact results are within the noise criteria outlined in BS 8233 : 2014 and the WHO Guidance for both internal and external noise, even with the windows of the nearest affected dwellings open.

6.5 The criteria outlined in the Sport England : Design Guidance Note – Artificial Grass Pitch (AGP) Acoustics – Planning Implications : 2015 for external noise at residential facades and outdoor living areas will also be achieved.

6.6 In conclusion, it is considered that the proposed extended time period of 30-minutes up until 9.30pm during the weekdays for the pitch will not result in a significant noise impact at the nearest affected dwellings and will be within acceptable limits with no adverse effect on the existing residential amenity.

6.7 Therefore, in relation to any potential noise impact, the proposal for the extended operating hours up to 9.30pm in the weekday evenings should be permitted.


Area requires lighting levels to be lowered
Area requires lighting levels to be lowered
Bowling Green
Gas Gov
Holm Farm Lane
FIELDVIEW CLOSE
Sunnyfields Drive
Digpit Farm
scale(m) 1-1000 on A3 size print
Nick Smith Associates Limited
Drawing Number 2992-D-02
Rev B
Scale at A3 : 1-1000
Drawn NWS
Date 27.11.2023
A: scale bar added. GB/12/01/24
B: scale bar alt. GB/17/01/24
Existing Pitch Lighting
with Site perimeter
needing a review
Client Sheppey United Football Club Limited
Project Title Minster on Sea, Sheerness ME12 3DF
Plot Date : 27 November 2023 17:58:42
Project No : 2992
AutoCAD File Name : S:\Current\Projects\Sheppey Utd FC\drawings\2992-D.dwg

APPENDIX I – NOISE UNITS AND INDICES

a) Sound Pressure Level and the decibel (dB)

A sound wave is a small fluctuation of atmospheric pressure. The human ear responds to these variations in pressure, producing the sensation of hearing. The ear can detect a very wide range of pressure variations. In order to cope with this wide range of pressure variations, a logarithmic scale is used to convert the values into manageable numbers. Although it might seem unusual to use a logarithmic scale to measure a physical phenomenon, it has been found that human hearing also responds to sound in an approximately logarithmic fashion. The dB (decibel) is the logarithmic unit used to describe sound (or noise) levels. The usual range of sound pressure levels is from 0 dB (threshold of hearing) to 120 dB (threshold of pain).

Due to the logarithmic nature of decibels, when two noises of the same level are combined together, the total noise level is (under normal circumstances) 3 dB(A) higher than each of the individual noise levels e.g. 60 dB(A) plus 60 dB(A) = 63 dB(A). In terms of perceived 'loudness', a 3 dB(A) variation in noise level is a relatively small (but nevertheless just noticeable) change. An increase in noise level of 10 dB(A) generally corresponds to a doubling of perceived loudness. Likewise, a reduction in noise level of 10 dB(A) generally corresponds to a halving of perceived loudness.

b) Frequency and Hertz (Hz)

As well as the loudness of a sound, the frequency content of a sound is also very important. Frequency is a measure of the rate of fluctuation of a sound wave. The unit used is cycles per second, or hertz (Hz). Sometimes large frequency values are written as kilohertz (kHz), where 1 kHz = 1000 Hz.

Young people with normal hearing can hear frequencies in the range 20 Hz to 20,000 Hz. However, the upper frequency limit gradually reduces as a person gets older.

c) A-weighting

The ear is not equally sensitive to sound at all frequencies. It is less sensitive to sound at low and very high frequencies, compared with the frequencies in between. Therefore, when measuring a sound made up of different frequencies, it is often useful to 'weight' each frequency appropriately, so that the measurement correlates better with what a person would actually hear. This is usually achieved by using an electronic filter called the 'A' weighting, which is built into sound level meters and is denoted dB(A) or dBLA.

d) Glossary of Terms

When a noise level is constant and does not fluctuate over time, it can be described adequately by measuring the dB(A) level. However, when the noise level varies with time, the measured dB(A) level will vary as well. In this case it is therefore not possible to represent the noise climate with a simple dB(A) value. In order to describe noise where the level is continuously varying, a number of other indices, including statistical parameters, are used. The indices used in this report are described below:-

L_{Aeq} The A-weighted 'equivalent continuous noise level' which is an average of the total sound energy measured over a specified time period. L_{Aeq} is the level of a continuous noise which has the same total (A-weighted) energy as the real fluctuating noise, measured over the same time period.

L_{Amax} The maximum A-weighted noise level recorded during the monitoring period.

L_{A10} The A-weighted noise level exceeded for 10% of the specified time period. L_{A10} is most often used as a measure of traffic noise.

L_{A90} The A-weighted noise level exceeded for 90% of the specified time period. L_{A90} is used as a measure of 'background noise'.

SEL The 'sound exposure level' of a single event (such as a passing train) and is the L_{Aeq} value of the whole event normalised to a 1 second period level of a sound.

L_{PA} The A-weighted sound pressure level.

L_{WA} The A-weighted sound power level.

R_W The weighted laboratory measured sound reduction of an element describing the sound transmitted through that element.

NR A graphical method for rating a noise by comparing the noise spectrum with a family of noise rating curves.

RT Measured reverberation time in receiver room in seconds.

RT_0 Standard reverberation time of 0.5 seconds.

Bg The receiver room background noise level, L_{eq}

T_{mf} The reverberation time (RT60) is the time taken for the sound pressure level (SPL) to reduce by 60 dB when the sound source is instantaneously cut off. Rooms with many hard surfaces are very reverberant and have long reverberation times. Rooms with many acoustically absorbent finishes tend to have short reverberation times because the sound decays rapidly. T_{mf} is the RT60 within a space averaged across the 500 Hz, 1 kHz and 2 kHz octave bands. These are the frequencies used for speech and by controlling reverberation at these frequencies, speech intelligibility can be improved.

D Level difference, effectively D = source level - (receiver level corrected for background level).

D_{nT} Standardised level difference, standardised to a receiver room reverberation time of 0.5 seconds, $D_{nT} = D + 10 \log (RT/RT_0)$.

$D_{nT,w}$ Weighted standardised level difference, a single figure generated by comparing the D_{nT} with a reference curve. The reference curve is shifted in 1 dB steps until the sum of adverse deviation of the test curve, compared to the reference curve, is as large as possible, but no more than 32.0 dB. The value of the shifted reference curve at 500 Hz

is taken as the $D_{nT,w}$. N.B. As $D_{nT,\ w}$ for airborne transmission represents a level difference, an improvement generates a larger figure.

C_{tr} A 'spectrum adaptation term' used to correct the $D_{nT,w}$ in order to reflect low frequency performance of the wall or floor tested.

L Level, effectively L = receiver level corrected for background level.

L'_{nT} Standardised level, standardised to a receiver room reverberation time of 0.5 seconds, $L'_{nT} = L - 10 \log (RT/RT_0)$.

$L'_{nT,w}$ Weighted standardised level, a single figure generated by comparing the L'_{nT} with a reference curve. The reference curve is shifted in 1 dB steps until the sum of adverse deviation of the test curve, compared to the reference curve, is as large as possible, but no more than 32.0 dB. The value of the shifted reference curve at 500 Hz is taken as the $L'_{nT,w}$. N.B. As $L'_{nT,w}$ for impact transmission represents an absolute level, an improvement generates a smaller figure.

APPENDIX II – RESULTS OF NOISE LEVEL SURVEY

Date: Wednesday 14th May 2025

Equipment: Rion NA-28 'Class 1' sound level meter, Rion NC-74 acoustic calibrator, Rion WS-10 windshield, microphone, tripod

Weather: Generally warm and dry with a light breeze throughout

Results: Sub-Channel values in dB(A); Main-Channel values in dB(Z)

Table A1: Ambient Noise Level Survey Results - L_{Aeq}

Data No.	Start Time	LAeq	LZeq	Octave-Band Frequency Spectra, LZeq										
		Sub	Main	16 Hz	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	16 kHz
1	14/05/2025 19:30	49.3	68.3	60.4	60.9	59.6	54.6	46.8	45.6	44.7	40.6	38.0	31.9	22.1
2	14/05/2025 19:45	49.4	66.7	59.7	58.8	54.2	48.7	40.9	42.1	45.0	40.3	43.7	32.9	17.8
3	14/05/2025 20:00	52.0	65.0	57.6	58.1	52.1	49.3	39.9	46.3	48.6	42.5	44.7	35.0	19.4
4	14/05/2025 20:15	51.1	64.2	55.4	59.5	52.0	48.5	42.2	45.7	48.5	41.8	41.2	30.2	15.8
5	14/05/2025 20:30	50.8	69.6	60.5	67.3	53.5	50.6	40.8	46.2	48.3	41.6	38.9	29.4	14.1
6	14/05/2025 20:45	50.0	68.7	61.0	63.7	51.7	47.5	39.3	44.8	47.5	41.3	38.2	29.5	16.8
7	14/05/2025 21:00	46.4	63.9	57.1	58.6	53.0	42.8	38.4	39.0	42.7	35.6	40.5	30.8	17.1
8	14/05/2025 21:15	41.9	64.1	57.2	56.3	49.0	41.8	38.4	37.2	39.0	33.2	27.4	24.3	18.8

Table A2: Ambient Noise Level Survey Results - L_{Amax}

Data No.	Start Time	LAmax	LZmax	Octave-Band Frequency Spectra, LZmax										
		Sub	Main	16 Hz	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	16 kHz
1	14/05/2025 19:30	74.6	91.1	83.8	80.5	81.1	77.0	70.9	69.5	70.6	68.3	63.7	62.0	51.8
2	14/05/2025 19:45	65.2	88.8	83.8	83.2	80.1	69.9	62.2	62.6	63.6	57.5	58.4	57.2	48.6
3	14/05/2025 20:00	70.9	84.6	79.1	71.3	72.8	71.0	63.7	65.0	68.2	63.5	58.8	66.1	55.7
4	14/05/2025 20:15	68.6	81.9	76.1	70.7	72.0	69.4	62.7	61.7	67.2	64.0	62.8	55.0	44.4
5	14/05/2025 20:30	67.9	86.4	82.7	75.7	68.8	70.4	60.6	69.8	67.9	59.3	56.7	51.8	27.4
6	14/05/2025 20:45	70.8	91.9	85.7	80.9	73.5	70.4	58.3	64.8	68.5	65.5	58.6	50.8	40.7
7	14/05/2025 21:00	67.9	86.0	73.6	76.0	70.3	57.3	49.5	61.3	67.3	56.9	61.4	52.2	39.4
8	14/05/2025 21:15	63.1	86.5	80.2	77.5	62.2	60.4	62.3	63.2	55.6	56.6	52.8	48.4	43.8

Table A3: Ambient Noise Level Survey Results - L_{A10}

Data No.	Start Time	LA10	LZ10	Octave-Band Frequency Spectra, LZ10										
		Sub	Main	16 Hz	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	16 kHz
1	14/05/2025 19:30	50.4	70.9	61.6	62.9	59.3	53.6	45.9	46.2	46.0	41.3	39.3	29.5	17.4
2	14/05/2025 19:45	52.9	67.8	59.7	60.4	54.6	49.6	43.1	44.7	47.3	43.2	48.5	35.6	18.7
3	14/05/2025 20:00	55.6	67.1	58.9	60.8	54.6	51.3	42.0	49.3	51.2	45.0	50.0	37.0	17.6
4	14/05/2025 20:15	54.7	66.9	57.2	63.0	54.4	51.6	44.0	49.2	51.7	44.5	43.5	30.1	15.5
5	14/05/2025 20:30	54.2	72.5	62.6	71.1	56.3	53.3	43.5	49.6	51.6	44.9	42.7	31.8	16.3
6	14/05/2025 20:45	52.8	70.5	61.4	67.4	54.0	48.9	41.8	48.3	49.8	43.6	41.9	32.9	18.9
7	14/05/2025 21:00	46.9	66.2	59.1	61.1	56.4	45.7	40.8	40.3	42.6	37.4	40.0	31.4	18.2
8	14/05/2025 21:15	44.1	65.3	57.6	58.6	51.7	44.6	40.3	38.8	41.7	35.5	28.1	24.4	18.0

Table A4: Ambient Noise Level Survey Results - L_{A90}

Data No.	Start Time	LA90	LZ90	Octave-Band Frequency Spectra, LZ90										
		Sub	Main	16 Hz	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	16 kHz
1	14/05/2025 19:30	42.8	58.4	49.6	52.6	48.5	40.4	36.5	37.7	38.8	33.5	26.3	16.9	11.8
2	14/05/2025 19:45	43.0	58.1	49.4	52.7	47.2	39.4	34.8	36.4	38.2	34.1	28.4	19.3	12.2
3	14/05/2025 20:00	42.9	58.0	48.9	53.0	46.2	38.3	34.1	36.7	37.9	33.5	28.2	18.6	11.8
4	14/05/2025 20:15	41.4	58.7	49.1	53.8	47.0	39.1	34.2	36.3	37.0	31.7	23.5	14.6	11.6
5	14/05/2025 20:30	41.9	62.0	52.9	58.6	47.5	38.9	34.1	36.0	37.0	32.5	25.3	15.6	11.6
6	14/05/2025 20:45	41.0	58.7	50.5	54.7	45.7	38.1	34.6	35.3	36.9	32.0	25.7	17.4	11.8
7	14/05/2025 21:00	39.4	57.9	50.2	53.2	45.5	37.7	34.4	33.6	35.9	30.0	21.9	15.3	13.9
8	14/05/2025 21:15	37.6	55.9	48.7	51.1	43.9	36.5	33.7	32.2	34.7	28.0	19.0	14.9	14.0