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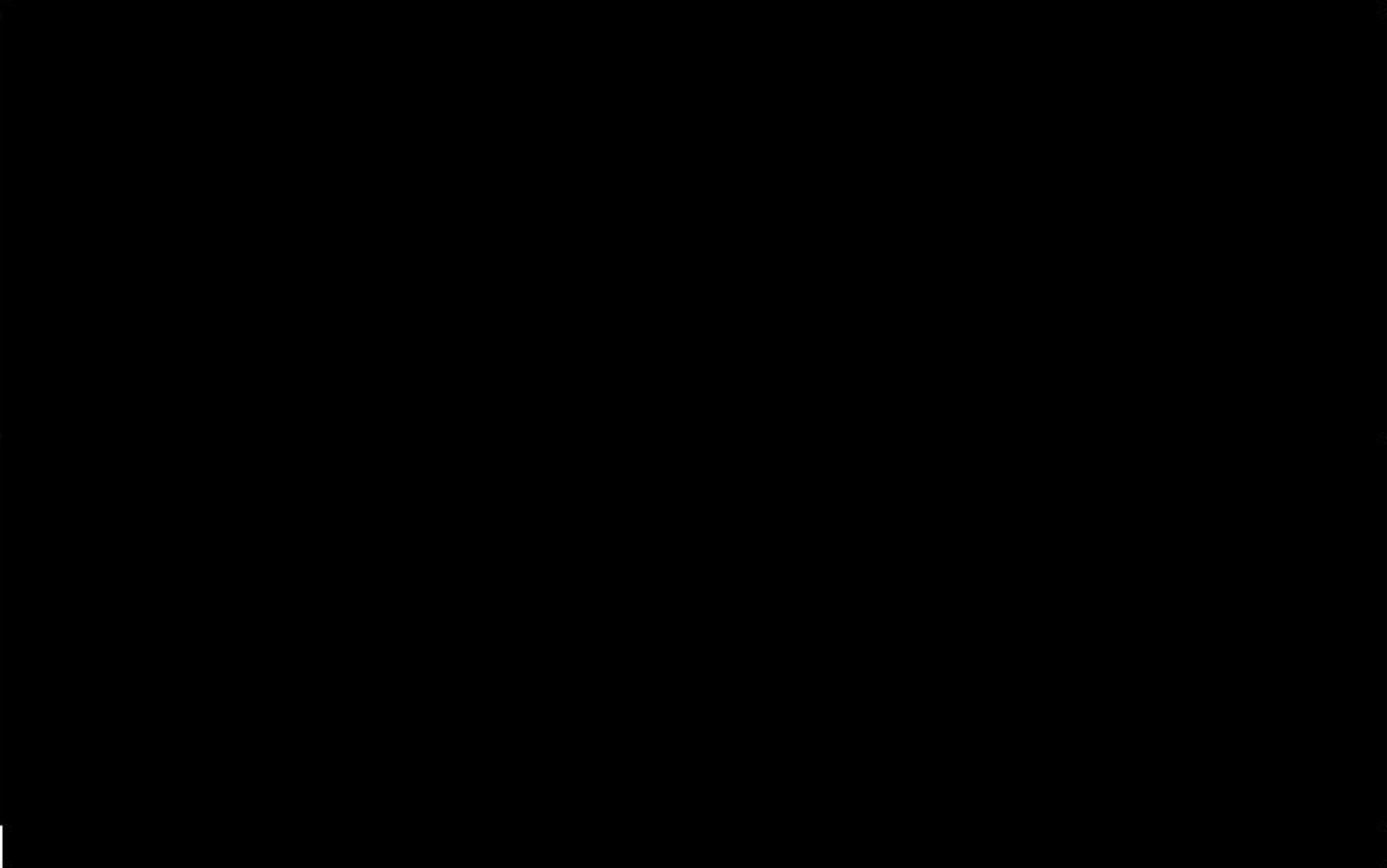
Environmental Noise Survey

Prepared: 11th April 2025

Report No	22940A-1
Client	Places For People Developments Ltd
Site	Fairbridge Way Burgess Hill RH15 8RY

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1. Quality Management

Report Number	22940A - 1	
Issue	Issue 1	
Prepared	11 th April 2025	
Prepared By		
Authorised By		

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3. Executive Summary

- 3.1.1. An environmental noise assessment has been carried out for a proposed residential development at Fairbridge Way, Burgess Hill, RH15 8RY (“Proposed Development”).
- 3.1.2. A previous attended survey and noise impact assessments was undertaken by Sharps Redmore^{1,2}. To supplement this earlier work, an additional unattended survey has been conducted to capture both daytime and night-time noise levels over a 24-hour period.
- 3.1.3. The report uses a combination of both survey data and data taken by the previous assessments.

3.2. Measurement, Assessment and Evaluation

- 3.2.1. The survey was carried out to BS7445-1:2003³ and BS7445-2:1991⁴.

3.3. Scope

- 3.3.1. This report covers all aspects of the noise survey, including:
 - the identification of acoustic design criteria;
 - an objective sound pressure level survey of the existing site;
 - analysis of the data; and,
 - the design of any mitigation to meet the required internal noise criteria.

3.4. Conclusions Summary

- 3.4.1. The facade sound insulation required to meet the guideline values from BS8233:2014 are summarised in Table 1. The glazing performance has been specified in terms of the road traffic corrected weighted sound reduction index, $R_w + C_{tr}$, and the ventilator performance has been specified in terms of the road traffic corrected element normalised level difference $D_{ne,w} + C_{tr}$.

Living rooms (Daytime)	Bedrooms (Night-time)
27 dB $R_w + C_{tr}$ / 33 dB $D_{ne,w} + C_{tr}$	27 dB $R_w + C_{tr}$ / 33 dB $D_{ne,w} + C_{tr}$

Table 1 – Required facade sound insulation (Glazing/Ventilator)

- 3.4.2. It should be noted that most standard thermal double glazing is capable of achieving ≥ 27 dB $R_w + C_{tr}$

¹ Sharps Redmore - Former Sewage Treatment Works, Fairbridge Way, Burgess Hill, RH15 8BF – Environmental Noise Report for residential development - Project No – 2120336 – 8th July 2021
² Sharps Redmore - Former Sewage Treatment Works, Fairbridge Way, Burgess Hill, RH15 8BF - Project No – 2120336 – Technical Note Re: Addendum to Noise Report 8th July 2021 – 17th January 2022
³ BS7445-1:2003 “Description and measurement of environmental noise – Part 1: Description of quantities and procedures”
⁴ BS7445-2:1991 “Description and measurement of environmental noise – Part 2: Guide to the acquisition of data pertinent to land use”

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5. Background

5.1. Noise Policy Statement for England

- 5.1.1. The Noise Policy Statement for England (NPSE), published in March 2010, states the long-term vision of Government noise policy 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”*.
- 5.1.2. This long-term vision 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;
 - Where possible, contribute to the improvement of health and quality of life.
- 5.1.3. The intention is that the NPSE should apply to all types of noise apart from noise in the workplace (occupational noise).

5.2. National Planning Policy Framework

- 5.2.1. The National Planning Policy Framework (NPPF) was published on the 27th of March 2012 and is updated regularly; it sets out the Government’s planning policies for England and how these are expected to be applied. The framework states that the planning system should contribute to and enhance the natural and local environment by:
- “preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability”*.
- 5.2.2. The NPPF requires that new developments be appropriate to their locations such that the effects of pollution on health have been taken into account. Planning policies and decisions should aim to:
1. avoid noise giving rise to significant adverse impacts on health and the quality of life;
 2. mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development; and,
 3. identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value.
- 5.2.3. Existing businesses near to proposed development 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.

5.3. National Planning Practice Guidance

- 5.3.1. The National Planning Practice Guidance (PPG) is a web-based resource, launched by the Department for Communities and Local Government (DCLG) which was published on the 29th November 2016 and is regularly updated to reflect the changes made to the NPPF and make it more accessible.⁵

⁵ <http://planningguidance.communities.gov.uk/>

5.3.2. There are a number of factors that determine whether a noise could be a concern to a receptor. These include: the absolute level of the noise and when it occurs, whether it is existing or new to the area, temporal characteristics, spectral content and the acoustic absorption in the area.

Perception	Examples of outcomes	Effect level	Action
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 (NOAEL)	No specific measures required
Lowest Observed Adverse Effect Level (LOAEL)			
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 (SOAEL)			
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 Adverse Effect	Avoid
Noticeable and very intrusive	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

Table 2 – Noise exposure hierarchy

5.3.3. It is emphasised in the PPG that the planning process should be used to mitigate and minimise the impact of noise. This could include: engineering the noise sources to be quiet, minimising the impact of noise through layout, using conditions/obligations to restrict activities, mitigating the impact in places where noise is likely to be experienced (e.g. using facade sound insulation).

PPG and Agent of Change

- 5.3.4. Where residential development is proposed close to existing commercial premises. Suitable mitigation measures may need to be put in place to avoid those activities having a significant adverse effect on future residents.
- 5.3.5. Where this is the case, the developer (or 'agent of change') would need to identify commercial premises that could cause a noise nuisance. This should include potential future noise sources that may not be present at the time a planning application is made. The agent of change will also need to mitigate and minimise noise to avoid potential significant adverse effects.

"Adopting this approach may not prevent all complaints from the new residents/users about noise or other effects, but can help to achieve a satisfactory living or working environment, and help to mitigate the risk of a statutory nuisance being found if the new development is used as designed (for example, keeping windows closed and using alternative ventilation systems when the noise or other effects are occurring)."

NPPG 009 Reference ID: 30-009-20190722 - Revision date: 22nd July 2019

- 5.3.6. What constitutes noise, as opposed to sound, is subjective and there is not a simple relationship between the level of a sound and the impact on those affected but could be dependent on:
- the source and absolute level of the noise;
 - the time of day it occurs;
 - how a new noise source and/or receiver relates to the existing sound environment; and,
 - the time and frequency characteristics of the noise
- 5.3.7. It is emphasised in the PPG that the planning process should be used to mitigate and minimise the impact of noise. This could include:
- engineering the noise sources to be quiet;
 - minimising the impact of noise through layout;
 - using conditions/obligations to restrict activities; and,
 - mitigating the impact in places where noise is likely to be experienced (e.g. using facade sound insulation).

"More specific factors to consider when relevant include:"

"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."

Paragraph: 006 Reference ID: 30-006-20190722 Revision date: 22nd July 2019

- 5.3.8. Care should be taken when considering mitigation to ensure the envisaged measures do not make for an unsatisfactory development.
- 5.3.9. It is possible that noise effects may be counteracted by providing: quiet facades containing habitable rooms, quiet private gardens or balconies, or quiet public amenity space within 5-minute walking distance.

6. Introduction

6.1.1. An environmental noise survey has been carried out for a proposed residential development at Fairbridge Way, Burgess Hill, RH15 8RY.

6.2. Proposed Development

6.2.1. An image showing the proposed location and layout of the Proposed Development is given in Figure 1.



Figure 1 - Plan showing the location and layout of the Proposed Development

7. Assessment Criteria

7.1. Guideline Values

BS8233:2014 Internal Ambient Noise Criteria

7.1.1. BS8233:2014 draws on the results of research and experience to provide information on the design of buildings that have internal acoustic environments appropriate to their function. The standard provides guideline internal values for dwellings for steady external noise sources. These have been summarised in Table 3.

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35dB $L_{Aeq,16hour}$	-
Dining	Dining Room	40dB $L_{Aeq,16hour}$	-
Sleeping (daytime resting)	Bedroom	35dB $L_{Aeq,16hour}$	30dB $L_{Aeq,8hour}$

Table 3 – BS8233:2014 guideline values for internal ambient noise levels from steady external noise sources

7.1.2. The guideline values are issued by the World Health Organisation (WHO) and assume normal diurnal fluctuations in external noise. They are expected to be achieved based on normal annual data and not in all circumstances. For example, it is normal to exclude occasional events such as fireworks night or New Year’s Eve.

BS8233:2014 Garden Criteria

7.1.3. For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50dB $L_{Aeq,T}$ with an upper guideline value of 55dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognised that these guideline values are not achievable in all circumstances where development might be desirable. In such cases, the lowest practicable levels should be achieved in external amenity areas but the development should not be prohibited.

7.2. Sleep Disturbance and L_{AFmax}

7.2.1. The WHO give specific guidance on acceptable internal and external L_{AFMAX} levels in residential areas. Table 1 of the WHO Guidelines for Community Noise⁶ requires that individual noise events inside dwellings should not regularly exceed 45dB L_{AFmax} .

7.2.2. BS8233:2014 states that L_{AFmax} criteria are suitable for regular individual noise events such as scheduled aircraft and passing trains.

⁶ Guidelines for Community Noise – Berglund et al – WHO: 1999

7.3. Approved Document - Part O - Noise

7.3.1. Approved Document O⁷ (ADO) was published on 15th December 2021 and was most recently updated on June 2022. The intention of this Approved Document is to assess the overheating risk of new residential dwellings.

Noise Related Requirements

7.3.2. ADO does not provide specific internal noise criteria but does provide sound pressure levels that, if exceeded the windows are likely to be kept closed by the occupant. These values are given below.

‘Windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following limits.

a. 40dB $L_{Aeq,T}$, averaged over 8 hours (between 11pm and 7am).

b. 55dB L_{AFmax} , more than 10 times a night (between 11pm and 7am).’

7.4. Approved Document O – Noise guide

7.4.1. Approved Document O Noise guide⁸ (“ADO Noise Guide”) provides guidance for acousticians to demonstrate compliance with the noise requirements of ADO.

7.4.2. This guidance document identifies the scope of the assessment and proposes that it be limited to bedrooms at night with reference to paragraphs 3.2 and 3.3 of ADO. The guidance document also proposes that the scope of the assessment be limited to ‘non-natural’ sources, i.e. not including sound from water (rainfall/flowing water) or non-domestic animals (birdsong) etc.

7.4.3. The guidance document provides external levels, above which the simplified method for determining overheating risk should not be used and dynamic thermal modelling should be used to demonstrate compliance, or a ventilation system installed in the identified properties to deal with overheating. These values are given in Table 4.

Parameter	High Risk Location	Moderate Risk Location
$L_{Aeq,8h}$, averaged over 8 hours (between 11pm and 7am)	45 dB	50 dB
L_{AFmax} , more than 10 times a night (between 11pm and 7am	60 dB	65 dB

Table 4 - Table 1 from ADO Noise Guide - External Noise Levels Above which the simplified method cannot be used

7.4.4. High risk locations are identified in ADO as parts of London and Manchester. A list of postcodes for these high risk locations are given in Appendix C of ADO. All areas that are not considered high risk are considered moderate risk Locations.

⁷ The Building Regulations 2010 – Overheating - Approved Document O – HM Government – 15th June 2022

⁸ Approved Document O – Noise Guide – November 2024 – Version 1.1

Removing Excess Heat Using Mechanical Means

7.4.5. The document provides specific guidance on noise from mechanical systems used for removing excess and the recommended noise levels are presented in Table 2 of the AVO Guide⁹. These values are given in Table 5.

Parameter	Bedrooms
Mechanical ventilation or mechanical cooling system noise	L _{Aeq,T} 30 (±5) dB

Table 5 - Table 2 of the AVO Guide - Recommended Noise Levels for Mechanical Ventilation or Mechanical Cooling Systems

7.4.6. In paragraph 5.4.5 the guidance document acknowledges that in some operating scenarios where rapid changes to the cooling or ventilation rates improve the thermal comfort of the occupant then higher noise levels up to 10 dBA may be appropriate.

⁹ Acoustics Ventilation and Overheating – Residential Design Guide, January 2020

7.5. Local Planning Authority Criteria

- 7.5.1. Outline planning permission was granted (Mid Sussex Council Planning Reference DM/19/1895) for the development of the site to provide up to 325 dwellings (use Class C3) with associated access, landscaping, and infrastructure. The local planning authority approved the application subject to planning conditions, including specific noise-related requirements for the proposed development. These noise-related requirements are detailed in Figure 2.

Condition 16: Prior to first occupation of dwellings in area A or C, as identified on drawing 26402-029 Rev B, details of an acoustic grade fence, including its location, shall be submitted to, and approved in writing by the Local Planning Authority. The acoustic grade fence shall be of such specification and height so to reduce the level of noise from adjoining commercial uses to a value not exceeding 52 dB $L_{Aeq16hr}$, free field in enclosed gardens or enclosed amenity area at dwellings in areas A and C. The acoustic grade fence shall be located in accordance with the details approved and must be erected prior to the occupation of the affected dwellings. The scheme shall only proceed in accordance with the approved details.

Condition 17: The reserved matters pursuant to condition 1 submitted in respect of any dwellings falling within area A, as shown on drawing 2643 029 Rev B shall be accompanied by a noise insulation scheme to ensure that external noise (from night time) does not result in an internal environment for bedrooms in excess of threshold values from the World Health Organisation (Guidelines of Community Noise, 1995/1999) when bedrooms are closed. The submitted scheme shall comprise controls on the internal layout, acoustic

double glazing and alternative means of ventilation. The scheme shall be implemented in accordance with the approved details and an independent report submit to the Local Planning Authority, prior to occupation of the dwellings, in order that it can be demonstrated that the required threshold values have been meet.

Condition 18: The reserved matters in respect of any dwelling falling within area B, as identified on drawing 26403-929 Rev B, shall be accompanied by a noise insulation scheme to ensure that external noise (from night time traffic) does not result in an internal environment for bedrooms in excess of threshold values from the WHO (1995/1999), when windows to bedrooms are closed. The submitted scheme shall comprise acoustic double glazing and alternative means of ventilation.

The submitted scheme shall also provide details of a landscape earth mound between dwellings in area B and the access road servicing the waste transfer station. The scheme shall be implemented as approved and an independent report submit to the Local Planning Authority, prior to occupation of the dwellings, in order that it can be demonstrated that the required threshold values have been meet

Figure 2 – Noise related planning requirements provided by the local planning authority

- 7.5.2. It is noted that the previous assessments included L_{Amax} measurements to address the requirements of Conditions 17 and 18. These measurements specifically related to night-time heavy goods vehicle movements, in this case associated with Lee Hire Recovery, located to the south of the development and operating during the night-time period (23:00–07:00). To maintain consistency with the earlier assessments, L_{Amax} has also been considered in this assessment.

8. Survey

8.1. Measurement Locations

8.1.1. Fixed position monitoring took place to account for the likely dominant noise sources. The monitoring equipment was located at least 1.5m from the ground and at least 3m from the next nearest reflecting surface. The monitoring positions are shown in Figure 3.



Figure 3 - Noise monitoring location on site

8.1.2. The measurement instrumentation used during the survey is detailed in the appendix. The acoustic equipment was calibrated to comply with Section 4.2 of BS7445-1:2003¹⁰ before and after the surveys. The calibration details are also detailed in the appendix.

8.2. Noise Climate

8.2.1. During the survey visits, the survey engineer noted that the noise climate was dominated by refuse collection vehicles and other road traffic accessing the Burgess Hill Recycling Centre via Fairbridge Way, with occasional vehicle movement to and from Lee Hire Recovery to the south of the development.

8.3. Meteorology

8.3.1. During the survey the weather information was noted. This is summarised in Table 6.

	1 st April 2025	2 nd April 2025
Roads(Wet/Dry)	Dry	Dry
Wind Speed (ms ⁻¹)/Direction	5 / E	6 / E

Table 6 - Meteorological data noted during the survey

¹⁰ BS7445-1:2003 "Description and measurement of environmental noise – Part 1: Guide to quantities and procedures"

8.4. Measurement and Timescale

8.4.1. Unattended monitoring was carried out between 1st April 2025 and 2nd April 2025. The measurements that have been made are summarised in Table 7.

Date	Type	Quantity
1 st April 2025 – 2 nd April 2025	Fixed/unattended	L _{Aeq,1min} / L _{AFmax}

Table 7 – Measurements made at the site of the Proposed Development

8.4.2. Sound pressure measurements were subsequently averaged into hourly, daytime and night-time periods. The acoustic measurements and their interpretation have been in accordance with BS 7445: Parts 1, and 2¹¹. All sound pressure levels are in dB (re 20µPa).

8.5. Results Summary

8.5.1. The fixed position external measurement results are summarised in Table 8.

Daytime dB, L _{Aeq,16hr}	Night-time dB, L _{Aeq,8hr}	Night-time dB, L _{AFmax}
58.2	39.0	59.4

Table 8 - Summary of the external sound pressure levels measured

¹¹ BS7445-2:1991 “Description and measurement of environmental noise – Part 2: Guide to the acquisition of data pertinent to land use”

9. 3D Noise Model

- 9.1.1. A 3D noise model has been constructed using SoundPLAN™ in order to predict the propagation of sound across the site of the Proposed Development. The calculation procedure has been used from ISO9613-2:1996¹² to predict the propagation of sound from source to receiver, taking into account distance, screening, and atmospheric and ground conditions.
- 9.1.2. Google Maps data has been used to create the existing roads, buildings and terrain data.
- 9.1.3. Fairbridge Road has been calibrated to the measured noise levels at the monitoring location.

9.2. Additional noise model parameters

- 9.2.1. The internal noise generated by the Waste Recycling Centre has been assessed using parameters provided in the Sharps Redmore Noise Assessment, as detailed in Figure 4.

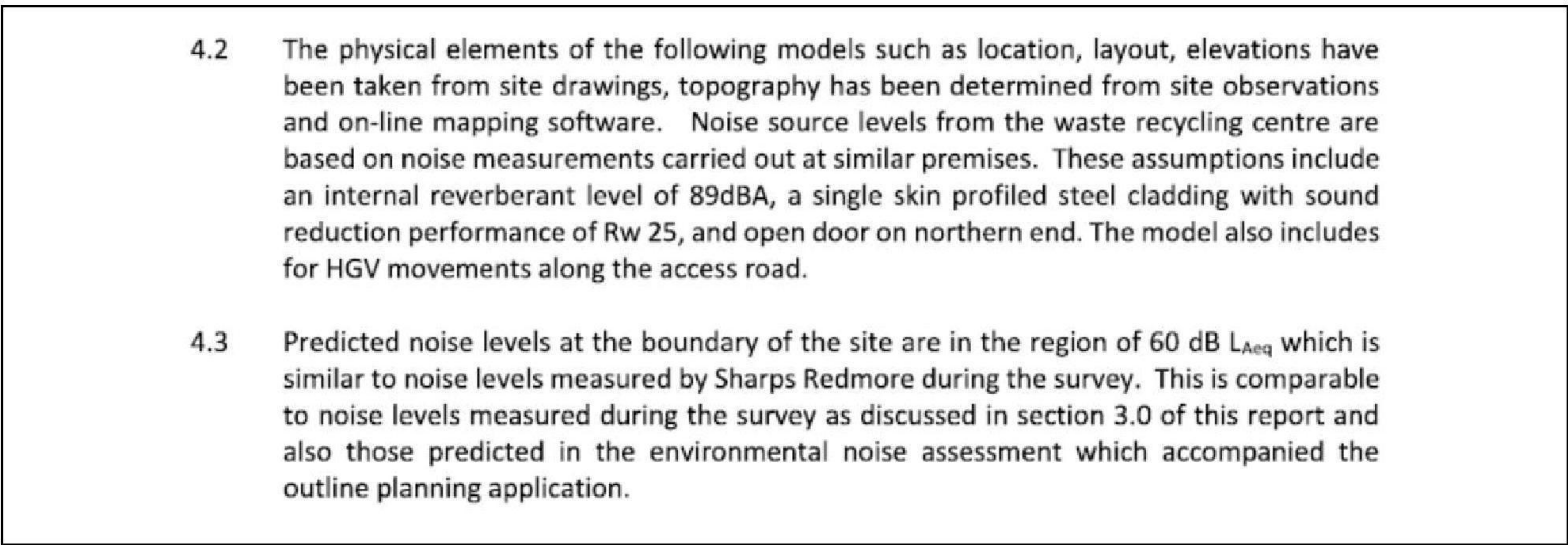


Figure 4 – Noise model parameters

- 9.2.2. The open door on the north end has been assumed to be 8m wide by 6m high, taken from Google Maps.
- 9.2.3. The noise model also incorporates the proposed acoustic fences described in the Sharps Redmore Addendum, shown in Figure 5.

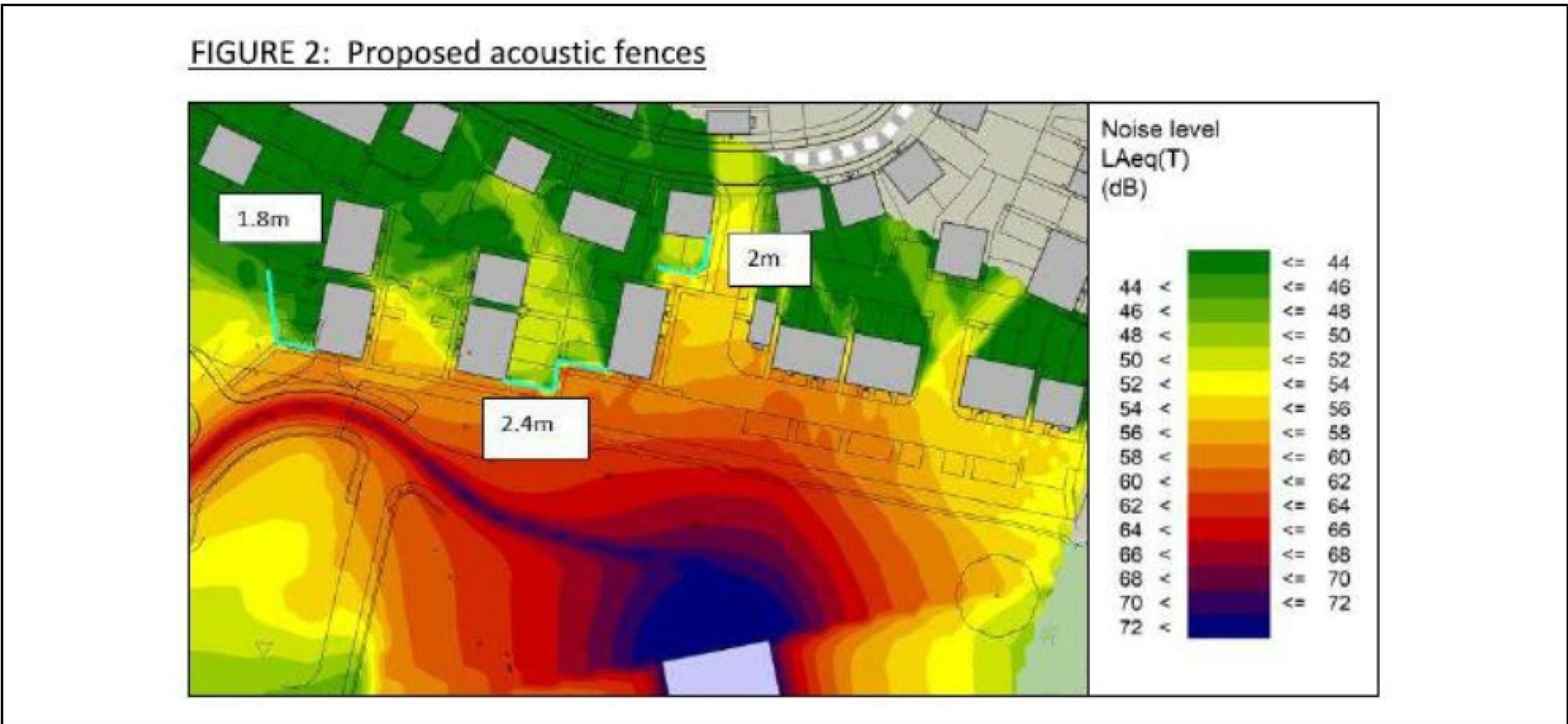


Figure 5 - Proposed acoustic fences taken from the Sharps Redmore Addendum

¹² ISO9613-2:1996 "Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation"

9.2.4. The results of the model have been illustrated in noise contour maps in Figure 6, Figure 7 and Figure 8. It should be noted that the receiver level takes into account the building heights and represents the maximum sound pressure level on the façade.

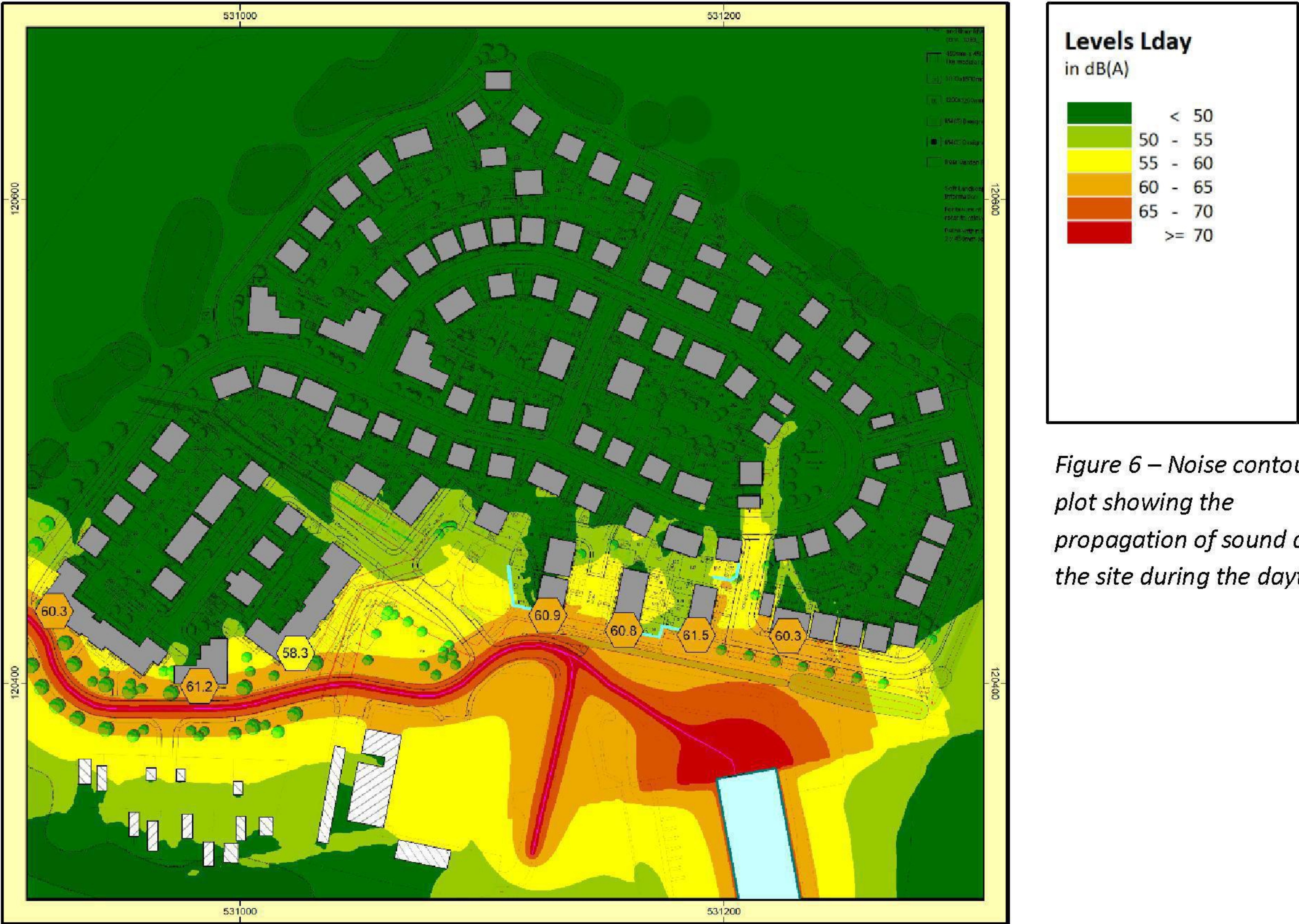


Figure 6 – Noise contour plot showing the propagation of sound across the site during the daytime

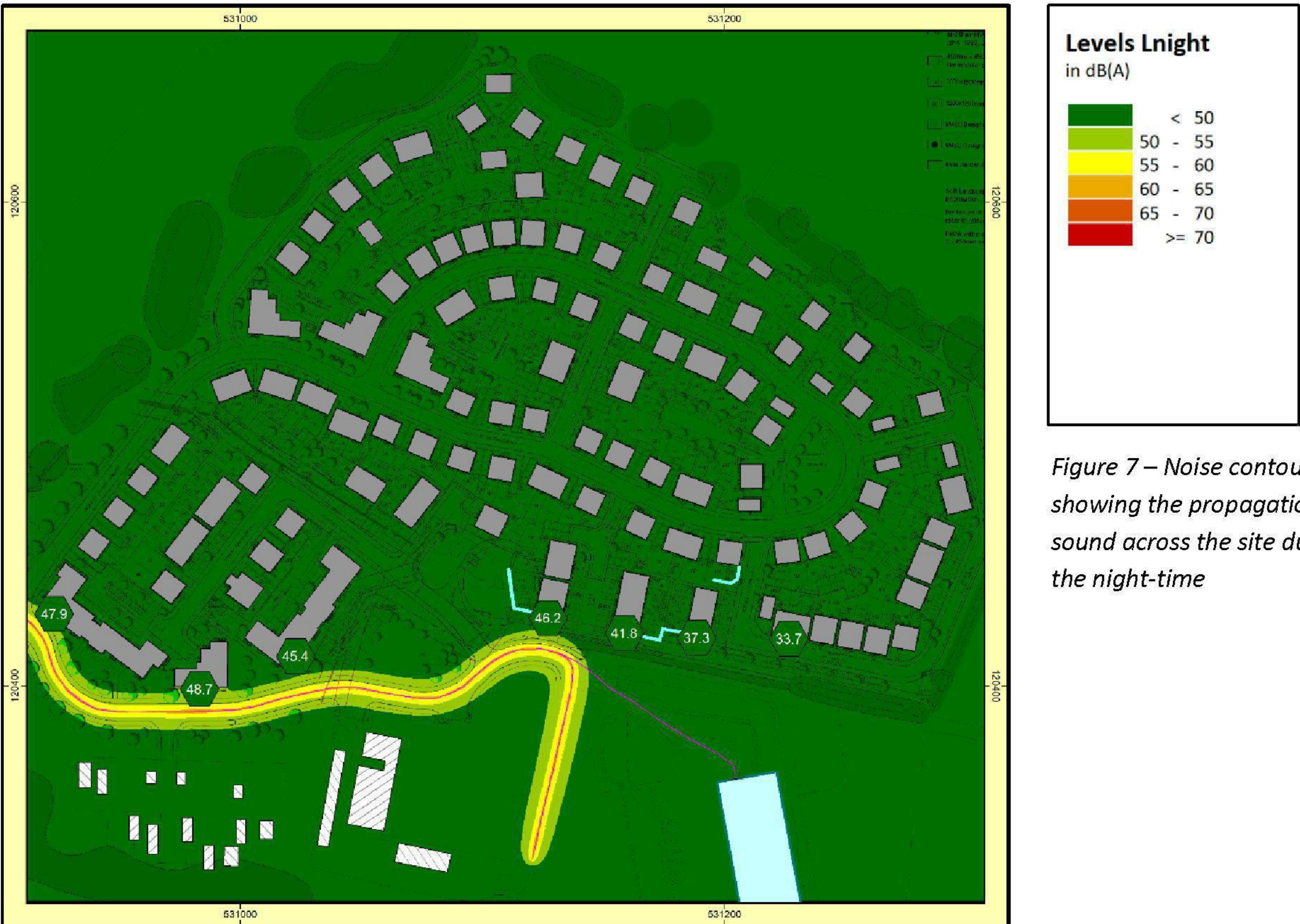


Figure 7 – Noise contour plot showing the propagation of sound across the site during the night-time

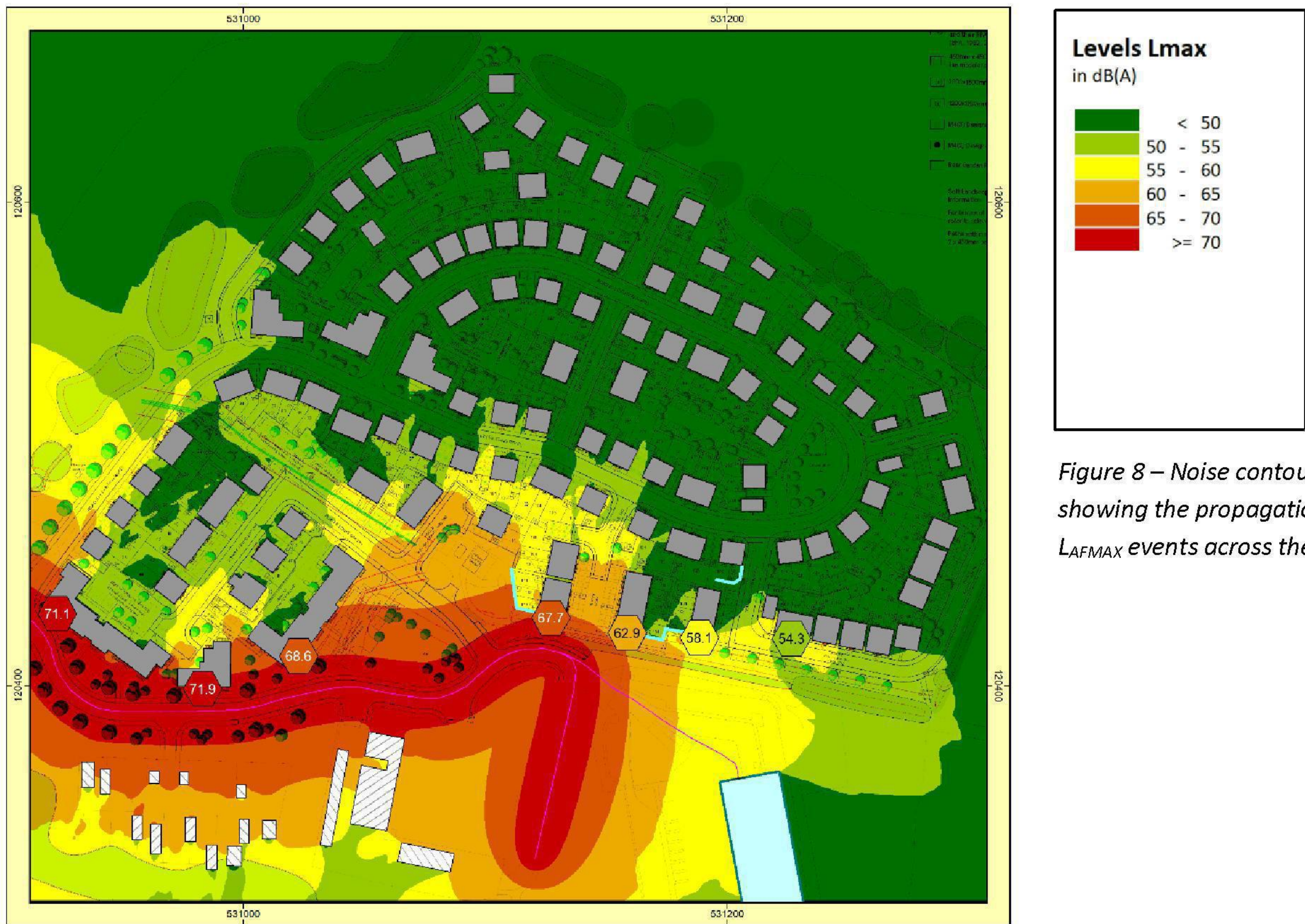


Figure 8 – Noise contour plot showing the propagation of LAFMAX events across the site

Measurement location	Daytime dB, LAeq,16hr	Night-time dB, LAeq,8hr	Night-time dB, LAFMAX
Highest affected façade	61.5	48.7	71.9

Table 9 - Summary of the predicted external sound pressure levels

10. Mitigation

10.1. Methodology

10.1.1. Based on the measured and predicted free-field sound pressure levels at the worst affected facades, the simple calculation method from BS8233:2014 has been used to determine the necessary sound reduction to meet the guideline values. Standard forms of construction are assumed such that the glazing is likely to be the lowest performing facade element.

10.2. Required Mitigation

10.2.1. The single figure glazing and ventilator performance requirements in order to achieve the internal design criteria are summarised in Table 10. The glazing performance has been specified in terms of the road traffic corrected weighted sound reduction index, $R_w + C_{tr}$, and the ventilator performance has been specified in terms of the road traffic corrected element normalised level difference $D_{ne,w} + C_{tr}$.

Living rooms (Daytime)	Bedrooms (Night-time)
27 dB $R_w + C_{tr}$ / 33 dB $D_{ne,w} + C_{tr}$	27 dB $R_w + C_{tr}$ / 33 dB $D_{ne,w} + C_{tr}$

Table 10 – Required facade sound insulation (Glazing/Ventilator)

10.2.2. It should be noted that most standard thermal double glazing is capable of achieving ≥ 27 dB $R_w + C_{tr}$

10.3. Glazing and Ventilator Specifications

10.3.1. The glazing and ventilator performance has been specified based on the performance data provided by Saint-Gobain and Greenwood Airvac. These are suggested configurations and any other glazing and vent combination can be used provided it achieves the minimum performance levels given in Table 10. The recommended glazing specification is given in Table 11.

Living rooms (Daytime)	Bedrooms (Night-time)
Specification 1	
4 (12) 4	4 (12) 4

Table 11 - Our recommended glazing configurations

10.3.2. Should penetrations be required for ventilation purposes, the $D_{ne,w} + C_{tr}$ provided by the total combination of ventilators should equal or exceed the values given in Table 10. It should be noted that the $D_{ne,w} + C_{tr}$ of a ventilator is based on a single ventilator and if more than one ventilator is included in each habitable room a higher individual $D_{ne,w} + C_{tr}$ will be required.

10.3.3. Our recommended ventilator configurations, calculated to work in conjunction with the glazing specifications, are summarised in Table 10 The specification provides an equivalent area of at least 5000mm². It should be checked by a suitably qualified person that this ventilator specification meets the requirements of Approved Document F.

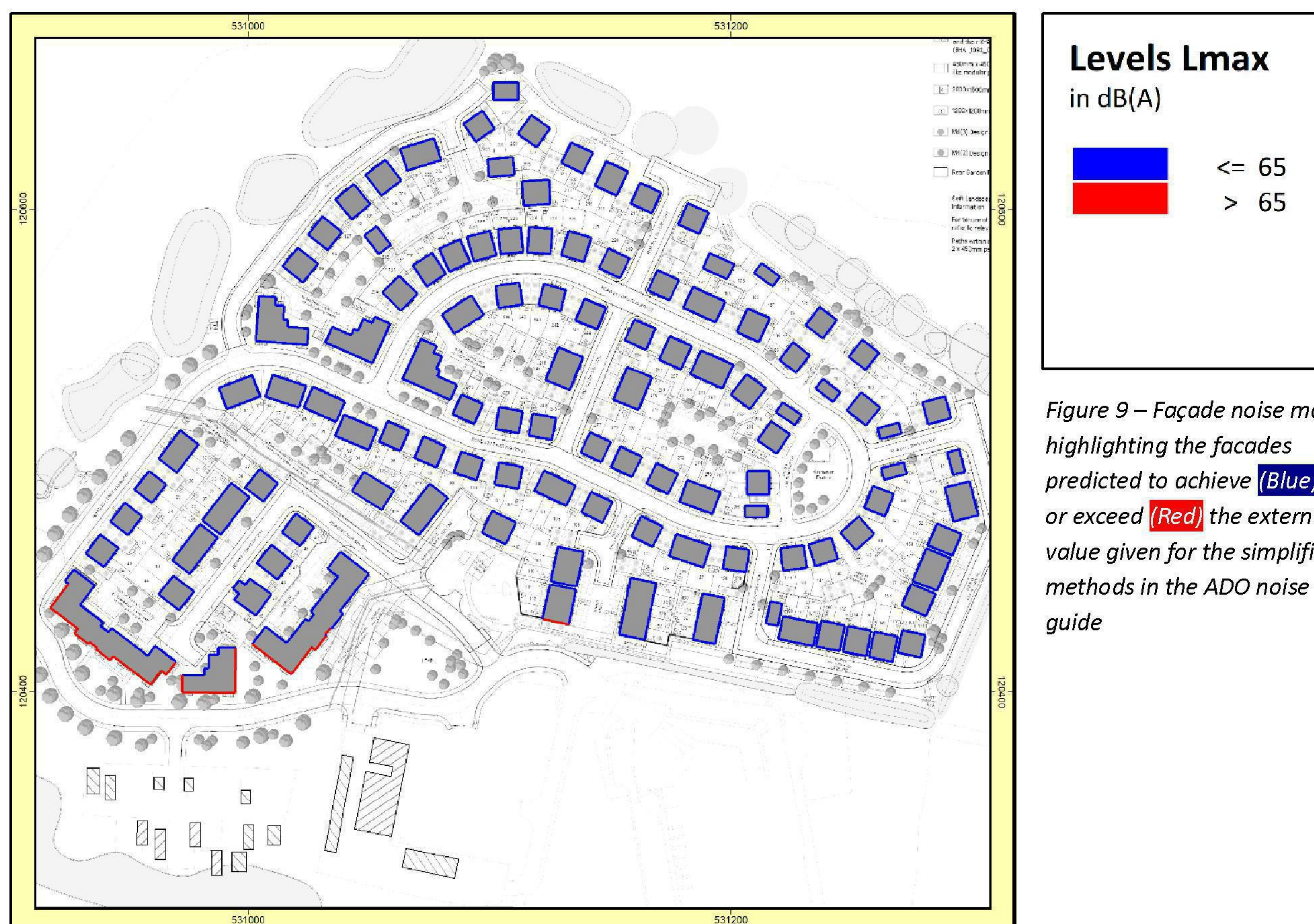
Living rooms (Daytime)	Bedrooms (Night-time)
Specification 1	
1 x Vent 5000EA	1 x Vent 5000EA

Table 12 - Our recommended ventilator configurations.

10.3.4. Given the assumptions in this method the information in this section should be treated as general guidance only. The acoustic performance of third party products cannot be guaranteed by noise.co.uk.

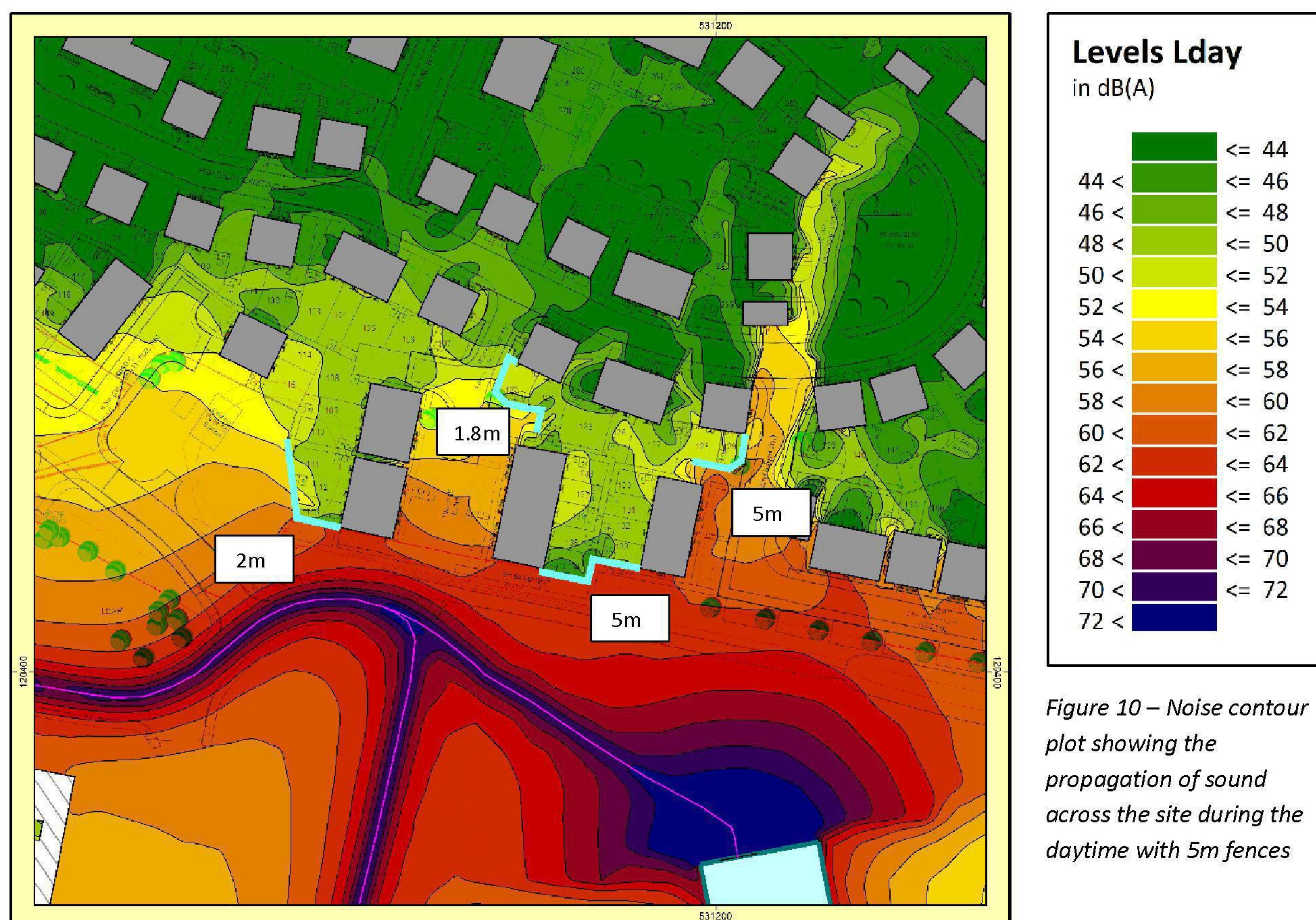
10.4. ADO Noise Guide Assessment

- 10.4.1. The simplified method given in the ADO Noise guide has been used to highlight the facades that are predicted to exceed the sound pressure level values given in Table 1 for moderate-risk locations.
- 10.4.2. The facades marked in red are predicted to exceed these values and facades marked in blue are predicted to meet, or fall below, these values. It should be noted that this assessment is intended only for bedrooms, so where there are no bedrooms located on a façade marked in red, this can be considered the same as a façade marked in blue. The results of the 3D noise model are given in Figure 9.



10.5. Element 3: External Amenity Area Noise Assessment

- 10.5.1. BS8223 states that it is desirable that the external noise level for amenity spaces, such as gardens and patios, does not exceed 50dB $L_{Aeq,T}$ with an upper guideline value of 55dB $L_{Aeq,T}$ which would be acceptable in noisier environments.
- 10.5.2. In this situation, Figure 6 shows that most garden areas are expected to achieve sound pressure levels ≤ 52 dB $L_{Aeq,T}$.
- 10.5.3. Plots 100 - 138 have some areas exposed to levels exceeding >52 dBA. Noise modelling has been used to demonstrate the measures required to achieve levels ≤ 52 dB $L_{Aeq,T}$ in accordance with the planning condition. The results of the noise model are given in Figure 10.



- 10.5.4. In this instance, achieving levels ≤ 52 dB to comply with the planning condition would require increasing the height of garden fences to 5m, which is deemed impractical.
- 10.5.5. Where the external sound pressure levels exceed the guidelines and condition, it should be considered that the standard acknowledges that there may be areas where development is desirable where these guideline values are not achievable. This will be true for higher noise areas such as city centres or urban areas adjoining the strategic transport network. In these situations, a compromise between elevated noise levels and other factors might be warranted, such as:
- the convenience of living in these locations; and/or,
 - making efficient use of land resources to ensure development needs can be met.
- 10.5.6. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited.

- 10.5.7. The most significant property of the barrier that affects its sound insulation is the mass per unit area. The Department for Transport provides specific guidance on the specification of the minimum mass per unit area for such barriers.¹³
- 10.5.8. Based on this guidance, the fences that border residential private gardens can be basic, wooden, standard close boarded fences with no gaps between the panels and the ground, or panels and the posts, and have a minimum wooden panel mass of 10Kg/m² to optimise their barrier performance; for example the 10Kg/m² mass can simply be achieved by a fence constructed of 19mm thick treated pine.¹⁴

11. Conclusions

- 11.1.1. An environmental noise survey has been carried out at the site of a proposed residential development at Fairbridge Way, Burgess Hill, RH15 8RY to determine typical ambient sound levels.
- 11.1.2. The sound levels have been used to calculate the required facade sound insulation to meet the guideline internal levels from BS8233:2014.
- 11.1.3. Table 10 in section 10 gives the required facade sound reduction by any glazing and ventilator combination to be compliant with the guideline values.
- 11.1.4. We strongly recommend that this report be passed to the local planning authority for approval prior to any works being carried out.

¹³ Department for Transport (1976) Noise Barriers – Standards and materials, Technical Memorandum H14/76

¹⁴ Based on the density of treated pine at 550Kg/m³

12. Appendix

APPENDIX A: Summary Information

Required ISO Test Report Information (cross referenced where required)			
		Measurements carried out to:	Analysed to:
A	Standards	BS 7445-1: 2003 BS 7445-2: 1991	BS 8233:2014
B	Organisation performed the measurements	noise.co.uk Ltd, The Haybarn, Newnham Grounds, Kings Newnham Lane, Bretford, Coventry, CV23 0JU.	
C	Name of Client	Places For People Developments Ltd	
D	Full site address	Fairbridge Way Burgess Hill RH15 8RY	
E	Date of surveys	Survey Date: 1 st April 2025 - 2 nd April 2025	
F	Description & identification of Proposed Development	It is proposed to develop the site for residential use.	
G	Brief Description of details of Procedure & equipment	See Section 5 of this report.	

APPENDIX B: Technical Appendix

12.1.1. Measurements were made using the following equipment:

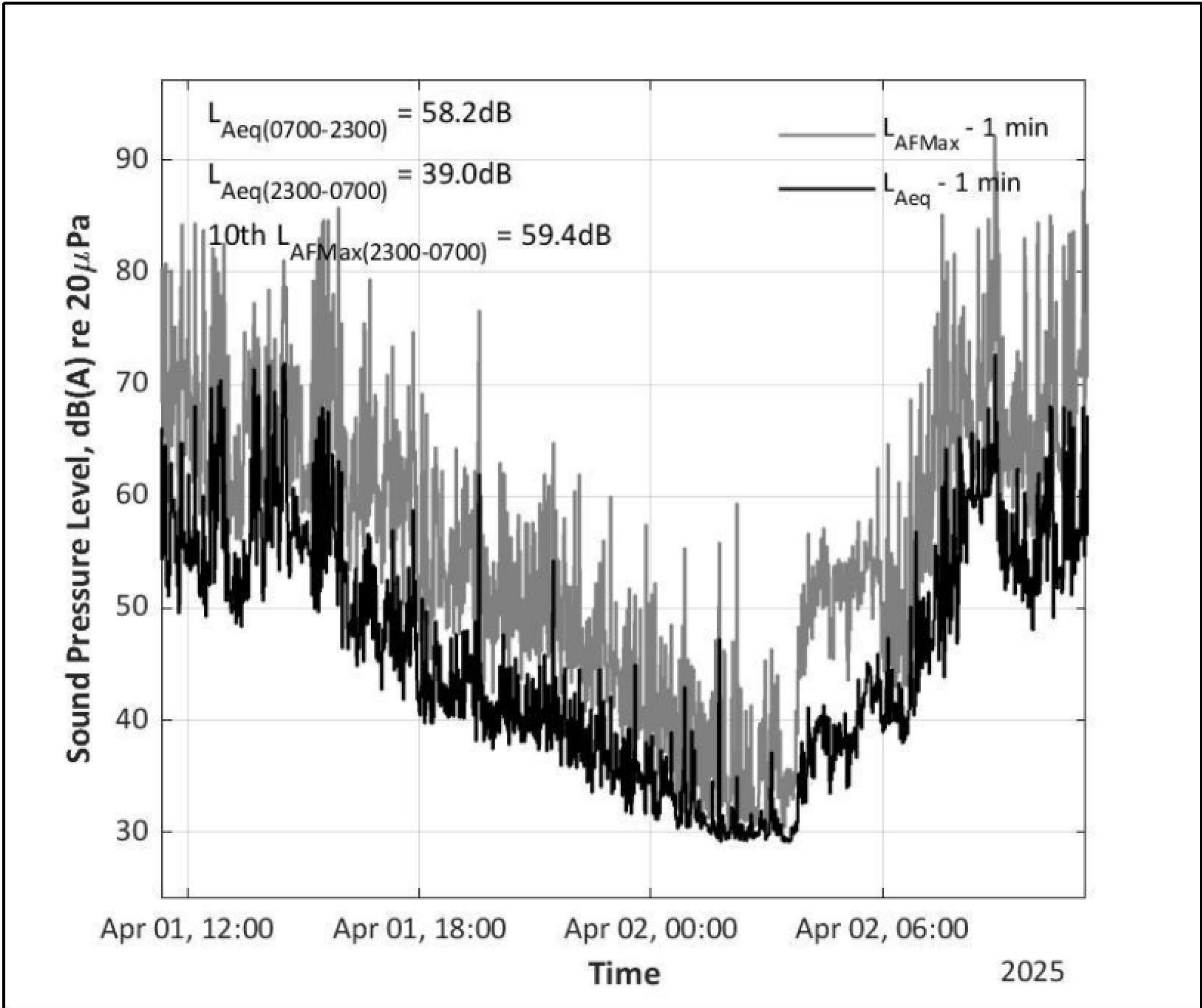
Monitoring Position	Sound Level Meter (Serial Number)	Calibrator (Serial Number)
1	SoftdB Piccolo 2 (PO221070104)	BSWA CA114 (590010)

12.1.2. The equipment has traceable calibration. The sound level meter was calibrated immediately prior to and immediately after the measurements were carried out.

Sound Level Meter	Before	After
SoftdB Piccolo 2 (PO221070104)	94.0 dB	94.0 dB

12.1.3. There was no adverse deviation.

APPENDIX C: Raw Data



Information taken from the Sharps Redmore Noise Assessment Report and Addendum

3.0 Survey Results

3.1 A noise survey was carried out by Sharps Redmore to determine existing noise levels at the site. Measurements were taken during the daytime at a location on the boundary of the proposed residential development as shown in Figure 3 below. The measurements location was chosen to represent the closest part of the site to the waste recycling facility.

FIGURE 3: Monitoring Location



3.2 Noise levels were measured during the daytime period on the 15th May 2021 between 10:50 and 12:00 hours. Measurements were taken using a Norsonic sound level meter which was calibrated before and after the survey with no drift in accuracy found. Measurements were taken in free-field conditions in weather conditions that were suitable for taking measurements i.e. dry with light wind. The results of the survey are shown in Table 2 below:

TABLE 2: Survey Results

Date/Time	Noise Level dB			
	L _{Aeq5min}	L _{Amax}	L _{Amin}	L _{A90,5min}
(2021/04/15 10:50:00.00)	59	73.8	44.1	47.4
(2021/04/15 10:55:00.00)	61.7	76.7	43.7	47.7
(2021/04/15 11:00:00.00)	58.2	73.3	40.1	45
(2021/04/15 11:05:00.00)	54.1	65.1	41.5	45.7
(2021/04/15 11:10:00.00)	58	75.1	43.8	46.6
(2021/04/15 11:15:00.00)	54.2	67	42.6	46.1
(2021/04/15 11:20:00.00)	58.2	71.5	43.3	46
(2021/04/15 11:25:00.00)	60.8	75.4	41.5	48.6
(2021/04/15 11:30:00.00)	59	71.9	47.7	51
(2021/04/15 11:35:00.00)	59.8	74.6	45.1	49.9
(2021/04/15 11:40:00.00)	55.8	69	42.9	49.3

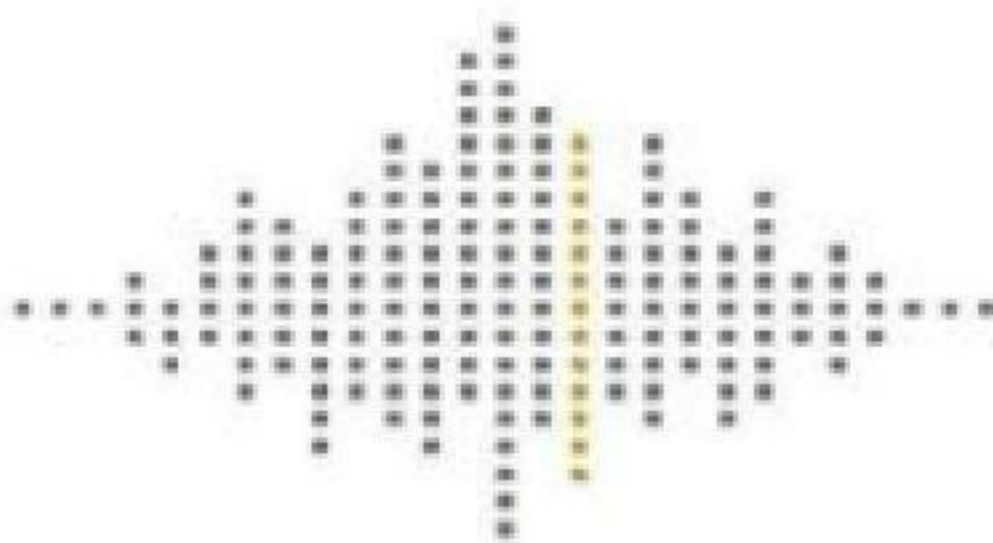
- 3.3 Existing noise levels were dominated by activity at the waste recycling facility, localised traffic and distant traffic noise. Typical ambient noise levels were in the region of 60 dB L_{Aeq} , maximum noise levels from passing HGV's on the road were in the region of 76 dB L_{Amax} .
- 3.4 Other commercial premises identified during the survey included a vehicle recovery yard (Southern Transport). Activity at the site during the survey was negligible however SR understands that the site operates 24-hours a day providing emergency recovery. The main noise impact will therefore be noise from recovery vehicles leaving the site during the night time period.

4.0 SoundPLAN model details

- 4.1 To determine the impact of noise from the commercial premises, SR has used SoundPLAN computer modelling software. SoundPLAN calculates the overall L_{Aeq} and L_{Amax} levels at defined receptors in accordance with relevant standards. The calculations are based on a number of input parameters, including noise source data, barriers, topography, intervening ground conditions and other buildings in the area.
- 4.2 The physical elements of the following models such as location, layout, elevations have been taken from site drawings, topography has been determined from site observations and on-line mapping software. Noise source levels from the waste recycling centre are based on noise measurements carried out at similar premises. These assumptions include an internal reverberant level of 89dBA, a single skin profiled steel cladding with sound reduction performance of R_w 25, and open door on northern end. The model also includes for HGV movements along the access road.
- 4.3 Predicted noise levels at the boundary of the site are in the region of 60 dB L_{Aeq} which is similar to noise levels measured by Sharps Redmore during the survey. This is comparable to noise levels measured during the survey as discussed in section 3.0 of this report and also those predicted in the environmental noise assessment which accompanied the outline planning application.
- 4.3 The results of the acoustic modelling are shown in Figure 4 and 5. The following scenarios have been considered.

Figure 4: Daytime Noise Levels L_{Aeq} – No mitigation measures

Figure 5: Daytime Noise Levels L_{Aeq} – With acoustic barrier



Reference: Former Sewage Treatment Works, Fairbridge Way, Burgess Hill
Project No: 2120336

Date: 17 January 2022

Technical note
Re: Addendum to Noise report Dated 8 July 2021

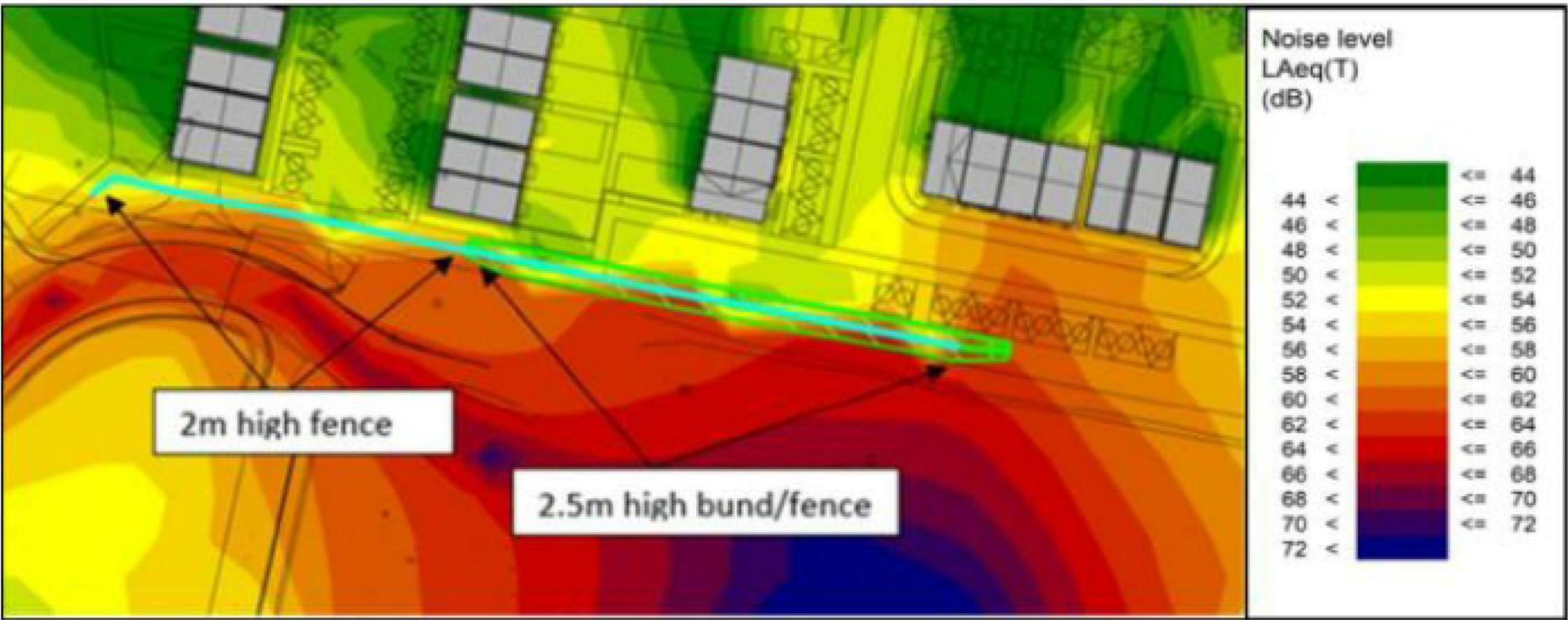
Background

Sharps Redmore has prepare a noise assessment for reserved matters application for a new residential development of the former sewage treatment works in Fairbridge Way, Burgess Hill, RH15 8BF. The application (Planning Reference DM/19/1895) was granted subject to planning conditions including Condition 16 which stated the following:

Prior to first occupation of dwellings in area A or C, as identified on drawing 26402-029 Rev B, details of an acoustic grade fence, including its location, shall be submitted to, and approved in writing by the Local Planning Authority. The acoustic grade fence shall be of such specification and height so to reduce the level of noise from adjoining commercial uses to a value not exceeding 52 dB LAeq16hr, free field in enclosed gardens or enclosed amenity area at dwellings in areas A and C. The acoustic grade fence shall be located in accordance with the details approved and must be erected prior to the occupation of the affected dwellings. The scheme shall only proceed in accordance with the approved details.

A noise assessment has been prepared by Sharps Redmore (dated 8 July 2021) to discharge the planning conditions which concluded that subject to mitigation measures, including an acoustic fence along the southern boundary of the site as shown in Figure 1 below, noise levels in enclosed will be within the required criterion of 52 dB LAeq16hr.

FIGURE 1: Proposed location of acoustic barrier



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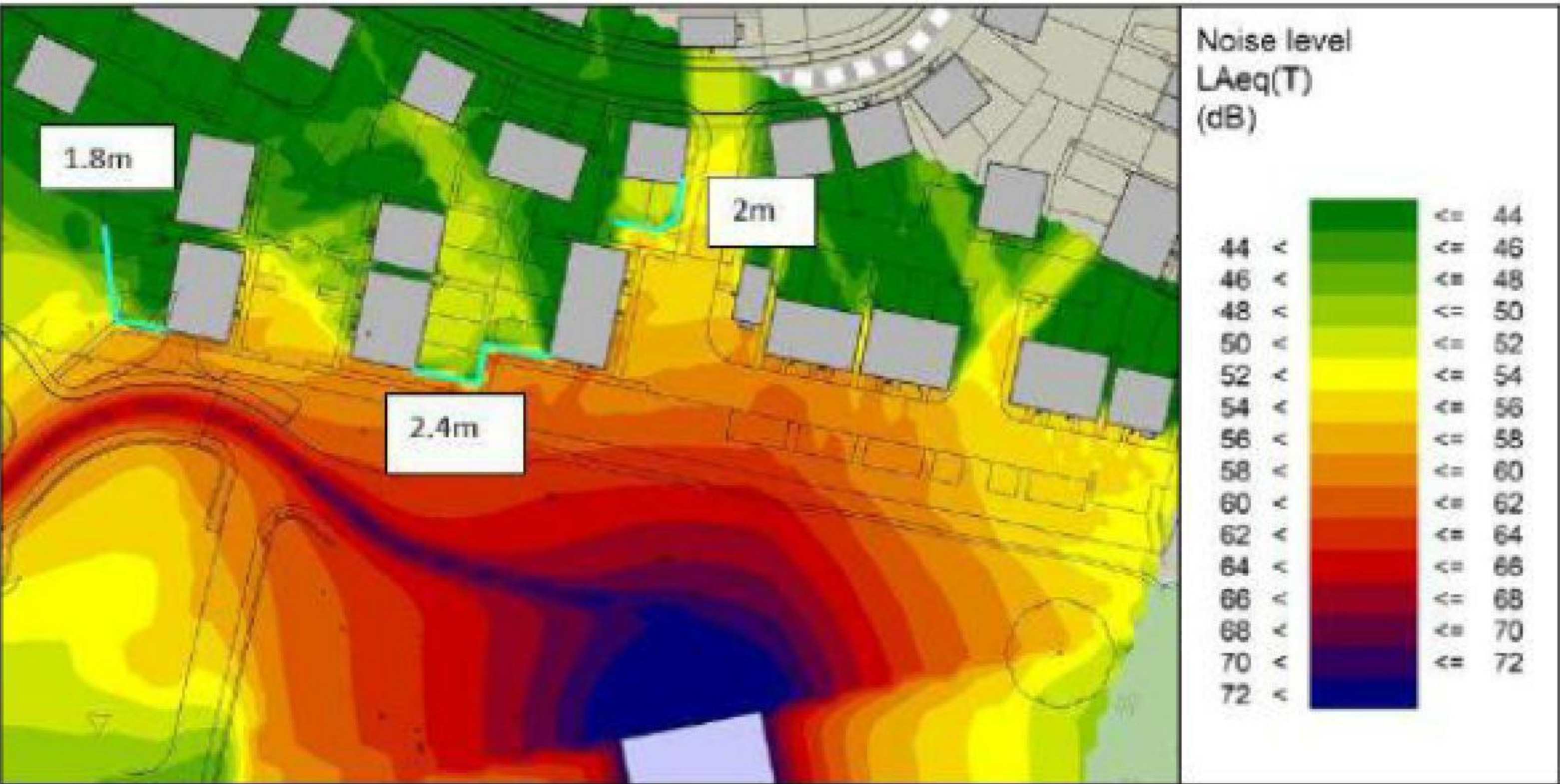
SR have been advised that the location of the barrier is within a Southern Water easement zone, as a result it has been necessary to redesign the site, close to the southern boundary. These changes include the removal of the boundary acoustic fence/bund as shown in Figure 1 and instead using localised screening around the gardens.

Therefore, the purpose of this report is to consider the impact of the changes to the proposed layout on the predicted noise levels in the proposed gardens.

Noise Assessment

Similar to the previous assessment SR has used SoundPLAN computer modelling to predict noise within gardens. As shown in Figure 2 below to achieve the recommended levels around it will be necessary to have acoustic fences/walls around plots 110 – 113, 128,129, 133 and 134.

FIGURE 2: Proposed acoustic fences

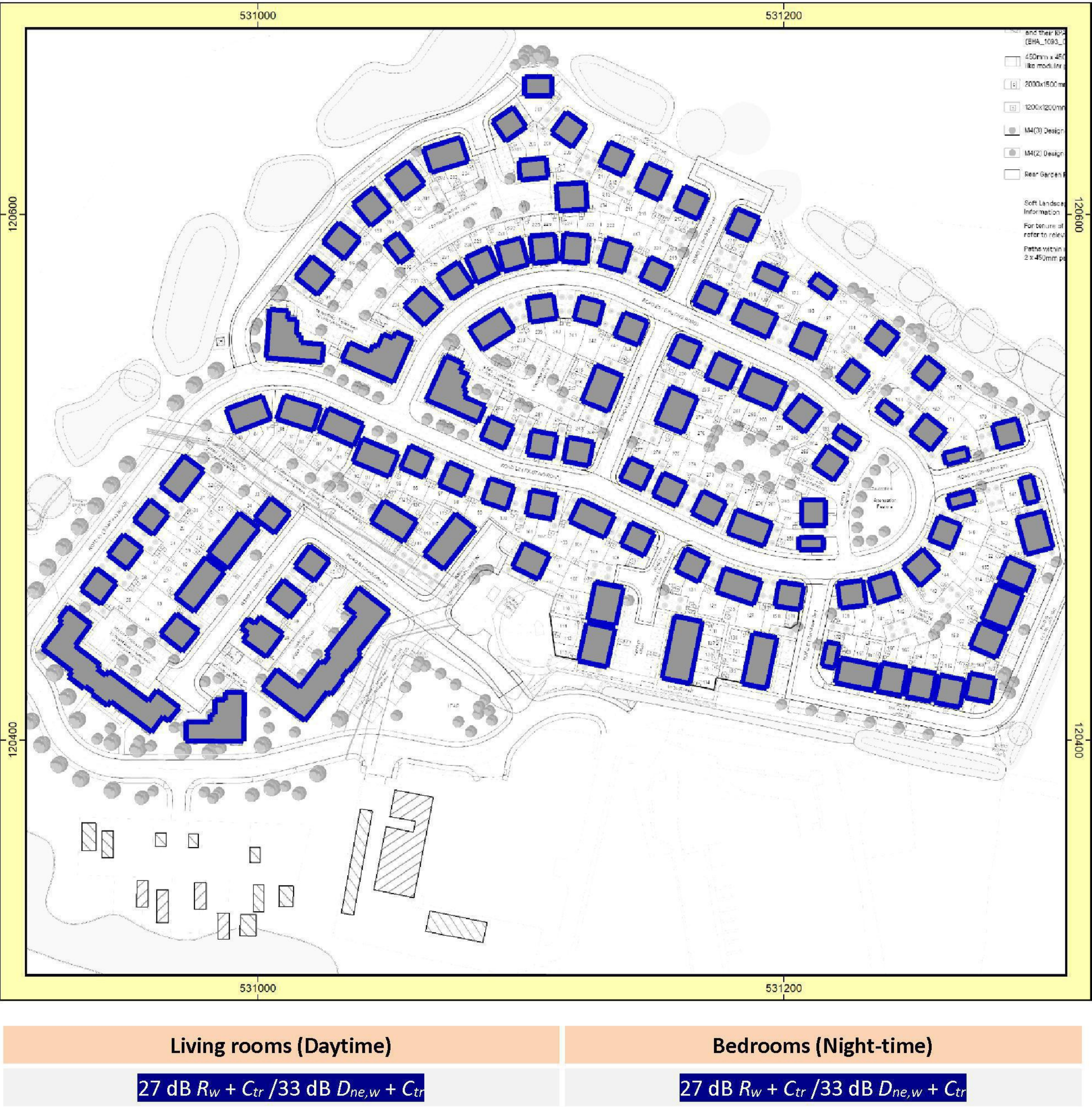


As shown in Figure 2 below with the addition of localised screening around the properties identified above, noise levels from commercial activity within all the residential properties within Area C will be the recommended criteria of 52 dB LAeq16hr as required by Condition 16.

Any acoustic fence should be meet the same minimum specification as that previously recommended and a minimum of 25mm thickness in accordance with the comments made by Mr Nick Bennett, Environmental Health Officer, at Mid Sussex District Council.

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APPENDIX E: Glazing Mark-up



APPENDIX F: Zehnder LPID100 fan

■ Decorative Radiators ■ Comfortable indoor ventilation ■ Heating and cooling ceiling systems ■ Clean air solutions

Zehnder LPID100

The Zehnder LPID100 is a low profile induct 100mm fan. It is ideal for residential applications where the habitable rooms are at risk of overheating, or require purge ventilation due to sealed windows on noise sensitive sites or within a AQMA (Air Quality Management Area).

Key Features

- Designed to fit within a ceiling void, cupboard or loft space.
- 100% variable speed control via optional SDC1 controller.
- High speed only using switching by others without the need for SDC1 controller.
- Can be installed in any orientation, horizontal, vertical, on floor, wall or ceiling.
- 4 air changes an hour for rooms up to 15m² per fan, large rooms can use multiple fans wired in parallel.

Article Numbers

Description	Product Code
Fan	
Low profile induct fan, 100mm	LPID100
Controller	
Superduct controller, 1.5 amp	SDC1

Technical Specification	Dimensions
Weight	4.9kg
Ducting ø	100mm
Materials	Galvanised Sheet Steel
Supply Voltage	230V / single-phase / 50Hz
Maximum power consumption	58W
Current Draw	0.25A
Fuse rating	3 amp
Max Operating temperature	80 °C
Temp IP Rating	IP44
