

Acoustic South East



Desktop Noise Impact Assessment – 3 x Padel Courts

Report by: Scott Castle BSc (Hons) CEnvH, MCIEH MIOA

Date: 10/12/2025

Project: J4135

Issue 1

Site: **Bedford Park, Goddards Green, BN6 9LE**

Client: **Gatehouse Hub Limited**

Contents

1	Introduction and Executive Summary	- 3 -
2	Context, Noise Criteria & Noise Assessment Methodology	- 4 -
2.1	<i>Context/Proposal</i>	- 4 -
2.2	<i>Site Location</i>	- 4 -
2.3	<i>Proposed Court Layout(s)</i>	- 5 -
2.4	<i>Closest Residential Receptors</i>	- 6 -
2.5	<i>Historic Acoustic Report – 12010B.S.</i>	- 7 -
2.6	<i>Padel Noise</i>	- 8 -
2.7	<i>Relevant Planning Policies and Assessments</i>	- 8 -
3	Methodology	- 9 -
4	Noise Modelling Software	- 10 -
4.1	<i>Noise Model Inputs</i>	- 10 -
4.2	<i>Noise Model Outputs</i>	- 11 -
5	Discussion	- 14 -
5.1	<i>Consideration of $L_{Aeq,T}$ Against Measured Ambient Noise Levels</i>	- 14 -
5.2	<i>Consideration of $L_{Aeq,T}$ Against Measured Background Noise Levels</i>	- 14 -
5.3	<i>Consideration of L_{Amax} Events against Measured Phlorum Values</i>	- 14 -
5.4	<i>Consideration of Garden Assessment</i>	- 14 -
5.5	<i>Consideration of Internal Sound Pressure Levels (BS823:2014)</i>	- 15 -
5.6	<i>Sport England Noise Change Methodology</i>	- 15 -
6	Uncertainty	- 15 -
7	Conclusion	- 16 -

Figures

Figure 1.	Site Location	- 4 -
Figure 2.	Proposed Court Layout	- 5 -
Figure 3.	Elevational Drawing of Padel Courts 1 and 3	- 5 -
Figure 4.	Receptor Locations	- 6 -
Figure 5.	Summary of Phlorum Data from Their Reporting	- 7 -
Figure 6.	Phlorum Survey Position	- 8 -
Figure 7.	$L_{Aeq,T}$ Model	- 11 -
Figure 8.	L_{Amax} Model	- 12 -
Figure 9.	Noise Model Predictions – $L_{Aeq,T}$	- 13 -
Figure 10.	Noise Model Predictions – L_{Amax} Values	- 13 -
Figure 11.	Predicted Internal Sound Pressure Levels	- 15 -

This report has been prepared by Acoustic South East with all reasonable skill, care and diligence and presents information included within the scope agreed with the client. If any third party whatsoever comes into possession of this report, they rely on it at their own risk and Acoustic South East accepts no duty or responsibility (Including in negligence) to any such third party.

Report by: Scott Castle BSc (Hons) CEnvH, MCIEH MIOA

Checked by: Peter Attwood BSc(Hons) MSc MCIOB MIOA

Issue 1	10/12/2025	Original Issue
---------	------------	----------------

1 Introduction and Executive Summary

Acoustic South East have been appointed to undertake an acoustic assessment to support a planning application for three external padel courts. Specifically, it is understood that the planning department have requested an acoustic report for the padel courts which are proposed at the South of the site.

Standards and guidance referenced for this assessment include:

- Sport England, Design Guidance Note, Artificial Grass Pitch (AGP) – Acoustics, Planning Implications (2015)
- BS8233 2014(Sound insulation and noise reduction for buildings)

Computer noise modelling has been used to predict the impact of all three padel courts being used simultaneously and how this might impact the closest two residential receptors located to the North East and North West of the Estate.

The results of the desktop noise modelling have been compared against measured noise levels from a Phlorum assessment which was submitted as part of the planning application for the new commercial/industrial units (DM/23/1051).

The results of the assessment indicate that the padel noise predictions are comfortably below measured backgrounds, as well as measured ambient noise levels. Predictions were also made for garden/external amenity areas as well as internal ambient noise levels inside a residential property. Again, these are all comfortably achieved.

The Sport England 3dB change criterion was also assessed and has been demonstrated as not a problem for the site.

Planning consent for the three padel courts should not be withheld on noise grounds.

2 Context, Noise Criteria & Noise Assessment Methodology

2.1 Context/Proposal

This desktop assessment supports an application being made to Mid Sussex District Council for 3 outdoor padel courts. The Padel courts replace a consented servicing yard at the south of a recently approved planning application for a commercial/industrial estate at BN6 9LE, referred to hereafter as Bedford Park.

The assessment is a desktop assessment as it is widely understood that the proposed padel facility is relatively shielded from nearby residential receptors by multiple commercial units being constructed on the site.

The commercial/industrial yard where the courts are proposed are consented from 07:00 to 23:00 hours and it is proposed to match the Padel court timings.

2.2 Site Location

The application site is detailed in red in Figure 1.

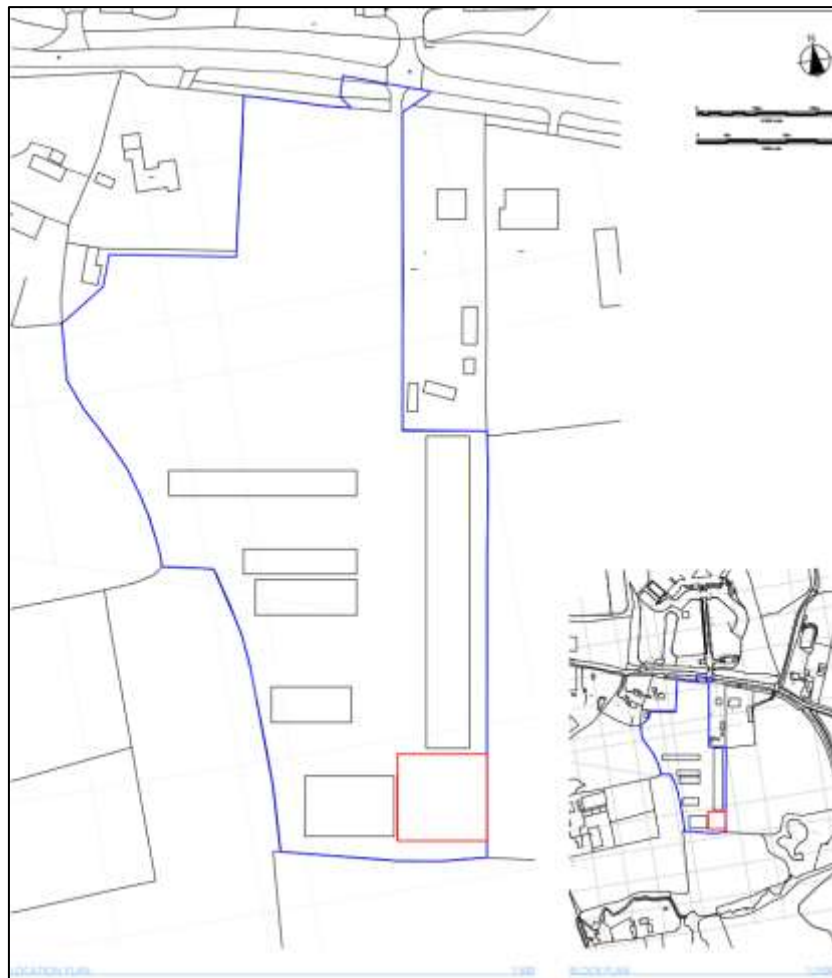


Figure 1. Site Location

2.3 Proposed Court Layout(s)

The proposed court layouts at the South of the client's estate can be seen in Figures 2 and 3 below. Two larger courts are orientated North to South and a smaller singles court is located East to West further South.



Figure 2. Proposed Court Layout

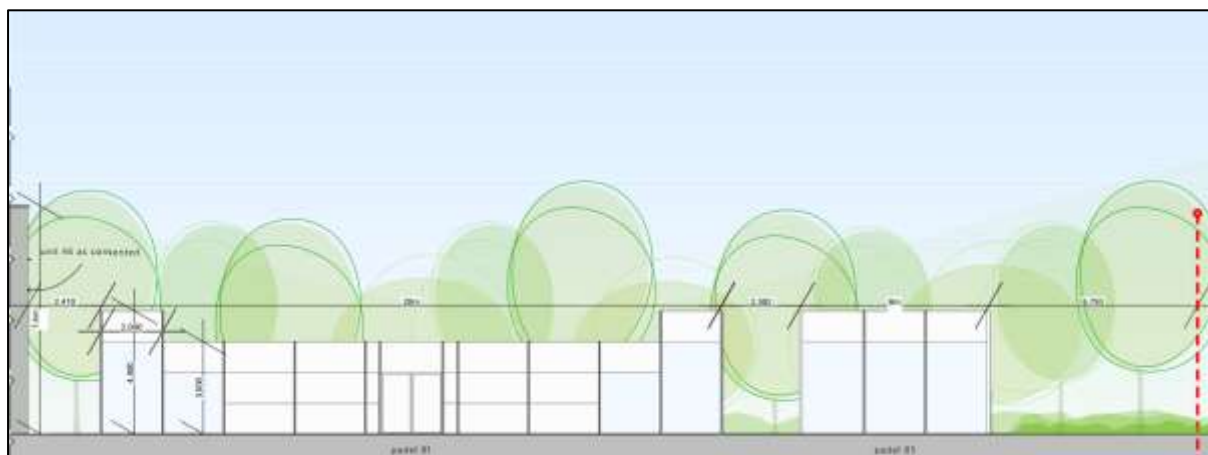


Figure 3. Elevational Drawing of Padel Courts 1 and 3

2.4 Closest Residential Receptors

Two residential receptors exist to the North East and the North West of the site.

These are:

- Gothards, located approximately 201m from the padel courts, North West
- Little Shepherds (s), located approximately 178m from the padel courts, North East
- Twin Oaks, located approximately 178m from the padel courts, North East
- Windmill Nursery, located approximately 238m from the padel courts, due West

These are highlighted in Figure 4 below.

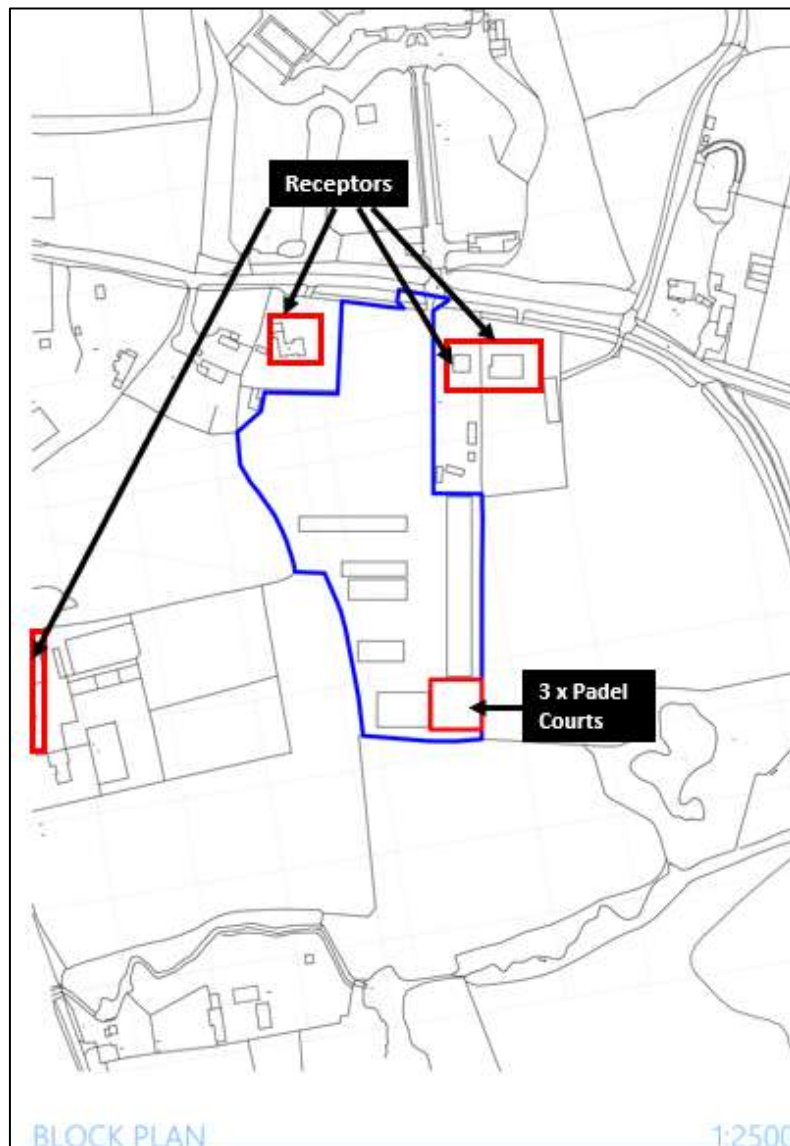


Figure 4. Receptor Locations

2.5 Historic Acoustic Report – 12010B.S

A Phlorum noise report was used as part of the early assessment for the commercial/industrial estate. This was dated 3rd April 2023 and contains some long-term survey data made at Little Shepherds.

It should be noted that the Phlorum assessment occurred before planning was approved by Mid Sussex District Council for a new commercial/industrial estate, so it is entirely possible that the soundscape may have increased further since the measurements were taken.

Noise Assessment

The Gatehouse, Goddards Green



Table 4.1 Summary of measured sound levels at Position 1, free-field dB

Date	Period Hours	L _{Aeq,T}	L _{AFmax,T}	L _{A10,T}	L _{A90,T}	Comment
Day						
24-Feb	1230-2300	52.2	64.4	49.6	41.0	-
25-Feb	0700-2300	55.8	67.7	51.0	41.4	-
26-Feb	0700-2300	64.5*	70.9	52.2	40.4	*2 unknown noise spikes at 1300 & 1715 hrs
27-Feb	0700-2300	56.6	68.7	51.8	41.6	-
28-Feb	0700-1115	57.5	75.0	58.1	47.1	-
Night						
24/25 Feb	2300-0700	40.9	50.4	41.2	37.1	-
25/26 Feb	2300-0700	46.6	50.6	40.6	36.6	-
26/27 Feb	2300-0700	41.5	50.6	39.9	35.9	-
27/28 Feb	2300-0700	43.4	52.1	40.5	36.4	-
Note: ⁽¹⁾ – The L _{A90,T} , L _{Amax} and L _{A10,T} and values are the arithmetic means of the L _{A90,T} , L _{Amax} and L _{A10,T} measurements for each period.						

Figure 5. Summary of Phlorum Data from Their Reporting

The Phlorum data was measured at Little Shepherds, the residential receptor location to the North East of the site (See Figure 6 below).



Figure 6. Phlorum Survey Position

2.6 Padel Noise

Padel Noise data was measured by Acoustic South East at Smash Padel in Cuckfield. The results were consistent with an Institute of Acoustics CPD presentation regarding Padel Noise and computer noise modelling.

2.7 Relevant Planning Policies and Assessments

2.7.1 National Planning Policy Framework (NPPF,2024)

The National Planning Policy Framework (Dec 2024) defines the Government's planning policies for England and how these are expected to be applied. It sets out the Government's requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so.

The following paragraphs are relevant within NPPF Section 15 (Conserving and enhancing the natural environment) states the following:

Paragraph 187 – 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, and

Paragraph 198 – 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 impact 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

Paragraph 200– Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.

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

The Sport England Guidance provides a comparison of the AGP noise against the existing noise climate and indicates a slight impact where there is an increase of less than 3dB.

“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”

2.7.3 BS8233:2014 – Guidance on sound Insulation and Noise reduction for Buildings

BS8233:2014 is primarily associated with steady state and continuous/anonymous sound. It is arguable that Padel Tennis might not necessarily be appropriate, albeit a reduced internal standard/worst case hour might be relevant for consideration.

3 Methodology

1. Obtain site plans from the client
2. Model the proposed 3 Padel Courts using attended measured data.
3. Compare against the measured survey data for background and ambient noise levels from the Phlorum reporting.
4. Discuss
5. Conclude

4 Noise Modelling Software

In order to see how noise varies at different positions around the proposed development it is possible to produce a noise contour map. A computer noise model has been completed using the computer package IMMI. Drawings of the area have been used to complete the noise models and the topography of the location recreated. IMMI faithfully implements the propagation method of ISO-9613:1996; Acoustics – Attenuation of sound during propagation outdoors.

The noise modelling software predicts freefield and A weighted dB values.

A noise model was run for both L_{Aeq} , and L_{Amax} propagation.

4.1 Noise Model Inputs

1. Attended Padel data was measured at Smash Padel in Cuckfield. The results of the data were consistent with the modelling recommendations made in an Institute of Acoustics (IoA) CPD presentation from Peninsular Acoustics.
2. Glass windows at 3m and 2m in height above ground level were placed to form the ends of each court. These were entered as solid barriers (as per Figure 3 above).
3. The middle of the courts, ie wire mesh was left as acoustically transparent, allowing the match play to propagate across the site.
4. Two models were run, one with L_{Aeq} parameters and one with L_{Amax} parameters
5. For the L_{Amax} model, a point source was placed at 2.5m above ground level at centre court to replicate a volley shot being played. This was true of each of the three courts being played on. The point source was entered as 103 dB L_{WA} . This equates to 75dB L_{Amax} at 5m from the centre line.
6. For the L_{Aeq} and L_{Amax} model, this assumed that all three courts were in simultaneous play/operation.
7. For calibration of the L_{Aeq} , model, this was measured at 5m from the centre line and the horizontal and vertical sound sources calibrated to 60dB ($L_{Aeq,T}$). For the rear screened areas, these were also calibrated at 5m in distance and calibrated to 57dB $L_{Aeq,T}$.
8. The heights of the commercial units were used from elevational drawings provided by the client's planning consultant. The smallest of the buildings was 6.3 meters above ground level and the tallest 9.8m above ground level.
9. The residential receptor buildings at Goddards and Little Shepherds were also added and included a garden assessment, a ground floor window (1.5m above ground level) and first floor window (4.5m above ground level).
10. Fencelines were not added to the noise model.
11. The model outcomes are with all three courts in operation at the same time.

4.2 Noise Model Outputs

4.2.1 $L_{Aeq,T}$ Model

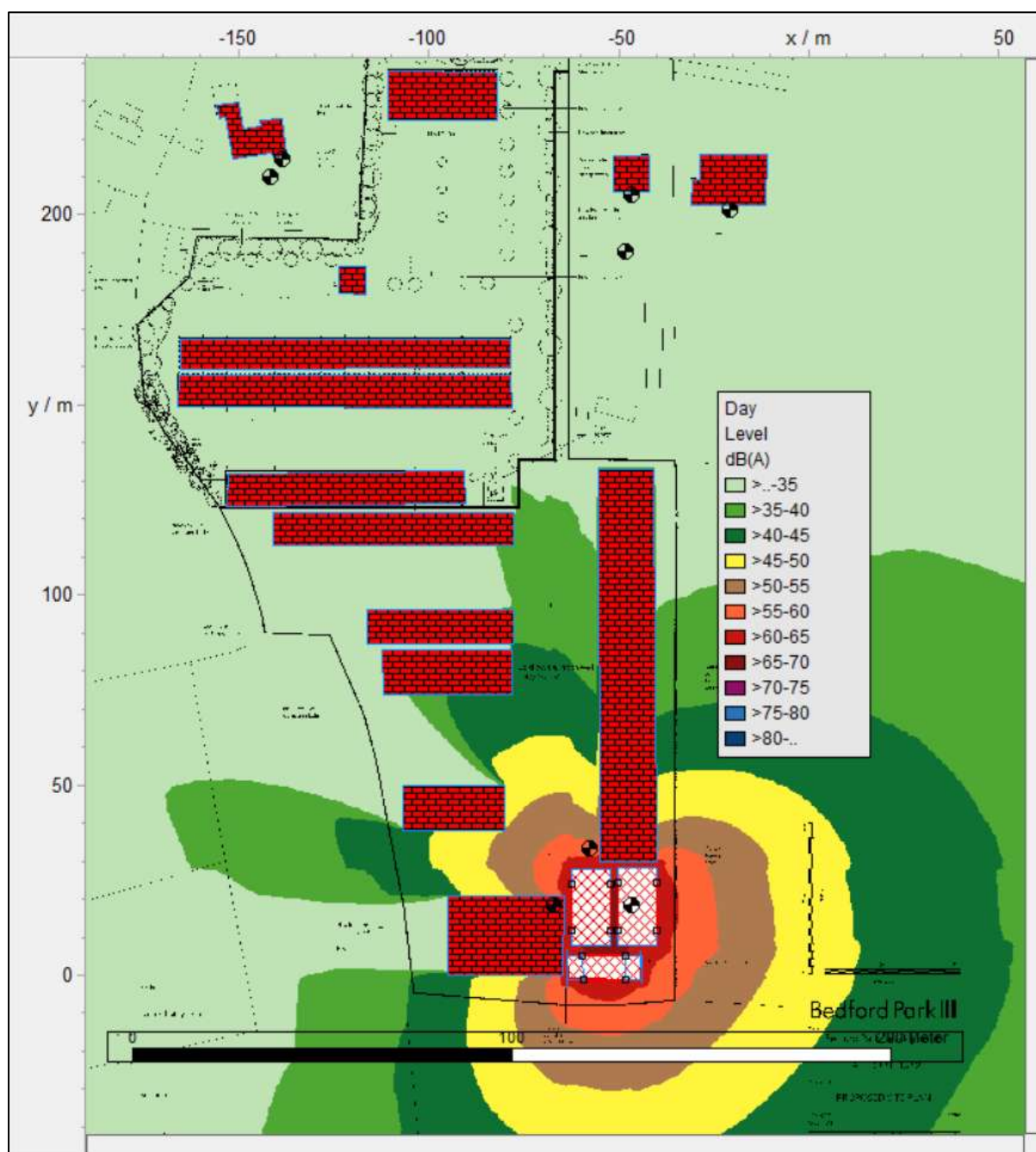


Figure 7. $L_{Aeq,T}$ Model

4.2.2 L_{Amax} Model

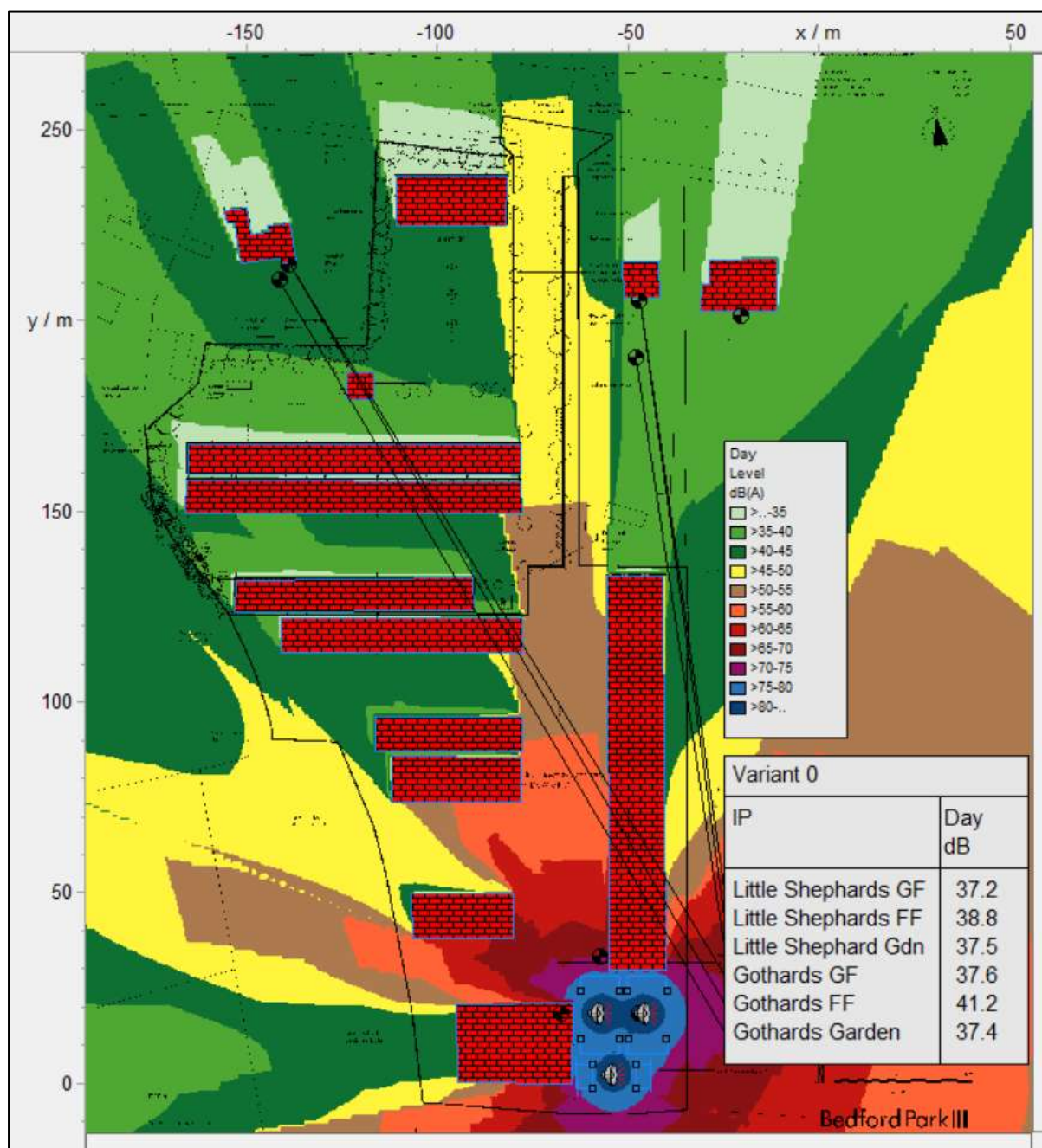


Figure 8. L_{Amax} Model

4.2.3 Tabulated Data – Court Noise Only ($L_{Aeq,T}$)

Residential Building	
Receptor Location	External, freefield Sound Pressure Level
Gothards GF	21
Gothards FF	23
Little Shephards GF	24
Little Shephards FF	25
Twin Oaks GF	27
Twin Oaks FF	27
External Amenity Areas	
Gothards Garden	21
Little Shephard Gdn	24
Windmill Nursery	25

Figure 9. Noise Model Predictions – $L_{Aeq,T}$

4.2.4 Tabulated Data – L_{Amax} Data

L_{Amax} Events	
Residential Building	
Receptor Location	External, freefield Sound Pressure Level
Gothards GF	38
Gothards FF	41
Little Shephards GF	37
Little Shephards FF	39
Twin Oaks GF	27
Twin Oaks FF	27
External Amenity Areas	
Gothards Garden	37
Little Shephard Gdn	37
Windmill Nursery	33

Figure 10. Noise Model Predictions – L_{Amax} Values

5 Discussion

The values discussed hereafter include all three padel courts being used simultaneously.

The worst-case prediction for $L_{Aeq,T}$ for the residential receptors to the North is 25dB freefield externally.

The worst-case prediction for L_{Amax} for the residential receptors to the North is 41dB freefield externally.

5.1 Consideration of $L_{Aeq,T}$ Against Measured Ambient Noise Levels

The average for the measured dataset for the daytime period is 59dB $L_{Aeq, 16 \text{ hour}}$.

With only 25dB predicted, this is comfortably below (by 34dB) the measured site soundscape for the daytime period. The calculation of the Phlorum daytime period, considered only the full daytime periods and not the 24th Feb or the 28th Feb.

5.2 Consideration of $L_{Aeq,T}$ Against Measured Background Noise Levels

The modal average for the measured dataset for the daytime period is 41dB $L_{A90,T}$.

With a specific sound pressure level of 25dB, $L_{Aeq,T}$, this is 16dB below the measured background sound pressure levels. At such predicted sound pressure levels, the padel noise would not likely be audible.

5.3 Consideration of L_{Amax} Events against Measured Phlorum Values

The average daytime L_{Amax} value from the Phlorum reporting was 69dB. This is the applicable L_{Amax} noise level which would have been derived from sources local to the housing and might include industrial/commercial sounds etc.

In contrast to this, the worst case predicted L_{Amax} value from the padel court noise is 41dB L_{Amax} . This is 28dB below the measured local L_{Amax} levels and no higher than the local energy average value of ambient noise. Again, it is questionable as to whether this would be audible.

5.4 Consideration of Garden Assessment

BS8233:2014 requires that external amenity areas should not be greater than 50-55dB $L_{Aeq,16 \text{ hours}}$.

The predicted external sound pressure level from the three courts operating simultaneously is 25dB below the external criteria.

5.5 Consideration of Internal Sound Pressure Levels (BS823:2014)

Given that the noise model predicts external sound pressure levels, it is possible to predict internal sound pressure levels using the industry standard of 13dB of attenuation through a partially open window (AVOG, Jan 2020).

Residential Building					
Receptor Location	External, freefield Sound Pressure Level- $L_{Aeq,T}$	Open Window Attenuation	Predicted Internal Sound Pressure Level	Internal Reduced Criterion	Level Difference
Gothards GF	21	13dB	8	30dB $L_{Aeq, 16 \text{ hour}}$	-22
Gothards FF	23	13dB	10	30dB $L_{Aeq, 16 \text{ hour}}$	-20
Little Shepherds GF	24	13dB	11	30dB $L_{Aeq, 16 \text{ hour}}$	-19
Little Shepherds FF	25	13dB	12	30dB $L_{Aeq, 16 \text{ hour}}$	-18

Figure 11. Predicted Internal Sound Pressure Levels

5.6 Sport England Noise Change Methodology

For a soundscape to change by 3dB it will be necessary to have the same level of sound occurring and effectively doubling the sound energy. For example, if the L_{Aeq} measured was 59dB for the daytime period (ie over 16 hours, 07:00-23:00 hours), it would take an additional 59dB at the survey position/receptor location to change the soundscape by 3dB (ie $10\log(10^{5.9}+10^{5.9})=62\text{dB}$).

However, with the received sound pressure levels significantly below (ie 34dB below) the measured ambient noise levels, this is not likely to occur. This is demonstrated as follows:

$10\log(10^{5.9}+10^{2.5})= 59\text{dB}$ and no change in the site soundscape.

6 Uncertainty

It remains valid to list how and where uncertainty has been minimised in the data collection, processing and assessment phases.

Whilst Acoustic South East do not have measured data for the site soundscape, this has been taken from the previously published Phlorum report which is in the public domain.

The data used within the noise modelling assessment was measured by Acoustic South East and was consistent with industry reporting.

7 Conclusion

Computer noise modelling has been used to predict the impact of all three padel courts being used simultaneously and how this might impact the closest two residential receptors located to the North East and North West of the Estate.

The results of the desktop noise modelling have been compared against measured noise levels from a Phlorum assessment which was submitted as part of the planning application for the new commercial/industrial units (DM/23/1051).

The results of the assessment indicate that the padel noise predictions are comfortably below measured backgrounds, as well as measured ambient noise levels. Predictions were also made for garden/external amenity areas as well as internal ambient noise levels inside a residential property. Again, these are all comfortably achieved.

The Sport England 3dB change criterion was also assessed and has been demonstrated as not a problem for the site.

Planning consent for the three padel courts should not be withheld on noise grounds.