

Burger King
Park Road South
Havant
PO9 1ER

Intercom Noise Assessment

On behalf of



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1.0 Introduction

- 1.1. Noise Solutions Ltd (NSL) has been commissioned to undertake a noise assessment relating to a proposed extension of operating hours for the existing Burger King Drive-Thru site in Havant.
- 1.2. This report presents the results of the Drive-Thru intercom survey, results of an environmental noise survey, the applicable policies and guidance, and a noise impact assessment to discharge the planning condition related to intercom noise.
- 1.3. Condition 4 of application reference "APP/25/00126" states the following;

Prior to the commencement of the extended opening hours a noise report shall be submitted to and approved in writing by the Local Planning Authority to demonstrate that noise relating to the intercom/Tannoy drive through operation is inaudible at nearby residential facades. The intercom/Tannoy shall thereafter be operated in accordance with the approved details and remain inaudible at nearby residential facades.

- 1.4. To assist with the understanding of this report a glossary of acoustic terms can be found in **Appendix A**. An in-depth glossary of acoustic terms can be viewed online at www.acoustic-glossary.co.uk.

2.0 Site layout

- 2.1. The existing Burger King site is located on the west side of Park Road South, just to the north of the junction with Solent Road.
- 2.2. Vehicles enter and depart the car park and drive-thru from an access road to the north of the Burger King building. The car park is located to the north and the restaurant plant area is located on the roof of the building.
- 2.3. The drive-thru intercom is located towards the east of the restaurant building, with the serving window along the west elevation. Vehicles circulate clockwise round the south end of the building.
- 2.4. **Appendix B** contains an aerial photograph showing the site and surrounding area.

3.0 Nearest noise sensitive receptors

- 3.1. The area surrounding the site is mixed residential and commercial in use. The most affected noise sensitive properties, identified as Receptor R1, are the flats in South Park Court, at the junction of Bulbeck Road and Park Road South.

- 3.2. A site plan showing the site and surrounding area and the nearest noise sensitive properties is presented in **Appendix B**.

4.0 Acoustic Standards and Planning Policies

BS 4142:2014 + A1:2019 Methods for Rating and Measuring Industrial and Commercial Sound

- 4.1. BS 4142:2014+A1:2019 describes a method for rating and assessing sound of an industrial or commercial nature, which includes:
- Sound from industrial and manufacturing processes;
 - Sound from fixed installations which comprise mechanical and electrical plant and equipment;
 - Sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and
 - Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site.
- 4.2. Therefore, for the first time in the UK, noise associated with store deliveries (i.e. sound from loading and unloading of goods) has a recognised and approved assessment methodology as this type of noise was not included in the scope of previous versions of BS 4142.
- 4.3. The industrial or commercial sound is assessed outside a dwelling or premises used for residential purposes, upon which sound is incident.
- 4.4. The procedure contained in BS 4142:2014 + A1:2019 is to quantify the “specific sound level”, which is the measured or predicted level of sound from the source in question over a one hour period for the daytime and a 15-minute period for the night-time. Daytime is defined in the standard as 07:00 to 23:00 hours, and night-time as 23:00 to 07:00 hours.
- 4.5. The specific sound level is converted to a rating level by adding penalties on a sliding scale to account for either potentially tonal or impulsive elements. The standard sets out objective methods for determining the presence of tones or impulsive elements, but notes that it is acceptable to subjectively determine these effects.
- 4.6. The penalty for tonal elements is between 0dB and 6dB, and the standard notes: “Subjectively, this can be converted to a penalty of 2 dB for a tone which is just perceptible at the noise receptor, 4 dB where it is clearly perceptible, and 6 dB where it is highly perceptible.”

- 4.7. The penalty for impulsive elements is between 0dB and 9dB, and the standard notes: "Subjectively, this can be converted to a penalty of 3 dB for impulsivity which is just perceptible at the noise receptor, 6 dB where it is clearly perceptible, and 9 dB where it is highly perceptible."
- 4.8. The background sound level should be established in terms of the L_{A90} noise index. The standard states that the background sound level should be measured over a period of sufficient length to obtain a representative value. This should not normally be less than 15-minute intervals. The standard states that: "A representative level ought to account for the range of background sound levels and ought not automatically to be assumed to be either the minimum or modal value."
- 4.9. The assessment outcome results from a comparison of the rating level with the background sound level. The standard states:

a) Typically, the greater this difference, the greater the magnitude of the impact.

b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.

c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.

d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact."

The standard goes on to note that: "Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night."

- 4.10. In addition to the margin by which the Rating Level of the specific sound source exceeds the Background Sound Level, the 2014 edition places emphasis upon an appreciation of the context, as follows:

"An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context."

- 4.11. BS 4142:2014 + A1:2019 requires uncertainties in the assessment to be considered, and where the uncertainty is likely to affect the outcome of the assessment, steps should be taken to reduce the uncertainty.

Noise Policy Statement for England

- 4.12. The Noise Policy Statement for England (NPSE¹), published in March 2010, sets out the long-term vision of Government noise policy. The Noise Policy aims, as presented in this document, are: *"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:*
- *avoid significant adverse effects on health and quality of life;*
 - *mitigate and minimise adverse effects on health and quality of life; and*
 - *where possible, contribute to the improvement of health and quality of life."*
- 4.13. The NPSE makes reference to the concepts of NOEL (No Observed Effect Level) and LOAEL (Lowest Observed Adverse Effect Level) as used in toxicology but applied to noise impacts. It also introduces the concept of SOAEL (Significant Observed Adverse Effect Level) which is described as the level above which significant adverse effects on health and quality of life occur.
- 4.14. The first aim of the NPSE is to avoid significant adverse effects, taking into account the guiding principles of sustainable development (as referenced in Section 1.8 of the NPSE). The second aim seeks to provide guidance on the situation that exists when the potential noise impact falls between the LOAEL and the SOAEL, in which case: *"...all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development."*
- 4.15. Importantly, the NPSE goes on to state that: "This does not mean that such adverse effects cannot occur."
- 4.16. The NPSE does not provide a noise-based measure to define SOAEL, acknowledging that the SOAEL is likely to vary depending on the noise source, the receptor and the time in question. NPSE advises that: *"Not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available."*
- 4.17. It is therefore likely that other guidance will need to be referenced when applying objective standards for the assessment of noise, particularly in reference to the SOAEL, whilst also taking into account the specific circumstances of a proposed development.

¹ Noise Policy Statement for England, Defra, March 2010

National Planning Policy Framework

- 4.18. A new edition of the NPPF was published in December 2024 and came into effect immediately, with corrections issued in February 2025. The original National Planning Policy Framework (NPPF²) was published in March 2012, with subsequent revisions made periodically - this document replaced the existing Planning Policy Guidance Note 24 (PPG 24) "Planning and Noise." The December 2024 revised edition contains no new directions or guidance with respect to noise. The paragraph references quoted below relate to the December 2024/February 2025 edition.
- 4.19. Paragraph 187 of the NPPF states that the planning system should contribute to and enhance the natural and local environment by, (amongst others) *"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."*
- 4.20. The NPPF goes on to state in Paragraph 198:
- "planning policies and decisions 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 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 ...*
- 4.21. The NPPF document does not refer to any other documents or British Standards regarding noise other than the Noise Policy Statement for England (NPSE³).
- 4.22. Paragraph 2 of the NPPF states that *"planning law requires that applications for planning permission be determined in accordance with the development plan unless material considerations indicate otherwise."*
- 4.23. Paragraph 12 of the NPPF states that *"The presumption in favour of sustainable development does not change the statutory status of the development plan as the starting point for decision making. Where a planning application conflicts with an up-to-date development plan (including any neighbourhood plans that form part of the development plan), permission should not usually be granted. Local planning authorities may take decisions that depart from an up-to-date development plan, but only if material considerations in a particular case indicate that the plan should not be followed"*.

² National Planning Policy Framework, DCLG, March 2012

³ Noise Policy Statement for England, DEFRA, March 2010

4.24. Paragraph 87 of the NPF states:

“Planning policies and decisions should recognise and address the specific locational requirements of different sectors. This includes making provision for:

- a) clusters or networks of knowledge and data-driven, creative or high technology industries; and for new, expanded or upgraded facilities and infrastructure that are needed to support the growth of these industries (including data centres and grid connections);*
- b) storage and distribution operations at a variety of scales and in suitably accessible locations that allow for the efficient and reliable handling of goods, especially where this is needed to support the supply chain, transport innovation and decarbonisation; and*
- c) the expansion or modernisation of other industries of local, regional or national importance to support economic growth and resilience”.*

4.25. Paragraph 124 states that *“Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously-developed or ‘brownfield’ land”.*

Planning Practice Guidance – Noise

4.26. An updated Planning Practice Guidance (PPG⁴) for noise was published on 22 July 2019 and provides additional guidance and elaboration on the NPPF. It advises that when plan-making and decision-taking, the Local Planning Authority should consider the acoustic environment in relation to:

- Whether or not a significant adverse effect is occurring or likely to occur;
- Whether or not an adverse effect is occurring or likely to occur; and
- Whether or not a good standard of amenity can be achieved.

⁴ Planning Practice Guidance – Noise, <https://www.gov.uk/guidance/noise--2>, 22 July 2019

- 4.27. This guidance introduced the concepts of NOAEL (No Observed Adverse Effect Level), and UAEL (Unacceptable Adverse Effect Level). NOAEL differs from NOEL in that it represents a situation where the acoustic character of an area can be slightly affected (but not such that there is a perceived change in the quality of life). UAEL represents a situation where noise is 'very disruptive' and should be 'prevented' (as opposed to SOAEL, which represents a situation where noise is 'disruptive', and should be 'avoided').
- 4.28. As exposure increases above the LOAEL, the noise begins to have an adverse effect and consideration needs to be given to mitigating and minimising those effects, taking account of the economic and social benefits being derived from the activity causing the noise. As the noise exposure increases, it will then at some point cross the SOAEL boundary.
- 4.29. The LOAEL is described in PPG⁵ as the level above which *"noise starts to cause small changes in behaviour and attitude, for example, having to turn up the volume on the television or needing to speak more loudly to be heard"*.
- 4.30. PPG identifies the SOAEL as the level above which *"noise causes a material change in behaviour such as keeping windows closed for most of the time or avoiding certain activities during periods when the noise is present."*
- 4.31. In line with the Explanatory Note of the NPSE, the PPG goes on to reference the LOAEL and SOAEL in relation to noise impact. It also provides examples of outcomes that could be expected for a given perception level of noise, plus actions that may be required to bring about a desired outcome. However, in line with the NPSE, no objective noise levels are provided for LOAEL or SOAEL although the PPG⁶ acknowledges that *"...the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation."*
- 4.32. The relevant guidance in the PPG in relation to the adverse effect levels is summarized below:

Table 1 PPG Noise effects table

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not Present	No Effect	No Observed Effect	No specific measures required

⁵ Paragraph: 005 Reference ID: 30-005-20190722

⁶ Paragraph: 006 Reference ID: 30-006-20190722

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Adverse Effect Level			
Present and not Intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. 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
Lowest Observed Adverse Effect Level			
Present and Intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, 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 small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and Disruptive	The noise causes a material change in behaviour, attitude or other physiological response, 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 Adverse Effect	Avoid
Present and very Disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

4.33. The Planning Practice Guidance⁷ states the following in relation to mitigation measures:

"For noise sensitive developments, mitigation measures can include avoiding noisy locations in the first place; designing the development to reduce the impact of noise from adjoining activities or the local environment; incorporating noise barriers; and optimising the sound insulation provided by the building envelope."

4.34. In addition, the Guide notes that it may also be relevant to consider⁸:

"... whether any adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time (and the effect this may have on living conditions). In both cases a suitable alternative means of ventilation is likely to be necessary. Further information on ventilation can be found in the Building Regulations".

Local Policy

4.35. The NPPF is very clear in that local authorities must update their local plans (one year from publication of the NPPF) and that if the local plan contains policies which do not closely align with the aims of the NPPF, then a decision must be made based on an assessment which shows compliance with the NPPF. Therefore, it is of paramount importance that local authorities have updated local plans which closely align with the aims in the NPPF.

5.0 Existing noise-climate

- 5.1. An environmental noise survey was undertaken between 21.00 hours on the 26th and 09.00 hours on the 27th of March 2026 to establish the typical environmental sound levels at the nearest noise sensitive receptors during the most sensitive hours of the proposed extension.
- 5.2. The results of the environmental noise survey are summarised in Table 2 below. The full set of measurement results and details of the survey methodology are presented in [Appendix D](#).

⁷ Paragraph: 010 Reference ID: 30-010-20190722

⁸ Paragraph: 006 Reference ID: 30-006-20190722

Table 2 Summary of survey results

Measurement period	Range of recorded sound pressure levels (dB)			
	L _{Aeq} (15mins)	L _{Amax} (15mins)	L _{A10} (15mins)	L _{A90} (15mins)
Daytime* (07.00 – 23.00 hours)	65-74	81-94	68-78	51-64
Night-time (23.00 – 07.00 hours)	56-73	75-95	55-77	40-62

**It should be noted that only a small portion of the daytime period was measured - this assessment is only focused on the sound pressure levels during the night-time period.*

Background sound levels

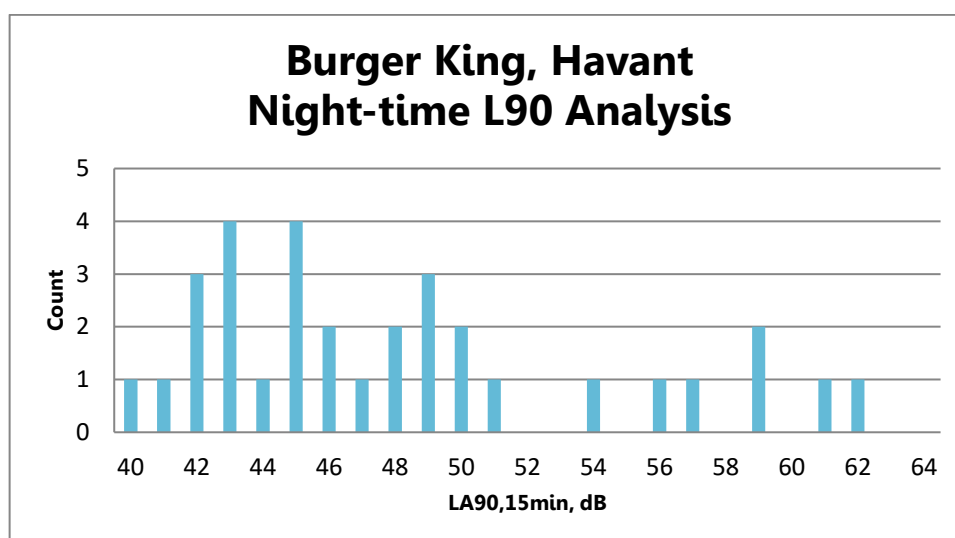


Figure 1 Histogram of night-time L_{A90} background sound pressure levels

- 5.3. Additional statistical analysis has been undertaken. As shown in Table 3 below, the mean, median and modal values have been calculated.

Table 3 Statistical analysis of L_{A90,15min} levels during the night-time period

dB, L _{A90} daytime period	
Mean	48
Mode	43
Median	47

- 5.4. From reviewing the above histogram, 43dB has been selected to be robustly representative of the night-time background sound level at the nearest noise sensitive receptor.

6.0 Planning condition

Planning condition for intercom noise

- 6.1. Condition 4 of application reference "APP/25/00126" states the following;

"Prior to the commencement of the extended opening hours a noise report shall be submitted to and approved in writing by the Local Planning Authority to demonstrate that noise relating to the intercom/Tannoy drive through operation is inaudible at nearby residential facades. The intercom/Tannoy shall thereafter be operated in accordance with the approved details and remain inaudible at nearby residential facades.

Reason: *To ensure that the operation of the intercom/Tannoy does not negatively impact residential amenities and having due regard to policies CS16 and DM10 of Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework."*

- 6.2. NSL has interpreted this condition to be the average noise level $L_{Aeq,T}$ of intercom usage being at least 10dBA below the representative background sound pressure level during the most sensitive hours of proposed operation. As such Table 4 below outlines the assessment criteria for intercom noise.

Table 4 Proposed night-time criterion for intercom noise

Period	Proposed sound pressure level limit of intercom (dB)
Night-time (23.00 – 07.00 hours)	33

- 6.3. This would constitute NOEL (No Observed Effect Level) as noise from the intercom would be inaudible at the assessment location.

7.0 Site visit 26th March 2026

- 7.1. NSL attended the restaurant between 20.45 and 23.45 hours on the evening of 26th March 2026 to take measurements of the intercom.
- 7.2. Restaurant staff spoke through the intercom as if they were taking an order from a drive-thru customer to best mimic the speech levels and intermittency present during regular operation of the system.
- 7.3. The intercom was operated on 'night-time mode' for the duration of the survey.

Table 5 Measured noise levels within bedroom of residence

Testing Distance	Description of noise level	L _{Aeq} , dB(A)	Comments
1 metres from Intercom	Staff speaking over intercom	56	Clearly audible, similar in noise level to cars driving past.
	Residual	51	
	Specific	54	
5 metres from Intercom	Staff speaking over intercom	51	Just audible, barely audible when cars drive past. Specific level equal to, or more than 10dB below ambient level.
	Residual	51	
	Specific	<= 41dB	
Façade of R1	Staff speaking over intercom	50	Completely inaudible over prevailing environmental noise, impossible to predict specific based upon these measurements.
	Residual	51	

- 7.4. It can be seen there was no measurable difference in noise levels when at a distance of 5 metres or further. The drive-thru intercom was completely inaudible at R1 during the survey.
- 7.5. Levels at 1m have been corrected to the façade of R1 to assess the impact of noise from the intercom, the results of this are shown in Table 6 Prediction of intercom noise at R1 below.

Table 6 Prediction of intercom noise at R1

Specific level at 1m, dB	Predicted level at R1, dB	Proposed Criterion, dB	Excess, dB
54	20	33	-12

- 7.6. Results from the above table indicate that noise from the Drive-Thru intercom are comfortably below the level of inaudibility at R1, and as such meet the criteria to discharge Condition 4.

8.0 Discussion of results

- 8.1. From the results of the survey, it can be surmised that the intercom is inaudible at the façade of the nearest noise sensitive receptor R1. Subjectively noise from the intercom was completely inaudible at the façade, this is further supported by there being no measurable difference in levels whether it was operated or not.

- 8.2. Predicted levels indicate that noise from the intercom is approximately 22dB below the representative night-time background sound pressure level at the nearest noise sensitive façade, and as such inaudible over environmental noise, adhering to planning condition 4.
- 8.3. Specific $L_{A_{fmax}}$ dB from the operation of the intercom was measured at 67dB at 1m. When corrected back to the façade of R1, the resultant level is 33dB and as such inaudible. $L_{A_{fmax}}$ is the loudest 1/8th of a second of a measurement period, and this level was influenced by road traffic, and as such it is likely that the actual $L_{A_{fmax}}$ of intercom operation is quieter than this.

9.0 Conclusions

- 9.1. Noise Solutions Ltd (NSL) has been commissioned to undertake a noise assessment relating to a proposed extension of operating hours for the existing Burger King Drive-Thru site in Havant.
- 9.2. Condition 4 of application reference "APP/25/00126" states the following;

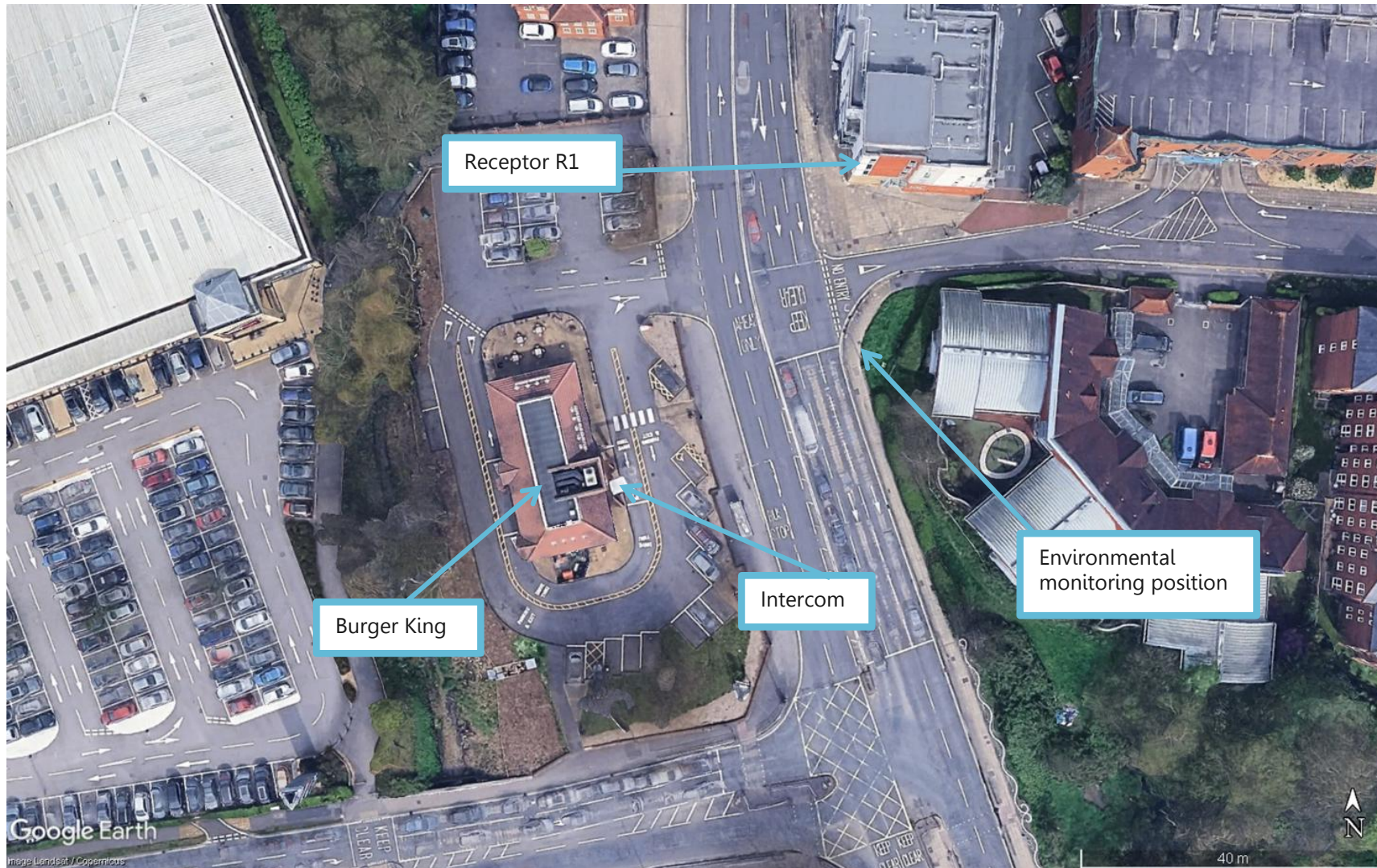
Prior to the commencement of the extended opening hours a noise report shall be submitted to and approved in writing by the Local Planning Authority to demonstrate that noise relating to the intercom/Tannoy drive through operation is inaudible at nearby residential facades. The intercom/Tannoy shall thereafter be operated in accordance with the approved details and remain inaudible at nearby residential facades.

- 9.3. On/ off measurements of the restaurants Drive-Thru intercom were undertaken. Results of the survey, and subjective impressions at the site, indicate that noise from the intercom were completely inaudible at the façade of the nearest noise sensitive receptor (R1). As such, it is recommended to discharge Condition 4.

Appendix A Acoustic terminology

Parameter	Description
Ambient Noise Level	The totally encompassing sound in a given situation at a given time, usually composed of a sound from many sources both distant and near ($L_{Aeq,T}$).
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s_1 and s_2 is given by $20 \log_{10} (s_1/s_2)$. The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is $20\mu\text{Pa}$. The threshold of normal hearing is in the region of 0 dB and 140 dB is the threshold of pain. A change of 1 dB is only perceptible under controlled conditions.
dB(A), L_{Ax}	Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound. The background noise in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A).
Fast Time Weighting	Setting on sound level meter, denoted by a subscript F, that determines the speed at which the instrument responds to changes in the amplitude of any measured signal. The fast time weighting can lead to higher values than the slow time weighting when rapidly changing signals are measured. The average time constant for the fast response setting is 0.125 (1/8) seconds.
Free-field	Sound pressure level measured outside, far away from reflecting surfaces (except the ground), usually taken to mean at least 3.5 metres
Façade	Sound pressure level measured at a distance of 1 metre in front of a large sound reflecting object such as a building façade.
$L_{Aeq,T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level recorded during a noise event with a period T. L_{max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
$L_{10,T}$	A noise level index. The noise level exceeded for 10% of the time over the period T. L_{10} can be considered to be the "average maximum" noise level. Generally used to describe road traffic noise. $L_{A10,18h}$ is the A-weighted arithmetic average of the 18 hourly $L_{A10,1h}$ values from 06:00-24:00.
$L_{90,T}$	A noise level index. The noise level that is exceeded for 90% of the measurement time interval, T. It gives an indication of the lower levels of fluctuating noise. It is often used to describe the background noise level and can be considered to be the "average minimum" noise level and is a term used to describe the level to which non-specific noise falls during quiet spells, when there is lull in passing traffic for example.

Appendix B Aerial photograph site showing areas of interest



Appendix C Noise survey details

Details of investigative survey

- C.1 Measurements of the intercom system were undertaken from 21.00 hours to 23.45 hours on Thursday 26th March 2026.
- C.2 Both broadband and octave band frequency data was measured. Noise measurements were taken over short durations (30 seconds) in order to minimise the influence of extraneous noise on the measurement results.

Equipment

- C.3 Details of the equipment used during the survey are provided in the table below. The sound level meter was calibrated before and after the survey; no significant change (+/-0.2 dB) in the calibration level was noted.

Description	Model / serial no.	Calibration date	Calibration certificate no.
Class 1 Sound level meter	Svantek 977D / 99071	20/02/2026	1512255-1
Condenser microphone	Microtech MK255 / 25430		
Preamplifier	Svantek SV12L / 129686		
Calibrator	Svantek SV 33B / 83850	06/11/2025	1515201-2

Appendix D Environmental sound survey

Details of environmental sound survey

- D.1 Measurements of the existing environmental sound levels were undertaken between 21.00 hours on Thursday 26th March and 09.00 hours on Friday 27th March 2026.
- D.2 The sound level meter was programmed to record the A-weighted L_{eq} , L_{90} , L_{10} and L_{max} noise indices for consecutive fifteen-minute sample periods for the duration of the survey.

Measurement position

- D.3 The representative measurement position was located on a lamp post on Park Road South (location indicated on the site plan in Appendix B). This location is approximately representative of the levels of road traffic noise at the closest elevation of the nearest houses to the site. The microphone was positioned approximately 3m above ground level and removed from any reflecting surfaces.
- D.4 In accordance with BS 7445-2:21991 '*Description and measurement of environmental noise – Part 2: Guide to the acquisition of data pertinent to land use*', the measurements were undertaken under free-field conditions.

Equipment

- D.5 Details of the equipment used during the survey are provided in the table below. The sound level meter was calibrated before and after the survey; no significant change in the calibration level was noted.

Description	Model / serial no.	Calibration date	Calibration certificate no.
Class 1 Sound level meter	Svantek 977 / 36190	24/09/2024	1509891-1
Condenser microphone	GRAS 40E / 86699		
Preamplifier	Svantek SV12L / 86561		
Calibrator	Svantek SV33B / 73430	25/09/2025	1513494-1

- D.6 Weather conditions were determined both at the start and on completion of the survey. It is considered that the meteorological conditions were appropriate for environmental noise measurements. The table below presents the weather conditions recorded on site at the installation and removal of the meter.

Weather Conditions				
Measurement Location	Time/Date	Description	Beginning of Survey	End of Survey
As indicated on Appendix B	21.00 26/3/26 - 09.00 27/3/26	Temperature (°C)	5	9
Cloud Cover Symbol Scale in oktas (eighths)  0 Sky completely clear  1  2  3  4 Sky half cloudy  5  6  7  8 Sky completely cloudy  (9) Sky obstructed from view		Precipitation:	No	No
		Cloud cover (oktas – see guide)	5	8
		Presence of fog/snow/ice	No	No
		Presence of damp roads/wet ground	No	No
		Wind Speed (m/s)	4	4
		Wind Direction	SE	SE
		Conditions that may cause temperature inversion (i.e. calm nights with no cloud)	No	No

Results

- D.7 The results of the survey are considered to be representative of the environmental sound levels in the area. During installation and removal of the meter, the noise climate at the survey location was affected by local road traffic. The results of the survey are presented in a time history graph overleaf.

