



Armstrong House
3 Bassett Avenue
Southampton
SO16 7DP

T: 02381 555 000

LAND AT CAMPSFIELD, SOUTHWATER
NOISE ASSESSMENT

Technical Report: R11503-1 Rev 4

Date: 24th July 2026

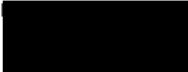
For: Miller Homes
Unit 3, Faraday Office Park,
Rankine Road,
Basingstoke,
RG24 8QB

24 Acoustics Document Control Sheet

Project Title: Land at Campsfield, Southwater – Noise Assessment

Report Ref: R11503-1 Rev 4

Date: 24th July 2026

	Name	Position	Signature	Date
Prepared By	Beatriz Nogueira BEng MIOA	Senior Consultant		24/07/2026
Reviewed and Approved By	Chris McConnell BSc MSc MIOA	Principal Consultant		24/07/2026
For and on behalf of 24 Acoustics Ltd				

Document Status and Approval Schedule

Revision	Description	Prepared By	Reviewed and Approved By
0	Approved for issue	Beatriz Nogueira	Aileen Reed
1	Minor Revision	Beatriz Nogueira	Aileen Reed
2	Minor Revision	Beatriz Nogueira	Aileen Reed
3	Minor Revision	Beatriz Nogueira	Aileen Reed
4	Minor Revision	Beatriz Nogueira	Chris McConnell

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1.0 INTRODUCTION

- 1.1 Miller Homes Ltd has appointed 24 Acoustics Ltd to undertake a noise assessment in relation to proposed residential development on Land at Campsfield, Southwater.
- 1.2 This noise assessment report has been prepared in support of an application for all outstanding Reserved Matters for the erection of 82 dwellings with associated parking, landscaping, surface and foul water drainage, open space, and associated works and infrastructure pursuant to permission reference DC/25/0102 on land at Campsfield, Linfield Close, Southwater.
- 1.3 Planning Condition 12 from the outline consent (reference DC/25/0102) relates to external noise impact on new residents. All the requirements of Condition 12 imposed on the outline consent have been addressed in this report.
- 1.4 This report presents the results of the assessment, following site visits and ambient noise surveys undertaken between 19th and 24th February 2026.
- 1.5 This report has also been informed by pre-application advice received from the council, in respect of the comments raised by the Council's Environmental Health Team.
- 1.6 Pre-application advice has been received on 8th June 2026 (reference PE/26/0121), which includes comments on noise and overheating affecting dwellings along the eastern side of the site, and mentions the acoustic fence recommended during outline stage.
- 1.7 The EHO comments have been addressed in this noise assessment report. Noise mitigation measures and acoustic performance targets established at outline stage have been carried forward into the reserved matters application in terms of compliance.
- 1.8 All noise levels in this report are presented in dB relative to 20µPa.

2.0 SITE DESCRIPTION

- 2.1 The site is located to the west of the A24 dual carriageway. Accordingly, this noise assessment has included:
 - Environmental noise monitoring;
 - Consideration of existing noise sources near the development site;
 - Assessment of internal noise levels within the proposed dwellings.

- 2.2 Site surroundings include Southwater residential properties to the north, and farmland elsewhere. The site location is shown in Figure 1.
- 2.3 The proposed scheme provides 82 new residential dwellings comprising detached and semidetached houses. The proposed site layout is shown in Figure 2.
- 2.4 Outline permission has been granted for the scheme with conditions (Horsham District Council, planning reference DC/25/0102). At the outline stage, noise mitigation was considered in the approved parameter plan including acoustic fencing along the eastern boundary of the site, and private gardens set behind buildings to provide acoustic screening.
- 2.5 Planning Condition 12 from the outline consent relates to external noise impact on new residents, stating:

"No development shall commence until a scheme for sound attenuation against external noise has been submitted to and approved by the Local Planning Authority, and shall include an overheating assessment. The approved sound attenuation works shall be completed before the dwellings are occupied and be retained thereafter."

Reason: As this matter is fundamental in the interests of residential amenities by ensuring an acceptable noise level for the occupants of the development in accordance with Policy 33 of the Horsham District Planning Framework (2015)."

3.0 CRITERIA

NPPF, NPSE and PPG

- 3.1 The National Planning Policy Framework (NPPF) [Reference 1] (updated February 2025) states in relation to noise that planning policies and decisions should aim to:
- Mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
 - Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason

3.2 The NPPF refers to the Noise Policy Statement for England (NPSE) [Reference 2] which is intended to apply to all forms of noise, including environmental noise, neighbour noise and neighbourhood noise. The NPSE sets out the Government's long-term vision 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' which is supported by the following aims:

- Avoid significant adverse impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life.

3.3 The NPSE defines the concept of a 'significant observed adverse effect level' (SOAEL) as 'the level above which significant adverse effects on health and quality of life occur'. The following guidance is provided within the NPSE:

"It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available."

3.4 The Planning Practice Guidance (PPG) [Reference 3] is written to support the NPPF with more specific planning guidance. The PPG reflects the NPSE and states that noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment. It also states that opportunities should be taken, where practicable, to achieve improvements to the acoustic environment. The PPG states that noise can over-ride other planning concerns but should not be considered in isolation from the other economic, social and environmental dimensions of the proposed development.

ProPG

3.5 The Professional Practice Guidance on Planning and Noise (ProPG) [Reference 4] was published jointly by the Association of Noise Consultants, Institute of Acoustics and Chartered Institute of Environmental Health in May 2017.

3.6 The guidance describes a recommended approach for new residential development, which includes four key elements of the assessment process, identified below:

- (i) Good acoustic design process;
- (ii) Internal noise level guidelines;
- (iii) External amenity area noise assessment;
- (iv) Assessment of other relevant issues.

3.7 It is important to note that the guidance in ProPG does not constitute an official government code of practice and neither replaces nor provides an authoritative interpretation of the law or government policy.

BS 8233 and World Health Organisation

3.8 BS 8233:2014 [Reference 5] provides design guidance for dwelling houses, flats and rooms in residential use and recommends that internal noise levels in dwellings do not exceed 35 dB $L_{Aeq,16 \text{ hour}}$ in living rooms and bedrooms during the day, 40 dB $L_{Aeq, 16 \text{ hour}}$ in dining rooms during the day and 30 dB $L_{Aeq, 8 \text{ hour}}$ in bedrooms at night.

3.9 BS 8233 also notes that "Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$, depending on the character and number of events per night."

3.10 The World Health Organisation (WHO) [Reference 6] provides guidance on desirable internal noise levels to minimise the risk of sleep disturbance. The WHO 1999 guidelines suggest internal noise levels not exceeding 30 dB $L_{Aeq, 8 \text{ hour}}$ or regularly exceeding 45 dB $L_{Amax,f}$ for 'a good night's sleep'.

3.11 BS 8233 provides an aspirational upper guideline value of 55 dB $L_{Aeq 16 \text{ hour}}$ for noise levels within external amenity areas. The standard also recognises that higher external amenity noise levels may be acceptable, stating:

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

Approved Document O

- 3.12 Approved Document O (ADO) of the Building Regulations [Reference 7] requires all new dwellings to provide mitigation to control overheating
- 3.13 Section 3 of the document provides thresholds for night-time noise levels within bedrooms, stating:

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

- a. 40 dB $L_{Aeq,T}$, averaged over 8 hours (between 11pm and 7am).*
- b. 55 dB L_{AFmax} , more than 10 times a night (between 11pm and 7am)."*

Summary of Criteria

- 3.14 In line with the above guidance, the impact of road traffic noise upon the proposed development has been assessed in accordance with the following methodology:
- Noise levels inside the properties:
 - ≤ 35 dB $L_{Aeq, 16 \text{ hour}}$ in bedrooms and living rooms during the daytime (07:00 to 23:00 hours)
 - ≤ 30 dB $L_{Aeq, 8 \text{ hour}}$ in bedrooms at night (23:00 to 07:00 hours)
 - ≤ 45 dB $L_{Amax,f}$ in bedrooms for regular events at night (23:00 to 07:00 hours)
 - Noise levels in external amenity areas considered against the aspirational guideline values stated in BS 8233: 2014.

4.0 ENVIRONMENTAL NOISE MEASUREMENTS

Measurement Instrumentation and Procedure

- 4.1 Environmental noise measurements were undertaken at the site between 19th and 24th February 2026 in order to establish existing ambient noise levels.
- 4.2 Noise measurements were undertaken at a location which is representative of proposed dwelling façades, at approximately 35 metres from the nearest edge of the A24 and a height of 4 m above local ground level.
- 4.3 The long-term unattended monitoring location is shown in Figure 1.

4.4 Measurements were made in accordance with BS 7445: 1991 "Description and measurement of environmental noise Part 2 - Acquisition of data pertinent to land use" [Reference 8]. All noise measurements were undertaken in free-field conditions, using the following equipment:

- Rion (Class 1) precision sound level meter Type NL52;
- Brüel and Kjær acoustic calibrator Type 4231.

4.5 The instrumentation was equipped with an environmental microphone. The instruments were powered by external batteries and stored in weatherproof cases. The calibration of all instrumentation was verified before and after the tests and no significant signal variation occurred. Calibration of 24 Acoustics' equipment is traceable to National Standards.

4.6 The weather conditions during the survey period were variable, with wind speeds less than 5 m/s and short periods of rain. Periods of variable weather have not been found to affect the data.

Noise Measurement Results

4.7 The measured free-field ambient (L_{Aeq}) data values have been averaged to generate overall 16-hour daytime and 8-hour night-time levels. Typical maximum night-time noise levels have been determined in terms of the tenth highest value.

4.8 A summary of the measured noise levels is shown in Table 1, with full results shown graphically in Appendix B.

Date	Sound Pressure Level (dB)		
	Daytime (07:00 to 23:00)	Night-time (23:00 to 07:00)	
	L_{Aeq} , 16 hour	L_{Aeq} , 8 hour	Typical $L_{Amax, f}$
Thursday 19/2/2026	67	60	73
Friday 20/2/2026	66	57	72
Saturday 21/2/2026	65	56	71
Sunday 22/2/2026	65	60	74
Monday 23/2/2026	66	60	74
Representative	66	59	73

Table 1: Measured Noise Levels at Location 1 (A24) (* = incomplete period)

5.0 NOISE MODELLING

- 5.1 An acoustic model of the site has been developed to determine the noise levels across the site from traffic movements on the A24. The model has been produced using IMMI 2024 noise mapping software and has used the propagation methodology of CRTN [Reference 9] which takes into account the effects of geometric divergence, acoustic screening and ground and atmospheric absorption. The model has used 70% soft ground ($G=0.7$), ambient temperature of 10 degrees C and a relative humidity of 70%. Downwind propagation has been assumed to represent a worst-case assessment.
- 5.2 Figure 3 shows the predicted L_{Aeq} noise contours across the proposed development site for the daytime at a height of 1.5 m above local grade, and for the night-time at a height of 4 m above local grade.

Noise Mitigation

- 5.3 All habitable rooms are set back from the edge of the A24 by at least 35 m.
- 5.4 The model includes a noise barrier, as per the approved parameter plan at the outline stage, which will be provided along the eastern boundary of the site to provide screening from the A24. The barrier location is shown in Figure 4.
- 5.5 The barrier will comprise a close-boarded timber fence with a minimum height of 2 metres, with no perforations, built with a material of minimum surface density 12 kg/m^2 .
- 5.6 Garden fences near the A24 and facing south shall have a minimum height of 2 metres, to protect building façades in that area. These fences are indicated in Figure 4.
- 5.7 Garden fences shall comprise close-boarded timber with a minimum surface density of 12 kg/m^2 .

6.0 ASSESSMENT

Internal Noise Levels

- 6.1 Calculations have been undertaken using the predicted noise levels to determine noise reduction requirements for façade elements of habitable rooms. The calculations are based on the floor plans and elevations provided by Miller Homes.
- 6.2 Non-glazed elements of the façade shall be designed and specified to achieve a minimum sound insulation performance of 52 dB R_w . This required performance is readily achieved by cavity masonry constructions.

- 6.3 For the purposes of establishing minimum acoustic requirements for glazing and ventilators, key areas have been specified in terms of Acoustic Zones A, B and C, as shown in Figure 5.

Glazing

- 6.4 The minimum required sound reduction performances for glazing, and relevant zones are stated in Table 2.

Glazing		Minimum SRI (dB) per Octave Band Centre Frequency (Hz)					
		125	250	500	1k	2k	4k
Zone A	Bedrooms	25	25	33	44	44	49
	Living rooms	24	20	25	35	38	35
Zone B	Bedrooms	24	22	29	40	44	46
	Living rooms	24	20	25	35	38	35
Zone C	All habitable rooms	24	20	25	35	38	35

Table 2 - Minimum Glazing Sound Insulation Performance

- 6.5 In making a comparison with the values in Table 2, it is important that suppliers provide glazing figures that are the result of tests in accordance with ISO 10140, Part 2: 2010 and that the quoted minimum sound reduction specifications are met by the entire glazing system as a whole, including frames, seals, any insulated panels and not just the glass.
- 6.6 In order to assist with the selection process, the following glazing configurations, if installed properly, would be capable of achieving the required sound reduction performance:

Zone A Bedrooms - Minimum 37 dB R_w

6 mm glass: 12 mm cavity (minimum): 8.4 mm Stadip Silence

Zone B Bedrooms - Minimum 34 dB R_w

4 mm glass: 12 mm cavity (minimum): 6.4 mm Stadip Silence

All other habitable rooms - Minimum 31 dB R_w

4 mm glass: 12 mm cavity (minimum): 4 mm glass

Ventilation

- 6.7 For all façades, trickle ventilators or passive ventilation openings shall be selected to meet the minimum required sound reduction performances as stated in Table 3.

Trickle Ventilator		Minimum $D_{n,e}$ (dB) per Octave Band Centre Frequency (Hz)					
		125	250	500	1k	2k	4k
Zone A	Bedrooms	38	36	35	42	39	42
	Living Rooms	40	36	35	33	37	37
Zone B	Bedrooms	40	36	35	33	37	37
	Living Rooms	23	26	29	30	33	33
Zone C	All habitable rooms	23	26	29	30	33	33

Table 3 - Sound Insulation Performance

- 6.8 Note that the stated minimum performance values for each ventilation unit are for the open vent and calculations assume two ventilators per habitable room.
- 6.9 In making a comparison with the ventilation acoustic specifications in Table 3, it is important that the vent manufacturer's test data is the result of laboratory tests undertaken on the specific model, size and free area of the proposed unit. The tests must be undertaken with the vent open and installed in a manner that is representative of the proposed installation.
- 6.10 For guidance purposes, the following ventilator types would be capable of achieving the required sound reduction performances:

Zone A bedrooms - Minimum $D_{n,e,w}$ 39 dB

Acoustically attenuated trickle ventilator or through-wall ventilator

Zone A living rooms and Zone B Bedrooms - Minimum $D_{n,e,w}$ 36 dB

Acoustically attenuated trickle ventilator or through-wall ventilator

All other habitable rooms - Minimum $D_{n,e,w}$ 31 dB

Standard trickle ventilator

- 6.11 The above assessment demonstrates that the internal noise level criteria as outlined in Section 3 will be readily achievable, subject to the appropriate specification and design of the external façade elements.

Noise Levels in External Amenity Areas

- 6.12 All gardens will be enclosed with a close-boarded fence, of minimum height of 1.8 m and a minimum surface density of 10 kg/m².
- 6.13 Garden fences near the A24 and facing south shall have a minimum height of 2 metres, to protect building façades in that area. These gardens are indicated in Figure 4.

- 6.14 Gardens are located to the rear of the proposed dwellings in relation to the A24 minimising noise levels in external amenity spaces closest to the road.
- 6.15 It is anticipated that noise levels in external amenity spaces on the eastern portion of the site will be in the order of 54 dB $L_{Aeq, 16 \text{ hour}}$ or lower, which is acceptable.
- 6.16 Noise levels in all other external amenity spaces across the site will be at 50 dB $L_{Aeq, 16 \text{ hour}}$ or lower, which is acceptable.

7.0 OVERHEATING

- 7.1 Calculations have been undertaken to determine internal noise levels with windows open. The calculations have assumed a loss of 13 dBA from a fully open window to bedrooms, in order to achieve the best practicable ventilation rates.

Bedroom Windows

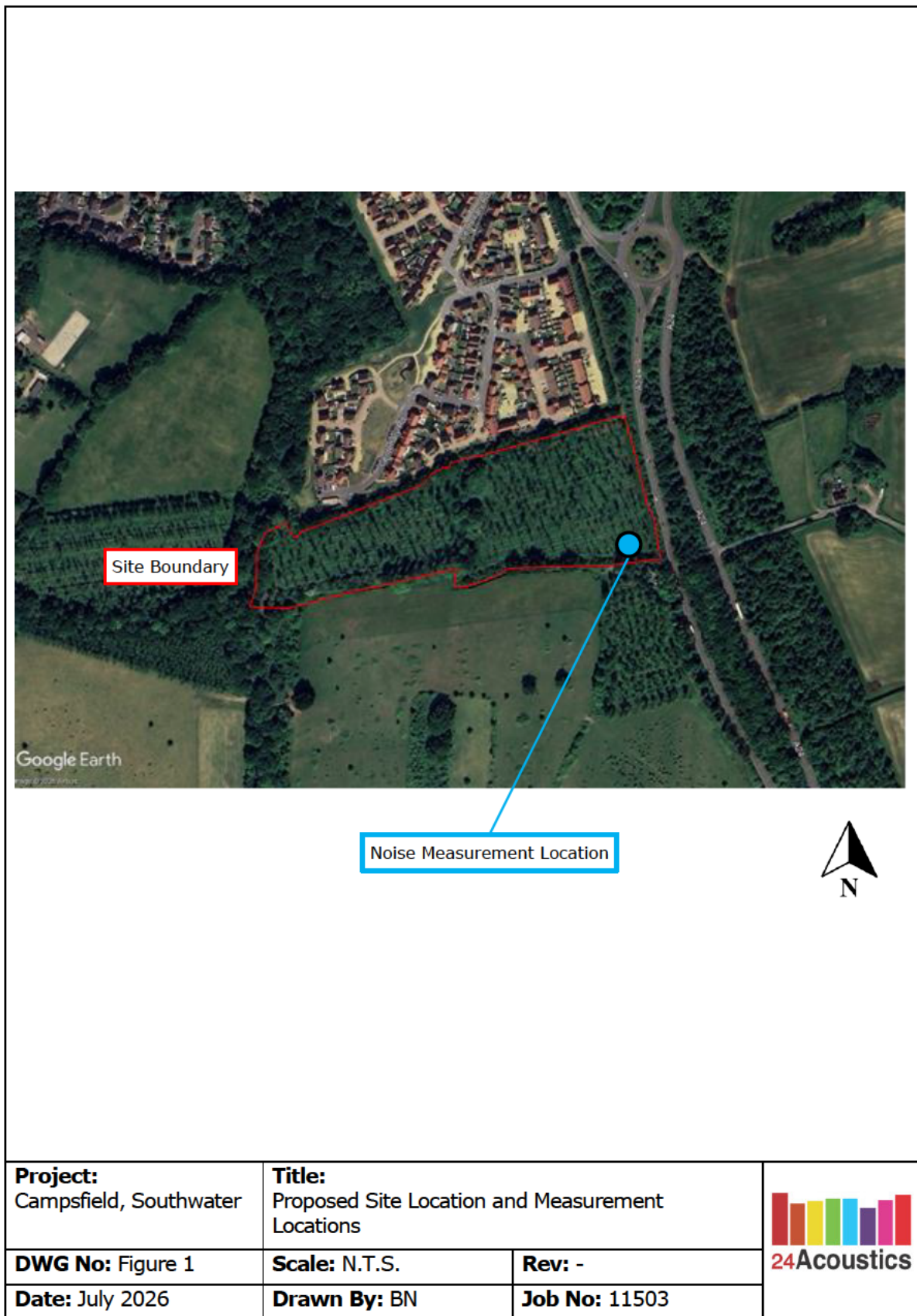
- 7.2 Calculations have identified façades that will be subject to noise levels exceeding the ADO night-time noise limits in bedrooms with windows open, which are indicated in Figure 6.
- 7.3 It will therefore be necessary for the overheating assessment to assume that windows to bedrooms on these façades are closed at night (23:00 to 07:00 hours) to comply with the ADO noise limits. It will be necessary to provide alternate means of controlling solar gain and rejecting excess heat (e.g. low g-value glazing, elevated mechanical ventilation rates, etc) for these bedrooms.

8.0 CONCLUSIONS

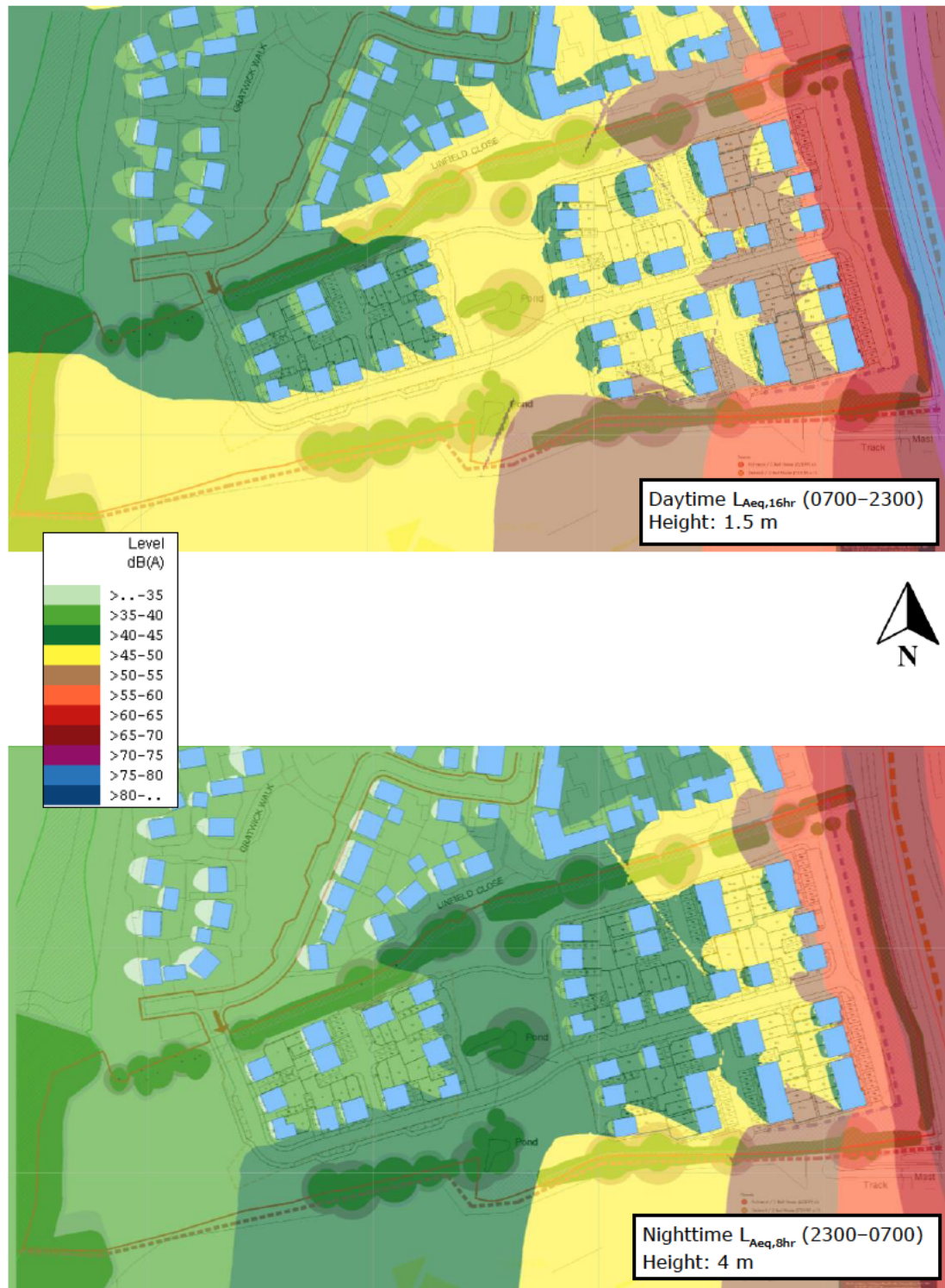
- 8.1 Miller Homes has appointed 24 Acoustics Ltd to undertake a noise assessment in relation to proposed residential development on Land at Campsfield, Southwater.
- 8.2 Noise measurements have been carried out at the site to determine the prevailing levels during daytime and night-time periods.
- 8.3 Provision has been made to provide noise mitigation from the A24 dual carriageway in the form of an acoustic barrier.
- 8.4 Recommendations have been provided for the acoustic performance of glazing and ventilation to habitable rooms. It is concluded that with the recommended measures given, noise within all habitable rooms would comply with maximum internal levels as stated in BS 8233:2014, which is acceptable.
- 8.5 Noise levels in external amenity areas and private gardens have been considered and will be acceptable with provision of the garden fences as specified.
- 8.6 On the above basis, an appropriate acoustic environment will be provided to the proposed residential properties across the site, and all the requirements of Condition 12 as imposed on the outline permission DC/25/0102 have been addressed in full.

REFERENCES

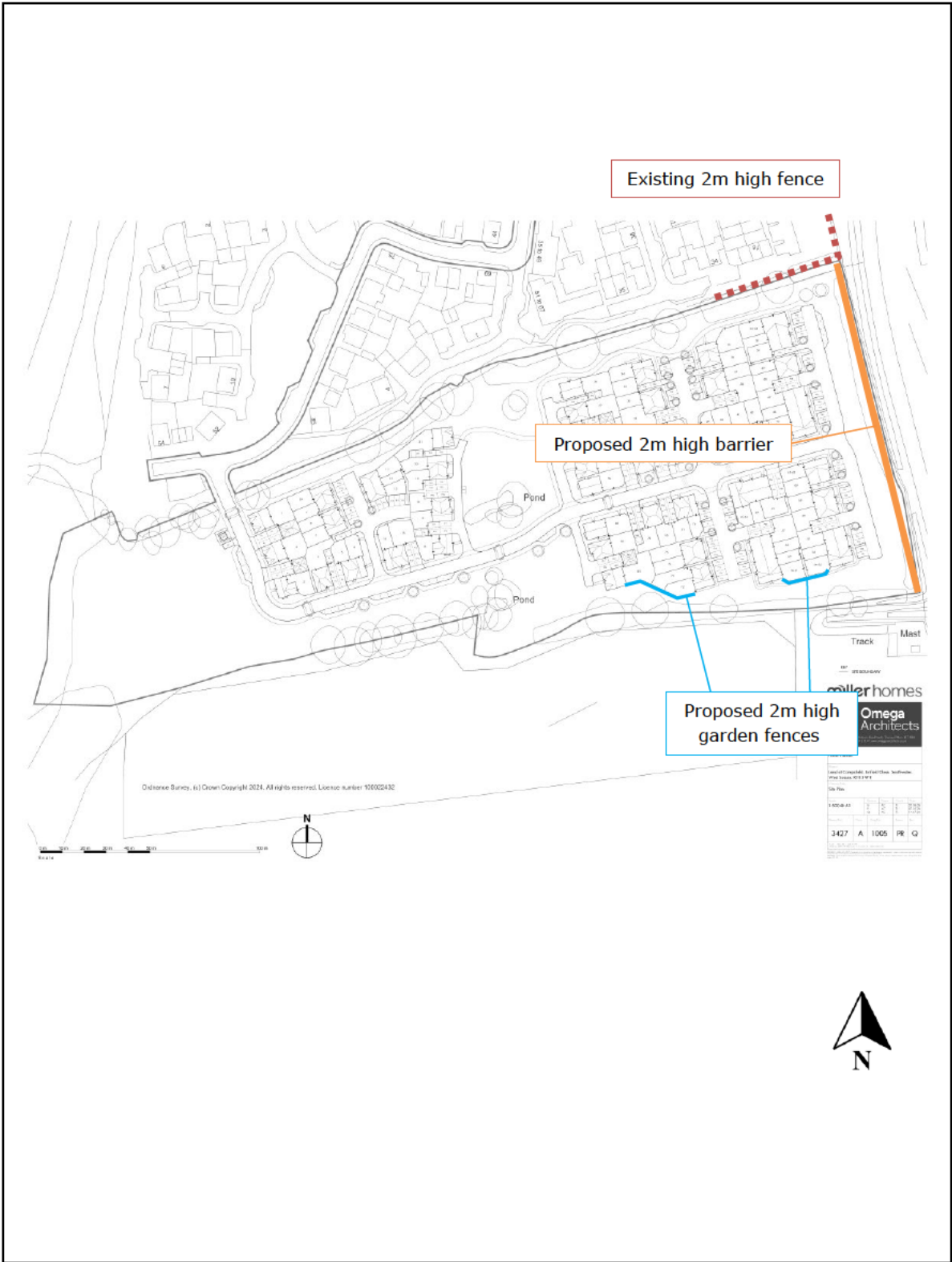
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FIGURES



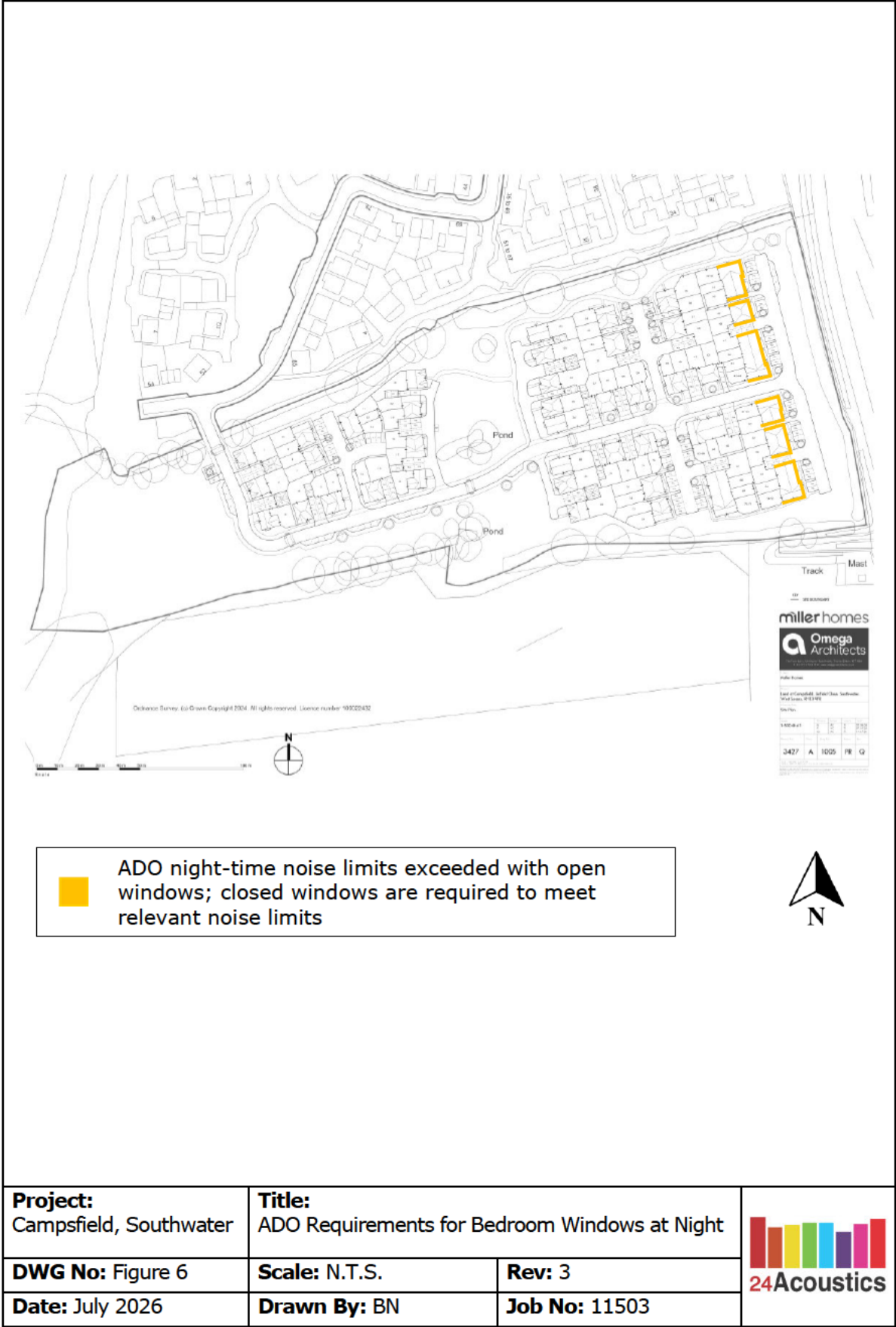


Project: Campsfield, Southwater	Title: Noise Modelling Contours		 24Acoustics
DWG No: Figure 3	Scale: N.T.S.	Rev: 3	
Date: July 2026	Drawn By: BN	Job No: 11503	



Project: Campsfield, Southwater	Title: Proposed Acoustic Barrier Location		
DWG No: Figure 4	Scale: N.T.S.	Rev: 3	
Date: July 2026	Drawn By: BN	Job No: 11503	





APPENDIX A: ACOUSTIC TERMINOLOGY

Noise is defined as unwanted sound. The range of audible sound is from 0 to 140 dB. The frequency response of the ear is usually taken to be around 18 Hz (number of oscillations per second) to 18000 Hz. The ear does not respond equally to different frequencies at the same level. It is more sensitive in the mid-frequency range than the lower and higher frequencies and because of this, the low and high frequency components of a sound are reduced in importance by applying a weighting (filtering) circuit to the noise measuring instrument. The weighting which is most widely used and which correlates best with subjective response to noise is the dBA weighting. This is an internationally accepted standard for noise measurements.

For variable sources, such as traffic, a difference of 3 dBA is just distinguishable. In addition, a doubling of traffic flow will increase the overall noise by 3 dBA. The 'loudness' of a noise is a purely subjective parameter, but it is generally accepted that an increase/ decrease of 10 dBA corresponds to a doubling/ halving in perceived loudness.

External noise levels are rarely steady, but rise and fall according to activities within an area. In attempt to produce a figure that relates this variable noise level to subjective response, a number of noise indices have been developed. These include:

i) The L_{Amax} noise level

This is the maximum noise level recorded over the measurement period.

ii) The L_{Aeq} noise level

This is "equivalent continuous A-weighted sound pressure level, in decibels" and is defined in British Standard BS 7445 as the "value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T, has the same mean square sound pressure as a sound under consideration whose level varies with time".

It is a unit commonly used to describe construction noise and noise from industrial premises and is the most suitable unit for the description of other forms of environmental noise. In more straightforward terms, it is a measure of energy within the varying noise.

iii) The L_{A10} noise level

This is the noise level that is exceeded for 10% of the measurement period and gives an indication of the noisier levels. It is a unit that has been used over many years for the measurement and assessment of road traffic noise.

iv) The L_{A90} noise level

This is the noise level that is exceeded for 90% of the measurement period and gives an indication of the noise level during the quieter periods. It is often referred to as the background noise level and is used in the assessment of disturbance from industrial noise.

APPENDIX B: ENVIRONMENTAL NOISE MEASUREMENTS

