



Acoustic Associates

P E T E R B O R O U G H

**Recommendations on noise mitigation
measures for the Yew Tree Farm residential
development – Phase 2**

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REPORT No.: SS/J3896/18825

DATE: February 2026

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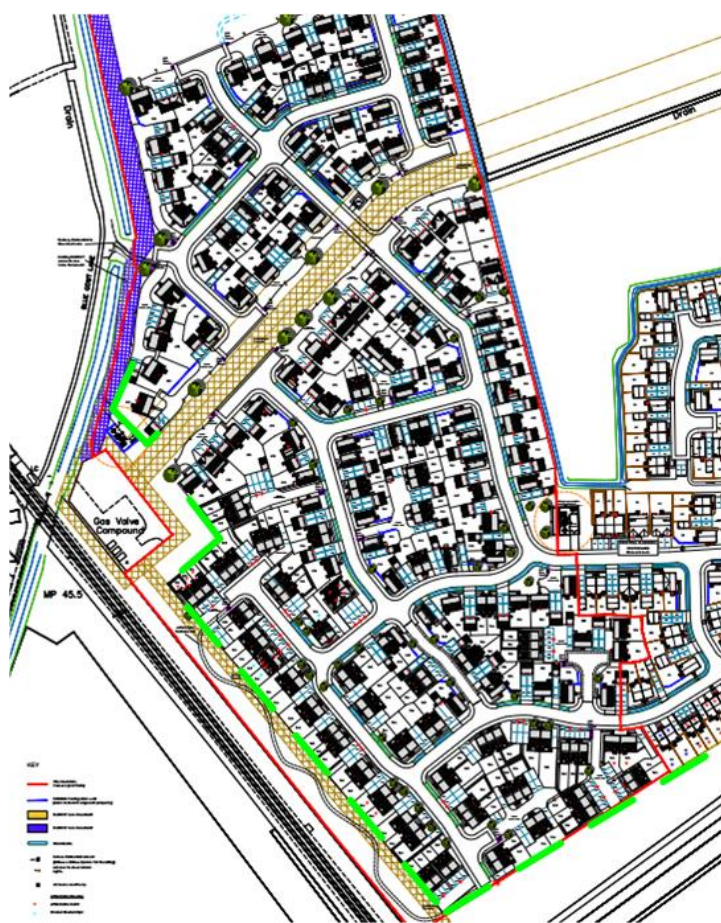
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1 **INTRODUCTION**

- 1.1 Acoustic Associates (Peterborough) carried out a noise assessment for the proposed residential development at Yew Tree farm in Spalding (Reference 9). New layouts for Phase 2 of the project have been produced by the architects (Reference 10) which have consequences for the noise impact on residents on the west of the site. Acoustic Associates (Peterborough) have therefore been instructed to check that the measurement results from the initial survey are still valid and make updated recommendations on noise mitigation measures given that the layout has changed. This report documents this exercise and is an addendum to the initial report.
- 1.2 Drawing 1.1 below shows an excerpt from the architects drawing for the layout of Phase 2. It shows the 3 principal noise sources affecting the site, the railway at the west of the site, the gas pumping station on the east and the Spalding West Relief Road to the south of the site.



Drawing 1.1 – Layout of Phase 2.

It also shows the footprint of an acoustic fence running along the south and west of the site which was recommended by the initial noise assessment (green dashed line).

2 **VALIDATION MEASUREMENTS**

The south-west relief road is complete but not in use yet. The assumptions on its emissions from the initial report are based on predicted traffic flows in the Environmental Statement for the relief road and remain valid to our knowledge.

Measurements were taken to check the levels of the gas pumping station and the railway and these are documented and discussed in Appendix 1. Indicative noise contours are shown in Appendix 2.

3 **ASSESSMENT**

- 3.1 The predictive model created for the initial assessment was modified to take account of the new estimates for pumping station noise but otherwise unchanged. It included the effect of the acoustic fence. The model predicted noise levels at the façades of a sample of the worst affected dwellings (i.e. Plots 145, 148, 161, 172 and 209). The following noise levels have been predicted at these 5 plots

Receiver Location	Receiver Height (m)	Free-field noise level dB(A) at facades			
		Daytime $L_{Aeq,16hours}$	Night-time $L_{Aeq,8hours}$	*Night-time L_{Amax}	Industrial (gas pumping station)
Plot 145	1.5	52.4	49.6	-	-
Plot 145	4.5	56.8	54	*72.0	-
Plot 148	1.5	55.4	53.4	-	-
Plot 148	4.5	57	56	*75.0	-
Plot 161	1.5	50.1	50.8	-	-
Plot 161	4.5	52.1	53.1	67.6	-
Plot 172	1.5	48.1	49.9	-	51.9 ($L_{Aeq,16hours}$)
Plot 172	4.5	54.0	56	71.0	53.4 ($L_{Aeq,8hours}$)
Plot 209	1.5	46.0	47.5	-	-
Plot 209	4.5	50.0	51.3	65.9	-

* Plot 145 and 148 estimated as ¹18 dB more than night-time level.

Table 1 – Predicted noise levels

- 3.2 Based on those noise levels, the internal noise levels were calculated for these “worst-case” bedrooms and living rooms using a method recommended in British Standard BS 8233:2014. The calculations were based on assumed room and glazed areas from the architects layout drawings (74b-SL-201 and 202). The recommendations made on glazing and ventilation in the following section are based on the results of those calculations.

¹ Nick Conlan – Proceeding of the IOA 2021
Report No. SS/J3896/18825

4 **RECOMMENDATIONS**

4.1 The following table details the recommendations for glazing and ventilation for the facades marked in Drawing 4.1.

Façade (see Drawing 4.1)	Minimum glazing spec R_w (C_{tr}) dB	Ventilation recommended for Document F	Specification for wall vents	Open windows for ventilation/overheating
Blue and green first floor	38 (-5) e.g. 6/16/6.8 mm	System 3 (System 1 may be feasible – see Note 1)	Acoustic trickle vents $D_{n,ew}$ 40 (-2) dB or greater – Maximum equivalent area 4000 mm ² for bedrooms and 8000 mm ² for lounges.	No (Note 2)
Green ground floor	31 (-6) e.g. 4/16/4 mm	System 1	Trickle vents achieving a $D_{n,ew}$ 34(-1) dB	No
Blue ground floor	31 (-6) e.g. 4/16/4 mm	System 1	Trickle vents achieving a $D_{n,ew}$ 34(-1) dB	Yes (Note 3)

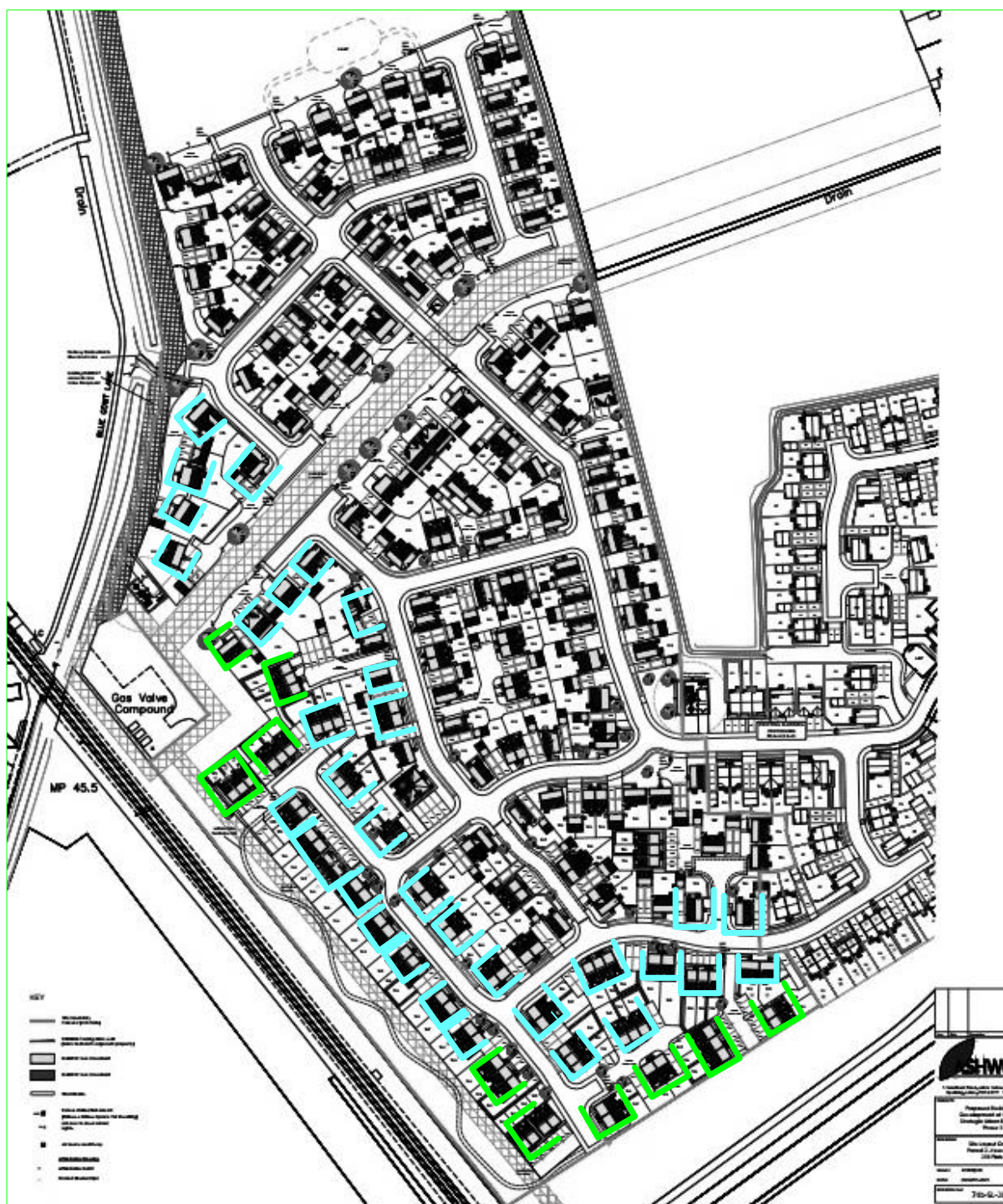
Note 1 – System 1 is feasible with Acoustic trickle vents if the equivalent area maximum is not exceeded for the trickle vents recommended. However, the design team should note AVOG states “*relying on the use of open trickle vents without opening windows may give rise to poor indoor air quality in airtight dwellings outside the winter period.*”

Note 2 – The design team should not rely on open windows to control overheating because noise levels will be excessive under those conditions.

Note 3 – Daytime noise levels may exceed the BS 8233 criterion of L_{Aeq} 35 dB(A) but the exceedance will be less than 5 dB.

Table 2 – Ventilation and glazing recommendations

4.2 Any ventilation system installed must comply with the requirements of Document F for noise.



The facades referenced in Table 2 are shown as light blue and green lines.

Drawing 4.1 – Mitigation drawing

Appendix 1 – Validation noise measurements

A1.1 Noise monitoring

A1.1.1 Overnight monitoring

The site was visited on Wednesday 28th January 2026. A noise monitoring location was selected where noise from the gas pumping station dominated average noise levels but close enough to the railway for passing trains to dominate when they passed. Noise was monitored continuously and logged at 1 and 15 minute intervals using an integrating sound level² meter between 15:00 hours on 28th January and 10:00 hours on 29th January 2026. The weather during monitoring was dry, cold (< 5°C), overcast with easterly light air (< 5m/s). Its location is shown in drawing A1.1 as Location D.

A1.1.2 Attended monitoring.

In addition some attended monitoring was carried out using another integrating sound level³ meter to confirm the emissions from the gas pumping station. The monitoring locations are shown below as Locations A, B, C and E.



Drawing A1.1 Monitoring locations

A1.1.3 Monitoring – general

All monitoring was under free-field conditions and calibration was checked before and after use.

² SVAN 971 , serial 28229, calibrated Aug 2025 , cert 1185730, calibrator Cirrus CRL511E calibrated 11/02/2025 cert 1175947

³ SVAN 957, serial 27517 calibrated 22/02/2024 cert 1158093

A1.2 Monitoring results

The table below documents the results of the attended monitoring.

Location	Comments	Equivalent continuous noise level $L_{Aeq,T}$ dB(A)	Maximum noise level $L_{Amax,T}$ dB(A)	Background noise level $L_{A90,T}$ dB(A)
28th January 2026				
Loc A	By gate - Dominant noise from gas plant - traffic significant	55.3	57.9	54.2
Loc B	Dominant noise gas plant. Opposite source	68.1	72.2	61.9
Loc C	Dominant noise gas plant. Traffic distant	66.9	68.5	66.1
29th January 2026				
Loc B	Opposite dominant source	68.9	72.9	62.5
Loc B	Repeat	66.8	68.4	67.6
Loc F	Location shown was 100 m south-east of plant. Gas plant was inaudible - traffic significant – This measurement represents the residual noise	48.5	52.8	46.4
Loc D	7 m further out from Loc B	60.2	62.5	59.1
Loc A	By gate - Gas plant and traffic significant	53.5	55.8	52.2

All measurements between 1 and 5 minutes duration

Table A1.1 – Results of attended monitoring

The table below summarises the results of the unattended noise monitoring.

Start Period	End of Period	Highest maximum noise level L_{Amax} dB(A)	Average background noise level L_{A90} dB(A)	Equivalent continuous noise level L_{Aeq} dB(A)
Wednesday 28 th January 2026 - 15:00 hours	Wednesday 28 th January 2026 – 23:00 hours	-	56.1	58.9
Wednesday 28 th January 2026 – 23:00 hours	Thursday 29 th January 2026 – 07:00 hours	66.6	51.0	53.6
Thursday 29 th January 2026 – 07:00 hours	Thursday 29 th January 2026 – 07:00 hours	-	58.0	59.9

Table A1.2 – Results of unattended monitoring at Location D

Given that the meter logged maximum noise levels at 1-minute intervals, it was possible via analysis of the ambient monitoring to filter out the noise from passing trains. The results of this exercise are shown below.

Period	Ambient level due to other sources L_{Aeq} dB(A)	Level due to trains passing L_{Aeq} dB(A)
Daytime	58.8	51.5
Night-time	53.6	-

Table A1.3 – Analysis of unattended monitoring at Location D

A1.3 Comparison with initial survey

A1.3.1 Road traffic

At the time of writing the new road is built but not open so the source data from the initial assessment, which was based on predictive modelling using traffic data from the environmental statement, was re-used.

A1.3.2 Rail traffic

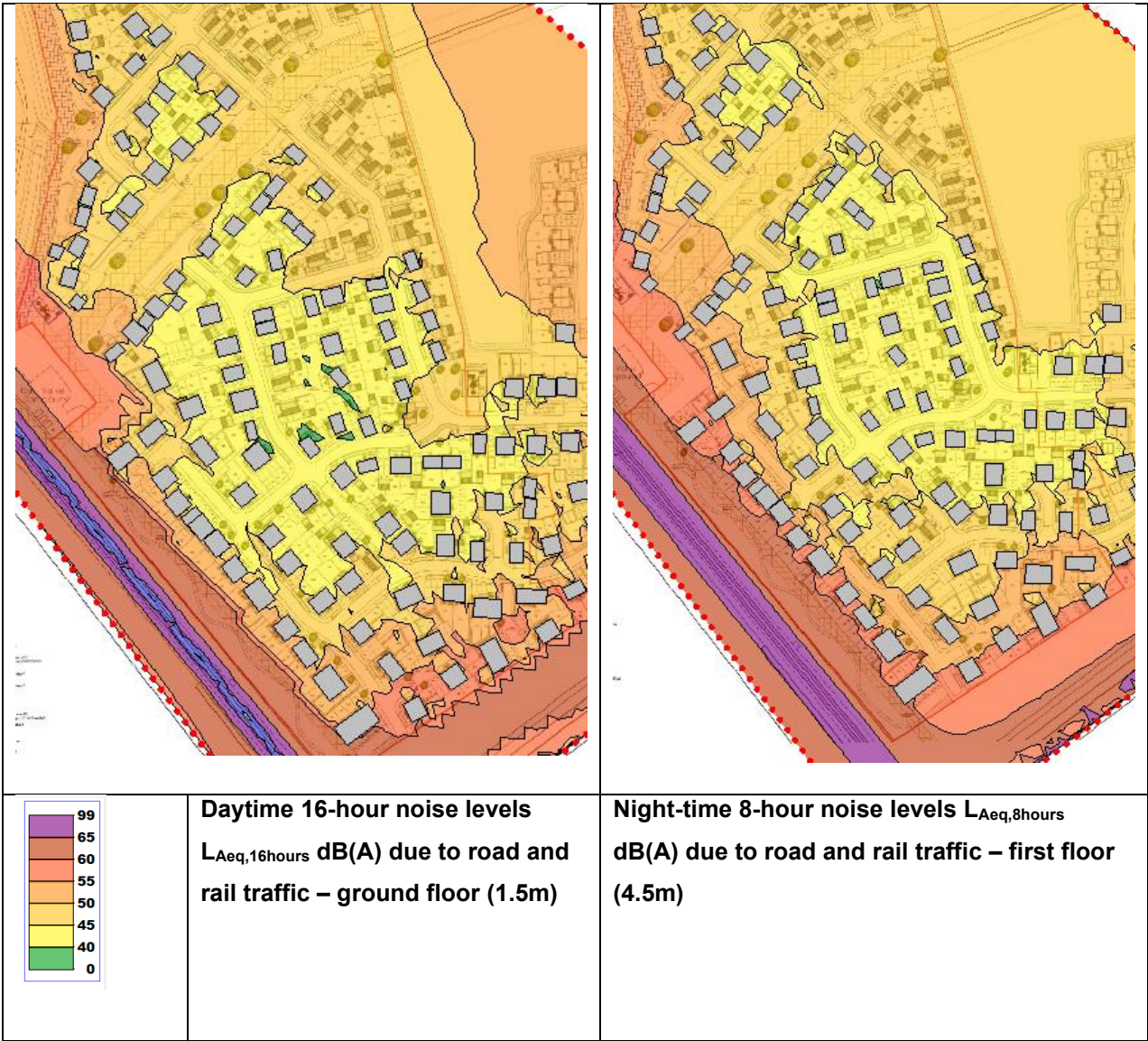
Unlike the initial survey, there were no rail movements at night during this short midweek monitoring period. However, the impulsive levels recorded in the daytime on this survey correlated reasonably with results from the initial survey. So, the source data from the predictive model for the initial survey was re-used in this assessment.

A1.3.2 Industrial noise

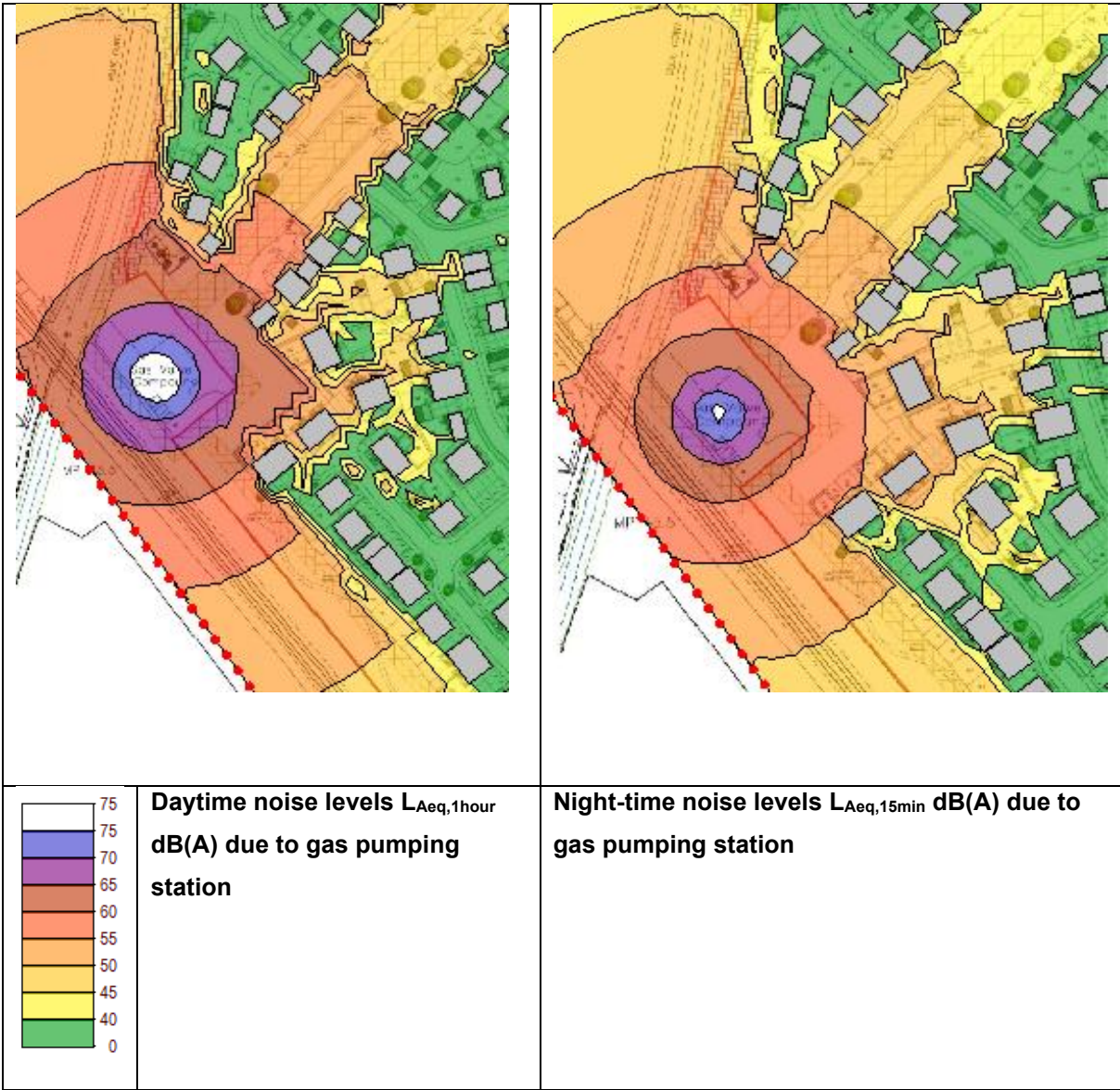
The previous survey assessed that noise from the gas pumping station would cause a “significant adverse impact” at the nearest dwelling. The measurements estimated by this assessment were significantly higher than those recorded in the previous assessment so this assessment remains valid. The predictive model for this assessment was configured with this updated source data and the recommendations on mitigation .

Appendix 2 – Noise contours

A2.1 Traffic – average levels daytime and night-time



A2.2 Industrial noise emissions (from gas pumping station)



Appendix 3 – References

1. *ProPG working group. ProPG: Planning & Noise: Professional Practice Guidance on Planning & Noise: New Residential Development*, 2017.
2. *Document F Ventilation Regulations; thenbs*, 2010.
3. *National Planning Policy Framework; DCLG*, 2018.
4. *Noise Policy Statement for England; DEFRA*, 2010.
5. *British Standard BS 4142:2014, Methods of rating and assessing industrial and commercial sound; BSI*, 2014.
6. *ANC + IOA. Acoustics Ventilation and Overheating Guide V1.1*, 2020.
7. *DGMR Software. iNoise V2026 Pro*.
8. *ISO 9613-2 Acoustics of sound during propagation outdoors, Part 2: General method of calculation; ISO*, 1996.
9. *Environmental noise assessment associated with the proposed residential development at Yew Farm, Spalding, Acoustic Associates (Peterborough) . SS/J3575/17947 – April 2021*
10. Architects layout drawings 74b-SL-202 and 74b-SL-203, date August 2025

Note – There are now updated versions of Document F and NPPF since the 2021 report and a new regulation, Document O for overheating at night-time. However they do not impact the recommendations in this assessment.