

NOISE ASSESSMENT

PROPOSED RESIDENTIAL PARK HOME DEVELOPMENT CARDEN GARDENS, DANESBURY PARK ROAD, WELWYN

ROYALE QUARTERS (SV) LIMITED

MARCH 2026

LF Acoustics Ltd
Pond Farm
7 High Street
Pulloxhill, Beds
MK45 5HA

t: 01525 888046
e: mail@lfacoustics.co.uk

Registered in England
Company Reg: 8434608



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Status	Prepared By	Date
2.0	L Jephson BEng (Hons) MIOA	16/3/26
1.0	L Jephson BEng (Hons) MIOA	24/7/25

This report has been prepared using all reasonable skill and care within the resources and brief agreed with the client. LF Acoustics Ltd accept no responsibility for matters outside the terms of the brief or for use of this report, wholly or in part, by third parties.

CONTENTS

1.	Introduction	1
2.	Applicable Planning Policies Standards and Guidance	2
3.	Site Description and Development Proposals	7
4.	Noise Monitoring	8
5.	Calculation and Assessment of Noise Levels	11
6.	Summary	15
	References	
	Figures	
	Appendices	

1. Introduction

- 1.1. LF Acoustics Ltd have been appointed by Royale Quarters (SV) Limited to prepare a noise assessment to support a planning application for a proposed park home development at Carden Gardens, Danesbury Park Road, Welwyn.
- 1.2. It is proposed to provide 27 residential park home plots within the development.
- 1.3. The site is adjacent to the A1(M), with noise levels across the site influenced by traffic travelling along the road.
- 1.4. This report presents an assessment of the noise levels within the proposed development.
- 1.5. This report has been prepared by L Jephson BEng(Hons), MIOA, Director of LF Acoustics Ltd. Details of his experience are provided in Appendix A.

2. Applicable Planning Policies Standards and Guidance

2.1. A description of the noise units referred to in this report is provided in Appendix A.

2.2. National Planning Policy Framework

2.2.1. The National Planning Policy Framework (NPPF), revised in December 2024 [1], sets out the Government's planning policies for England and how these should be applied. It provides a framework upon which locally prepared plans for housing and other development can be produced.

2.2.2. The purpose of the planning system is to contribute to the achievement of sustainable development and at the heart of the Framework is a presumption in favour of sustainable development.

2.2.3. Planning policies and decisions should ensure that developments:

- f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience (Para 135).

2.2.4. Planning policies and decisions should contribute to and enhance the natural and local environment by:

- e) 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. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans (Para 187).

2.2.5. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment. In doing so they should: 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 (Para 198).

2.3. British Standard BS 8233

2.3.1. BS 8233 [2] recommends design aims for noise levels to be achieved in new buildings and is the most appropriate guidance in defining applicable noise levels within the proposed development. The Standard was updated in 2014 to better reflect the requirements of the NPPF in terms of impact classifications and achieving the recommended guidance values, seeks to ensure that the occupants would not be subject to any significant adverse impacts, to ensure compliance with the requirements of the NPPF.

2.3.2. For residential properties, the guidance recommends the following design aims for the daytime (07:00 – 23:00) and night-time (23:00 – 07:00) periods (Table 4 in BS 8233):

- 35 dB $L_{Aeq,T}$ within living rooms and bedrooms during the daytime period;
- 40 dB $L_{Aeq,T}$ within dining areas / rooms during the daytime period;
- 30 dB $L_{Aeq,T}$ within bedrooms at night.

2.3.3. With regards internal noise levels, the Standard advises:

“Where development is considered necessary or desirable, external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved.”

2.3.4. Where the above limits require windows to be closed to maintain the standard of noise, there needs to be appropriate alternative ventilation provided that does not compromise the façade insulation or resulting noise level (Note 5 to Table 4 of BS 8233). BS 8233 does not require the above design aims to be achieved with windows open.

2.4. ProPG: Planning and Noise

2.4.1. Professional planning guidance on planning and noise was published in May 2017 [3]. The guidance seeks to provide a recommended approach to the management of noise within the planning system in England. The guidance has been prepared jointly between the Association of Noise Consultants, The Institute of Acoustics and the Chartered Institute of Environmental Health with the aim of providing a coherent approach to achieving the requirements of the NPPF.

2.4.2. The guidance advocates a systematic, proportionate, risk based, 2-stage approach, encouraging early consideration of noise within the design process for new residential developments:

- Stage 1 provides an initial noise risk assessment of the development site;
- Stage 2 provides systematic consideration of four key elements: demonstrating a good acoustic design process; observing internal noise level guidelines; undertaking an external amenity area noise assessment; and consideration of other relevant issues.

2.4.3. The initial risk assessment should identify the risk of adverse effects from noise and identifying whether the site poses a negligible, low, medium or high risk. The level of risk does not determine whether a site may be unsuitable for development, but highlights an increasing requirement for noise to be considered within the design of the development and the likelihood of a need for specific noise mitigation measures, as follows:

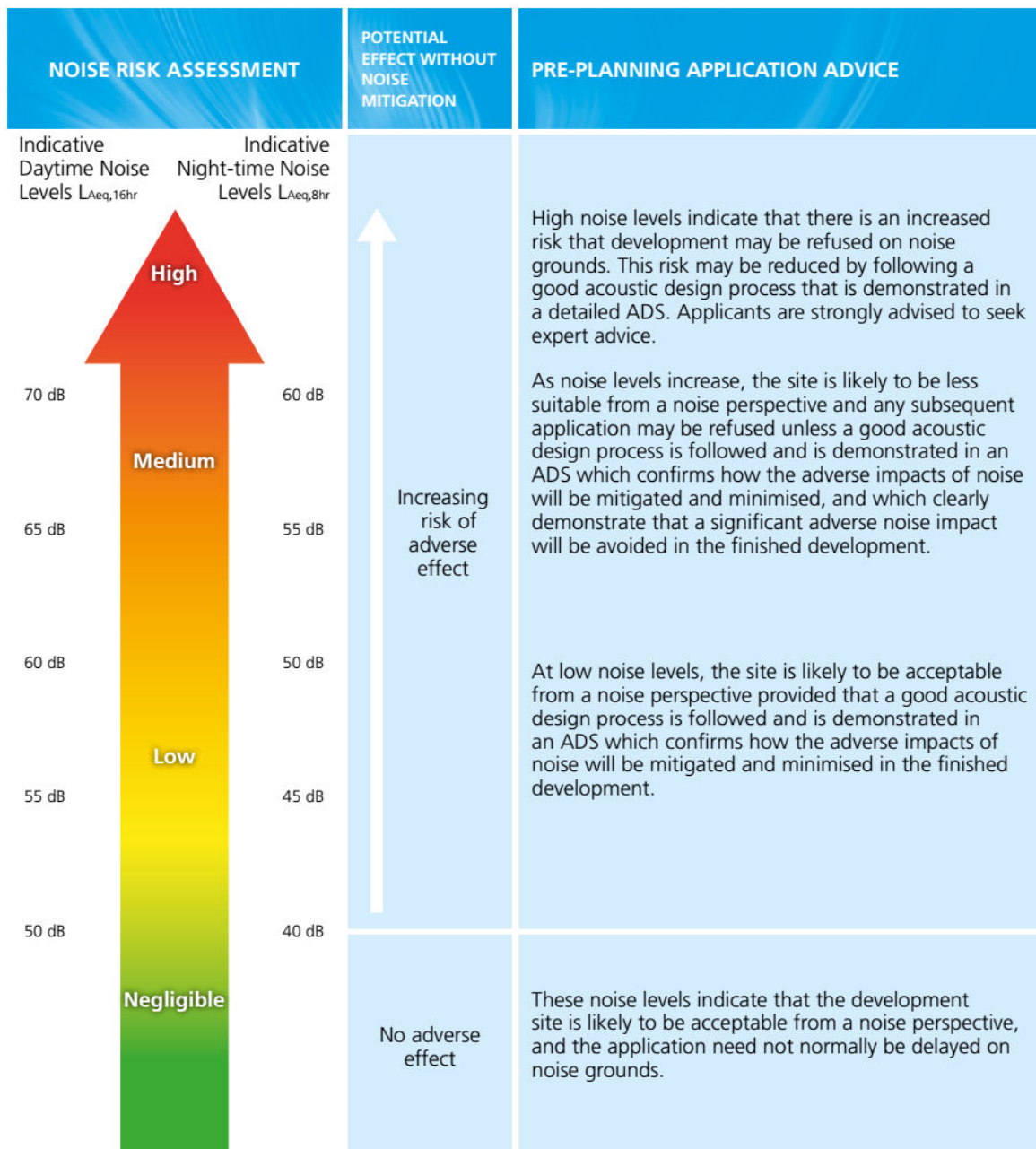


Figure 1 Notes:

- Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures.
- Indicative noise levels are the combined free-field noise level from all sources of transport noise and may also include industrial/commercial noise where this is present but is "not dominant".
- $L_{Aeq,16hr}$ is for daytime 0700 – 2300, $L_{Aeq,8hr}$ is for night-time 2300 – 0700.
- An indication that there may be more than 10 noise events at night (2300 – 0700) with $L_{Amax,F} > 60$ dB means the site should not be regarded as negligible risk.

- 2.4.4. The categories / noise levels indicated in the figure above do not provide specific limits above which adverse effects would occur and are intended as a guide to the requirement for additional noise mitigation and design measures.
- 2.4.5. For a Stage 2 assessment, upon which basis this report has been prepared, the guidance refers to BS 8233 with respect of achieving an acceptable and noise environment within residential properties.

2.4.6. Internally, the guidance recommends that the targets within BS 8233 are adopted as an aim, which are reproduced in Figure 2 of ProPG.

2.4.7. Expanding upon the guidance within BS 8233, for internal noise environments It is stated (note 7 to Figure 2):

“Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal L_{Aeq} target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved. The more often internal L_{Aeq} levels start to exceed the internal L_{Aeq} target levels by more than 5 dB, the more that most people are likely to regard them as “unreasonable”. Where such exceedances are predicted, applicants should be required to show how the relevant number of rooms affected has been kept to a minimum. Once internal L_{Aeq} levels exceed the target levels by more than 10 dB, they are highly likely to be regarded as “unacceptable” by most people, particularly if such levels occur more than occasionally. Every effort should be made to avoid relevant rooms experiencing “unacceptable” noise levels at all and where such levels are likely to occur frequently, the development should be prevented in its proposed form.”

2.4.8. It is implied from the above guidance that a significant effect would be likely within the home, should noise levels internally exceed the guideline values specified within BS 8233 by more than 10 dB(A).

2.4.9. In relation to open windows, Note 5 to Figure 2 within ProPG advises:

Designing the site layout and the dwellings so that the internal target levels can be achieved with open windows in as many properties as possible demonstrates good acoustic design. Where it is not possible to meet internal target levels with windows open, internal noise levels can be assessed with windows closed, however any façade openings used to provide whole dwelling ventilation (e.g. trickle ventilators) should be assessed in the “open” position and, in this scenario, the internal L_{Aeq} target levels should not normally be exceeded, subject to the further advice in Note 7.

2.4.10. It is clear from the above, that ProPG does not expect the internal noise levels to be achieved within dwellings with windows open, but seeks to ensure a good acoustic design is adopted to ensure noise levels within the development are minimised.

2.5. British Standard BS 3632

2.5.1. BS 3632 [4,5] provides a specification for residential park homes, which are suitable for occupation throughout the year. The Standard was updated in 2023 with the aim of ensuring that the homes are constructed with a reduced carbon footprint, although at the present time, the majority of the homes available are still likely to comply with the previous revisions of the Standard.

2.5.2. This standard ensures that the park homes are designed to achieve a minimum sound insulation for the external walls and the roof. The previous versions of the Standard specified a sound reduction of 35 dB RW over a frequency range of 125Hz to 4000 Hz, with the current revision specifying a performance of 33 dB RW over a frequency range of 100Hz to 3150 Hz. Whilst the performances differ slightly between the revisions, the difference is likely to relate to the frequency range under which the panels are tested, with the new standard addressing lower frequencies.

- 2.5.3. Whilst the Standard does not provide a specific acoustic specification for the glazing, there is a requirement within the Standard to ensure an adequate thermal performance is achieved. This requires the provision of thermal double glazing, equivalent to that used within a typical residential dwelling.
- 2.5.4. With regards to the requirement for ventilation, the Standard requires ventilation to be provided to provide a supply of fresh air for the occupants and a means of purge ventilating products of combustion, moisture and noxious odours. These measures, which are usually provided by means of ventilators within the floor and roof space, would ensure appropriate ventilation is provided within the homes.

3. Site Description and Development Proposals

- 3.1. The Application Site is located on land to the west of the A1(M) and east of Danesbury Park Road. The site location is indicated on Figure 1.
- 3.2. The A1(M) is within a cutting as it passes the site, with the carriageway level approximately 5 metres below the site level. With the exception of the area of site directly adjacent to the road, traffic travelling along the road is screened by the edge of the cutting.
- 3.3. It is understood that the site was previously used for a quarry when constructing the A1(M), and there is presently a large void within the southern area of the site, which will be filled to bring this area of the site up to the same level as the surrounding land.
- 3.4. There is a gypsy and traveller site directly to the north. This site has two mobile homes, one of which has been positioned alongside the A1(M). A noise assessment prepared to accompany the planning application for that site (Application Ref. 17/02755/1) demonstrated acceptable living conditions could be provided in the homes.
- 3.5. Directly to the south is the Heath Lodge Caravan Park. This is a long-standing park home site, with homes constructed alongside the A1(M).
- 3.6. It is proposed to construct a residential park home development on the Application Site. The development would comprise 27 residential park home pitches. The proposed layout is indicated on Figure 2. The homes to be provided within the development would be of residential specification, allowing occupation throughout the year.

4. Noise Monitoring

4.1. Unattended Noise Surveys

- 4.1.1. In order to establish the current noise climate within the site, a noise survey was carried out between Monday 14 and Friday 18 July 2025.
- 4.1.2. The measurements comprised unattended noise surveys, carried out at two positions within the site, one located at a position along the proposed eastern development boundary close to the A1(M) and a second towards the western side of the development, representative of the location of the park homes furthest from the motorway. The noise monitoring positions are indicated on Figure 2.
- 4.1.3. Two Rion NL-52 Class 1 Sound Level Meters were used for the exercise, which were calibrated with a Rion NC-74 Class 1 Acoustic Calibrator before and after the exercise, with the instruments reading 94.0 dB on each occasion. The instruments had been calibrated according to National Standards within the previous 12 / 24 months. Details of the instrumentation used and calibration dates are provided below.

Instrument	Serial No.	Calibration Date	Laboratory / Certificate No.
Rion NL-52 Class 1 SLM (U1 - Eastern)	00976157	25/9/23	AcSoft – 1506621-4
Rion NL-52 Class 1 SLM (U2 – Western)	00464685	25/9/23	AcSoft – 1506621-2
Rion NC-74 Class 1 Acoustic Calibrator	35125830	5/9/24	AcSoft – 1509697-1

Table 4.1 Instrumentation Details for Unattended Noise Surveys

- 4.1.4. At each position, the microphone was set at a height of 1.5 metres above the ground and in free-field conditions.
- 4.1.5. The instruments were configured to record over contiguous 5-minute periods throughout the survey period. The measured data has been summarised into hourly periods for reporting purposes using the Rion AS-60 Data Management Software and to enable the period day and night-time levels to be determined.
- 4.1.6. Weather conditions for the survey were generally good, predominantly dry, with either calm conditions or a light south-westerly wind.
- 4.1.7. The results of the unattended surveys are presented in Appendices C and D. The period noise levels evaluated from the unattended survey results are presented in Tables 4.2 and 4.3 below.

Period	Period $L_{Aeq,T}$ Noise Levels [dB]	
	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Monday 14/7/25	64.6*	60.6
Tuesday 15/7/25	64.7	60.9
Wednesday 16/7/25	64.4	61.0
Thursday 17/7/25	64.7	60.5
Average	64.6	60.8

Note: * Period comprised 12:00 – 23:00 hours Monday and 07:00 – 11:00 Friday

Table 4.2 Period Noise Levels Evaluated from Unattended Noise Survey at Position U1 – Eastern

Period	Period $L_{Aeq,T}$ Noise Levels [dB]	
	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Monday 14/7/25	58.4	54.8
Tuesday 15/7/25	59.6	54.7
Wednesday 16/7/25	57.6	54.6
Thursday 17/7/25	58.6	54.4
Average	58.5	54.6

Note: * Period comprised 12:00 – 23:00 hours Monday and 07:00 – 11:00 Friday

Table 4.3 Period Noise Levels Evaluated from Unattended Noise Survey at Position U2 – Western

- 4.1.8. Maximum noise levels during the night-time period, measured at the eastern position closest to the motorway were observed to be typically of the order of 65 - 70 dB $L_{Amax,F}$.

4.2. Attended Noise Monitoring

- 4.2.1. To supplement the unattended noise surveys and to provide an indication of the variation in noise levels across the development site, attended noise measurements were made at four positions, concurrent with the unattended surveys during Monday 14 July 2025.
- 4.2.2. The measurements were made using four Rion NL-52 Class 1 Sound Level Meters, which were positioned on tripods, with the microphones set at a height of 1.5 metres above the ground. The details of the instrumentation used are indicated below.

Instrument	Serial No.	Calibration Date	Laboratory / Certificate No.
Rion NL-52 Class 1 SLM (Position S1)	00231655	10/4/25	AcSoft – 1511971-1
Rion NL-52 Class 1 SLM (Position S2)	00231657	10/4/25	AcSoft – 1511971-2
Rion NL-52 Class 1 SLM (Position S3)	00610177	16/9/24	AcSoft – 1509855-1
Rion NL-52 Class 1 SLM (Position S4)	00965155	25/9/23	AcSoft – 1506621-3
Rion NC-74 Class 1 Acoustic Calibrator	35125830	5/9/24	AcSoft – 1509697-1

Table 4.3 Instrumentation Details for Attended Noise Surveys

- 4.2.3. The attended noise monitoring positions are indicated on Figure 2.
- 4.2.4. The results of the attended noise monitoring are provided in Appendix E. The results have been compared to the unattended survey results obtained at Position U1 to evaluate the variation in noise levels across the site.
- 4.2.5. The period noise levels evaluated from the monitoring are summarised below.

Position	Period $L_{Aeq,T}$ Noise Levels [dB]	
	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
S1 (Adjacent to A1(M) North)	67	63
S2 (Adjacent to A1(M) Mid)	64	61
S3 (Central)	59	56
S4 (Rear - Danesbury Park Road)	59	55

Table 4.4 Period Noise Levels at Attended Noise Monitoring Positions

5. Calculation and Assessment of Noise Levels

5.1. Calculation of Noise Levels

- 5.1.1. Road traffic noise levels within the Proposed Development have been calculated using the SoundPlan computer modelling package, utilising the results of the period noise levels evaluated from the noise monitoring exercise.
- 5.1.2. The software utilises the calculation methodology contained within A Calculation of Road Traffic Noise [6], with the conversion from the calculated $L_{A10,18 \text{ hour}}$ noise levels to period day and night-time $L_{Aeq,T}$ noise levels derived using the Defra / TRL methodology [7].
- 5.1.3. Ground levels for the modelling have been obtained from LiDAR mapping of the surrounding area to include the application site and the A1(M) as it passes the site and for a distance of 1km to the north and south.

5.2. Preliminary Modelling, Assessment and Mitigation Proposals

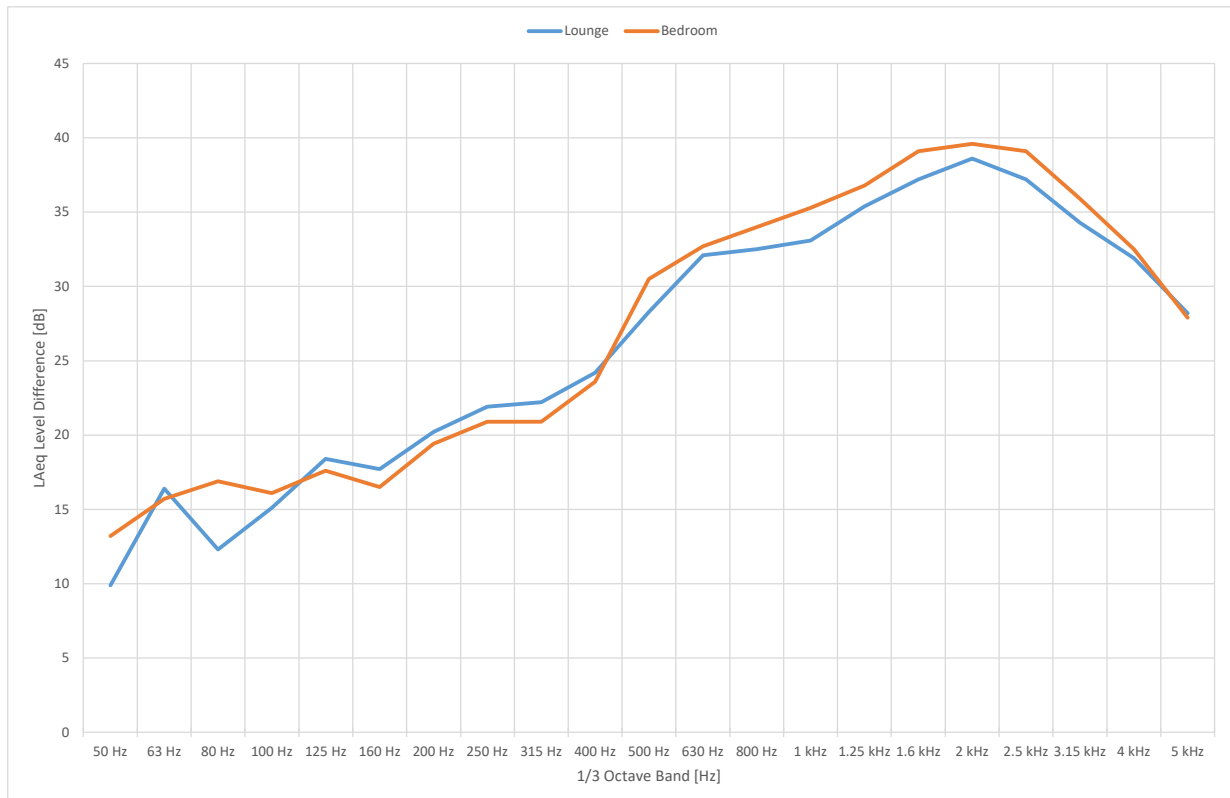
- 5.2.1. An initial noise model was prepared upon the basis of the existing open site, which has been used to calibrate the model against the results of the noise survey data and to enable an initial assessment of the noise environment within the Application Site to be made.
- 5.2.2. Figures 3 and 4 present the results of the existing day and night-time modelled noise levels across the site.
- 5.2.3. An initial assessment of the existing noise levels has been made using the ProPG guidelines, to assess the suitability of the site for residential development and the potential constraints.
- 5.2.4. The assessment indicates that, presently, the western area of the site furthest from the A1(A) is at a low to medium risk in terms of noise. This assessment indicates that noise levels would be acceptable within this area of the site, with an appropriate design for the homes used (i.e. residential specification park homes).
- 5.2.5. Noise levels are higher within the eastern area of the site, closer to the A1(A), due to the lesser distance to the road and the reduced screening effect from the top of the cutting. Noise levels within this area of the site would represent a medium risk in terms of noise.
- 5.2.6. To ensure satisfactory noise levels within this area of the site, appropriate noise mitigation measures will be required to reduce road traffic noise levels to an acceptable standard and thus reduce the risk.
- 5.2.7. Consideration has therefore been given to providing appropriate noise mitigation.
- 5.2.8. To reduce noise levels to a satisfactory standard, it is proposed to construct an acoustic fence along the eastern site boundary, with a short return along the northern and southern boundaries of the site.
- 5.2.9. The fence would be of timber construction, close-boarded and with a minimum surface density of 10 kg/m^2 . The construction would ensure the sound transmission through the fence panels was insignificant compared to the sound diffracted over the top. The fence would be constructed to a height of 2.1 metres above the ground level of the adjacent park home plot, thus ensuring the windows to the properties were screened from the road traffic. The location of the proposed mitigation is indicated on Figure 2.

5.3. Assessment of Noise Levels With Proposed Mitigation

- 5.3.1. A second noise model has been prepared upon the basis of the application layout and taking account of the proposed boundary noise mitigation.
- 5.3.2. The results of the noise modelling are presented on Figure 5 for the daytime period and Figure 6 for the night-time period.
- 5.3.3. An assessment of the noise levels within the mitigation provided against the ProPG guidelines would indicate a low risk during the daytime period and a low to medium risk overnight. Whilst daytime noise levels would be acceptable, appropriate park homes would need to be sited to ensure acceptable noise conditions were maintained internally, particularly overnight.

5.4. Assessment of Noise Levels within Park Homes

- 5.4.1. The park homes to be used would be of residential specification and compliant with the requirements of BS 3632. The residential specification homes are designed to be occupied throughout the year and have considerably more insulation than used within touring or holiday homes.
- 5.4.2. In addition to the thermal requirements, BS 3632 ensures that the homes are designed to achieve a minimum sound insulation for the external walls and roof of 35 dB R_w . Whilst the same is not specified for the glazing, there is a requirement to ensure an adequate thermal performance, which requires the provision of thermal double glazing, typical of most residential dwellings (standard thermal double glazing achieving appropriate thermal requirements typically provides a sound reduction of 34 dB R_w).
- 5.4.3. Calculations of the noise levels within the proposed homes have been made upon the basis of the highest calculated façade noise levels and utilising road traffic octave band spectra obtained during the measurement exercise.
- 5.4.4. The noise level difference between outside and in for a park home has been obtained from measurements taken within one of the mobile homes located within the gypsy site to the north. These homes were constructed to the residential specification within BS 3632:2015 and thus provide an equivalent acoustic performance to the proposed park homes.
- 5.4.5. The measurements taken within and outside the existing mobile home indicated an external – internal level difference of between 30 – 31 dB(A). The difference in the measured 1/3 octave band noise levels is indicated below. The difference is consistent with the level reduction observed from standard thermal double glazing, which has been installed within the mobile home and acoustic performance of the construction of the home, which has been designed to BS 3632, needs to meet a minimum sound reduction of 35 dB R_w . (a typical construction specification for a residential specification park home is provided in Appendix F).



- 5.4.6. Utilising the noise level differences above, calculations of the noise levels within the proposed park homes indicate that the internal noise levels would not exceed a level of 35 dB $L_{Aeq, 16 \text{ hr}}$ daytime / 30 dB $L_{Aeq, 8 \text{ hr}}$ night-time, thus fully meeting the requirements of BS 8233 internally.
- 5.4.7. Consideration has also been given to the maximum noise levels internally overnight. Maximum noise levels measured overnight were noted to be typically up to 70 dB $L_{Amax, F}$ along the eastern development boundary. With the mitigation provided, this would further reduce by 6 – 7 dB(A) at the homes closest to the road. Taking account of the 30 dB(A) reduction in noise levels between outside and in, noise levels within the bedrooms overnight would remain below a level of 45 dB $L_{Amax, F}$. On this basis, it is not considered that vehicles travelling along the A1(M) overnight would result in any potential sleep disturbance effects or adverse noise effect upon the occupant of the homes.
- 5.4.8. The specifications of residential park homes require them to be designed with adequate ventilation to ensure sufficient ventilation to minimise the potential for condensation build up. The ventilation is generally provided through floor and roof vents. The level of ventilation would be sufficient to allow occupants to maintain windows closed should they choose, whilst ensuring appropriate ventilation through the homes.
- 5.4.9. It would be necessary to maintain windows closed within the homes, to achieve the BS 8233 guidelines. However, this requirement is not specified within the Standard and advises that should the mitigation strategy require windows to be maintained closed, adequate ventilation should be provided to allow this. The standard ventilation within a park home would achieve this, as they are designed to ensure condensation is minimised.
- 5.4.10. It is anticipated that each park home would have a small external amenity area provided to allow a table and chairs, if the occupants choose. Generally, noise levels within the development would be below 55 dB $L_{Aeq, 16 \text{ hr}}$ daytime and thus compliant with the BS 8233 guidelines.

- 5.4.11. Noise levels would be higher at the properties closer to the road. For these properties, it is proposed to locate the amenity area on the side of the home facing away from the road, thus utilising the property façades as additional screening. The modelling results indicate that there are suitable areas adjacent to each home where noise levels would remain below the guideline value of 55 dB $L_{Aeq, 16 \text{ hr}}$ to locate these areas.
- 5.4.12. The provision of the new park homes and additional noise mitigation proposed along the A1(M) boundary would additionally provide some benefit to the occupants of the existing mobile homes to the north and south of this development, as the new homes and mitigation would provide additional screening from the road traffic noise.
- 5.4.13. In summary, taking account of the guidance provided within both BS 8233 and the ProPG guidance, noise levels within the proposed park homes, with the mitigation provided, would achieve the requirements of BS 8233 and thus ensure satisfactory living conditions for future occupants. The proposals would therefore fully accord with the requirements of the NPPF.

6. Summary

- 6.1. LF Acoustics Ltd have been appointed by Royale Quarters (SV) Limited to prepare a noise assessment to support a planning application for a proposed park home development at Carden Gardens, Danesbury Park Road, Welwyn.
- 6.2. It is proposed to provide 27 residential park home plots within the development.
- 6.3. The site is adjacent to the A1(M), with noise levels across the site influenced by traffic travelling along the road.
- 6.4. Noise surveys were undertaken to establish the current noise levels on the site, which are principally attributable to road traffic travelling along the A1(M), upon which the noise assessment has been based.
- 6.5. The park homes would be of a residential specification, to allow occupation throughout the year, and compliant with the requirements of BS 3632. This Standard ensures that the homes would be fully insulated and double glazed, with the Standard specifying a minimum sound insulation requirement.
- 6.6. An initial assessment of the noise levels identified the requirement for additional noise mitigation to ensure satisfactory living conditions. A 2.1-metre-high acoustic fence is proposed to be constructed along the eastern site boundary, with short returns along the northern and southern site boundaries.
- 6.7. An assessment of the noise levels calculated within the proposed park homes based upon the proposed layout and provision of the boundary mitigation, would ensure that acceptable levels of noise were achieved within the homes during the day and night-time periods, meeting the requirements of both BS 8233 and ProPG guidance.
- 6.8. Within the homes, assuming windows open, the guideline values specified within ProPG and BS 8233 would not be achievable. However, the Standard and guidance is clear that, providing good acoustic design principles have been followed, which has been achieved through layout in this situation, then it is acceptable to base the assessment upon the windows remaining closed, providing adequate ventilation is provided. For residential specification park homes, adequate ventilation would be provided, as this is higher than for a standard dwelling, to ensure condensation is minimised.
- 6.9. With the proposed layout, boundary mitigation, and utilisation of residential specification park homes, no adverse noise impacts have been identified and the proposals would therefore fully comply with the requirements of the NPPF.

References

1. Ministry of Housing, Communities and Local Government. National Planning Policy Framework. December 2024.
2. British Standards Institute. Guidance on Sound Insulation and Noise Reduction for Buildings. BS 8233. 2014.
3. ANC / Institute of Acoustics / Chartered Institute of Environmental Health. ProPG: Planning and Noise. Professional Practice Guidance on Planning & Noise. New Residential Development. May 2017.
4. British Standards Institute. Residential Park Homes – Specification. BS 3632:2015.
5. British Standards Institute. Residential Park Homes – Specification. BS 3632:2023.
6. Department of Transport. Calculation of Road Traffic Noise. The Stationary Office. 1988.
7. Defra. Method for Converting the UK Traffic Noise Index $L_{A10,18h}$ to the EU Noise Indices for Road Noise Mapping. TRL/ Casella. Doc Ref. st/05/91/AGG04442. 2006.

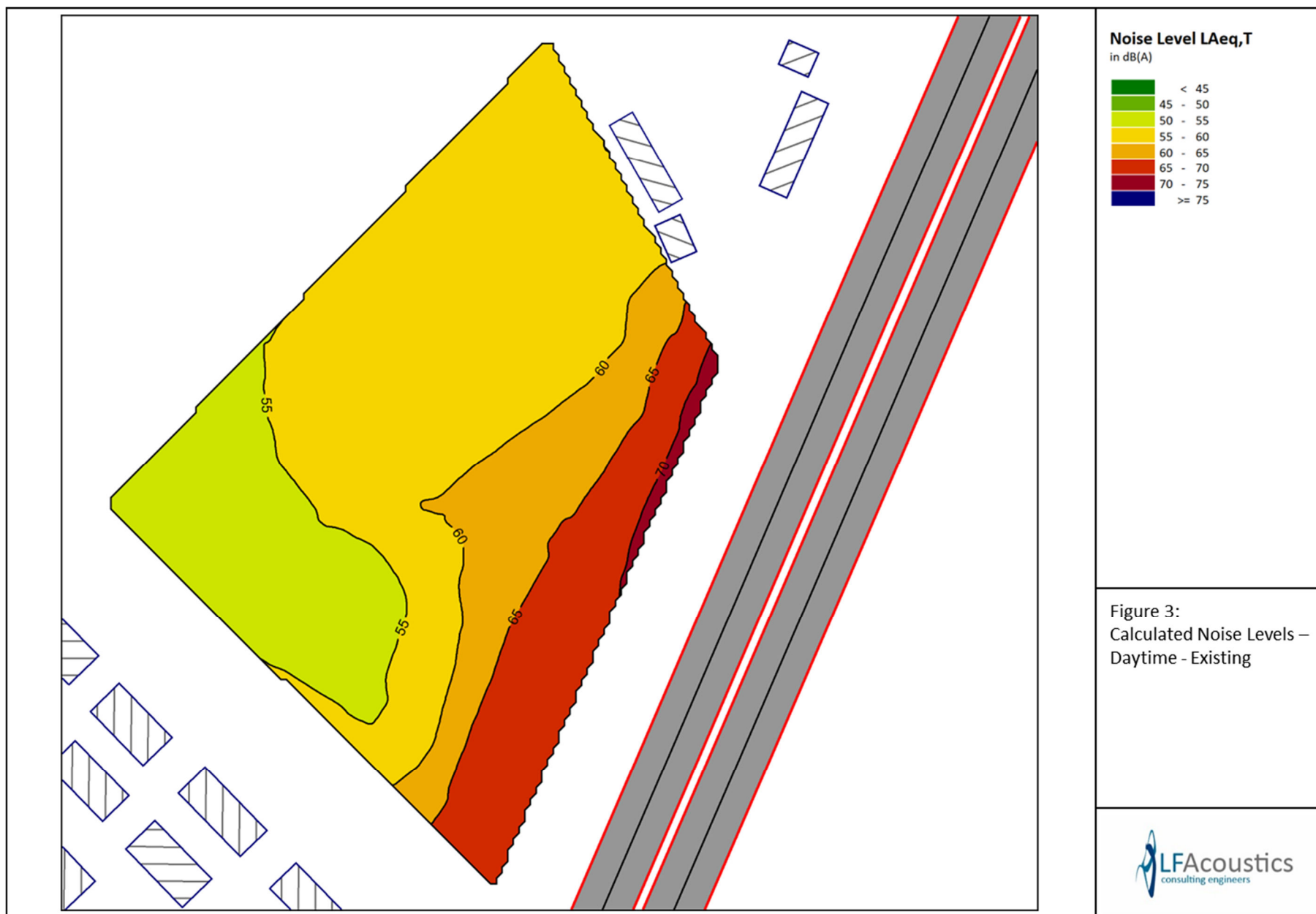
Figures

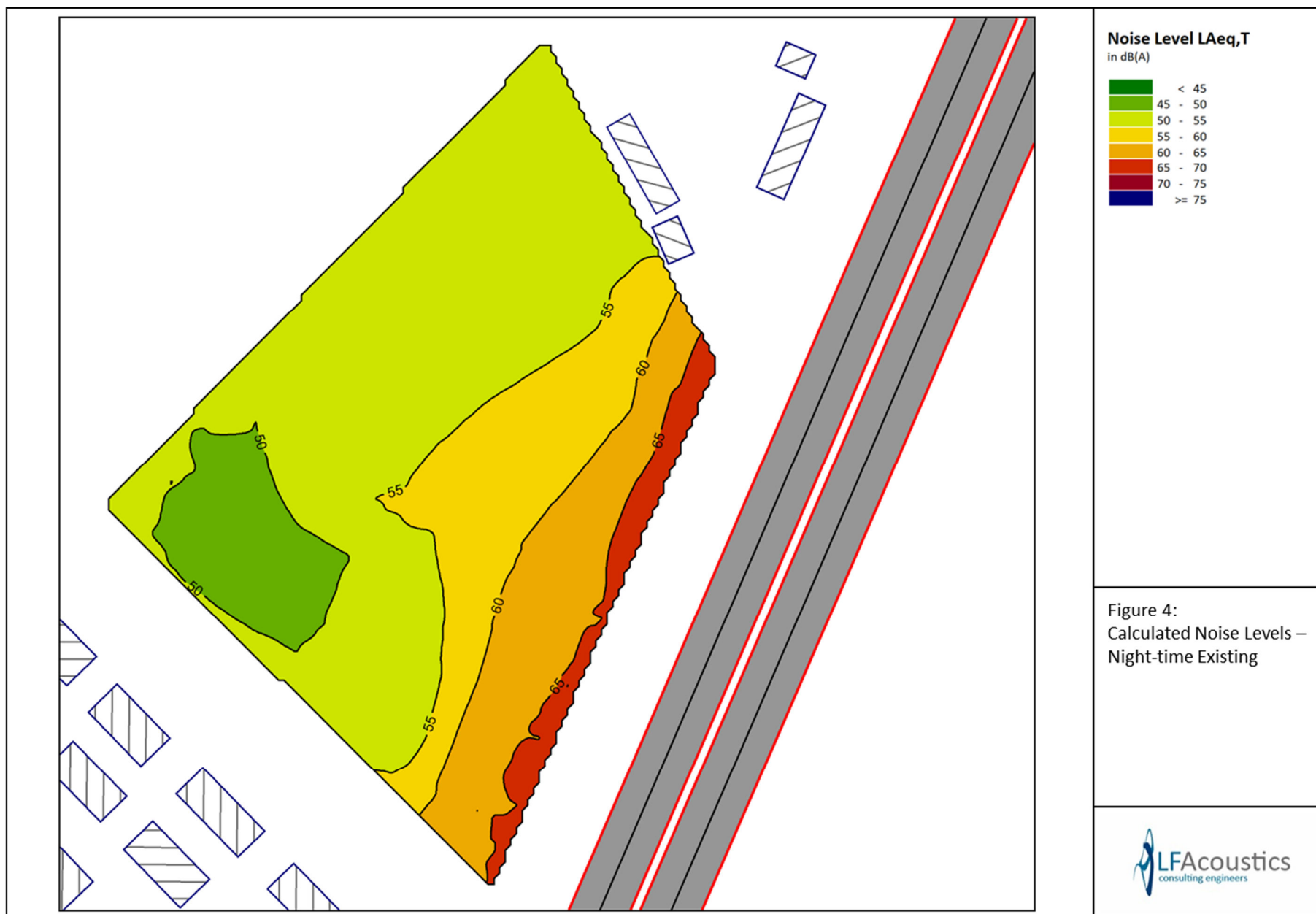


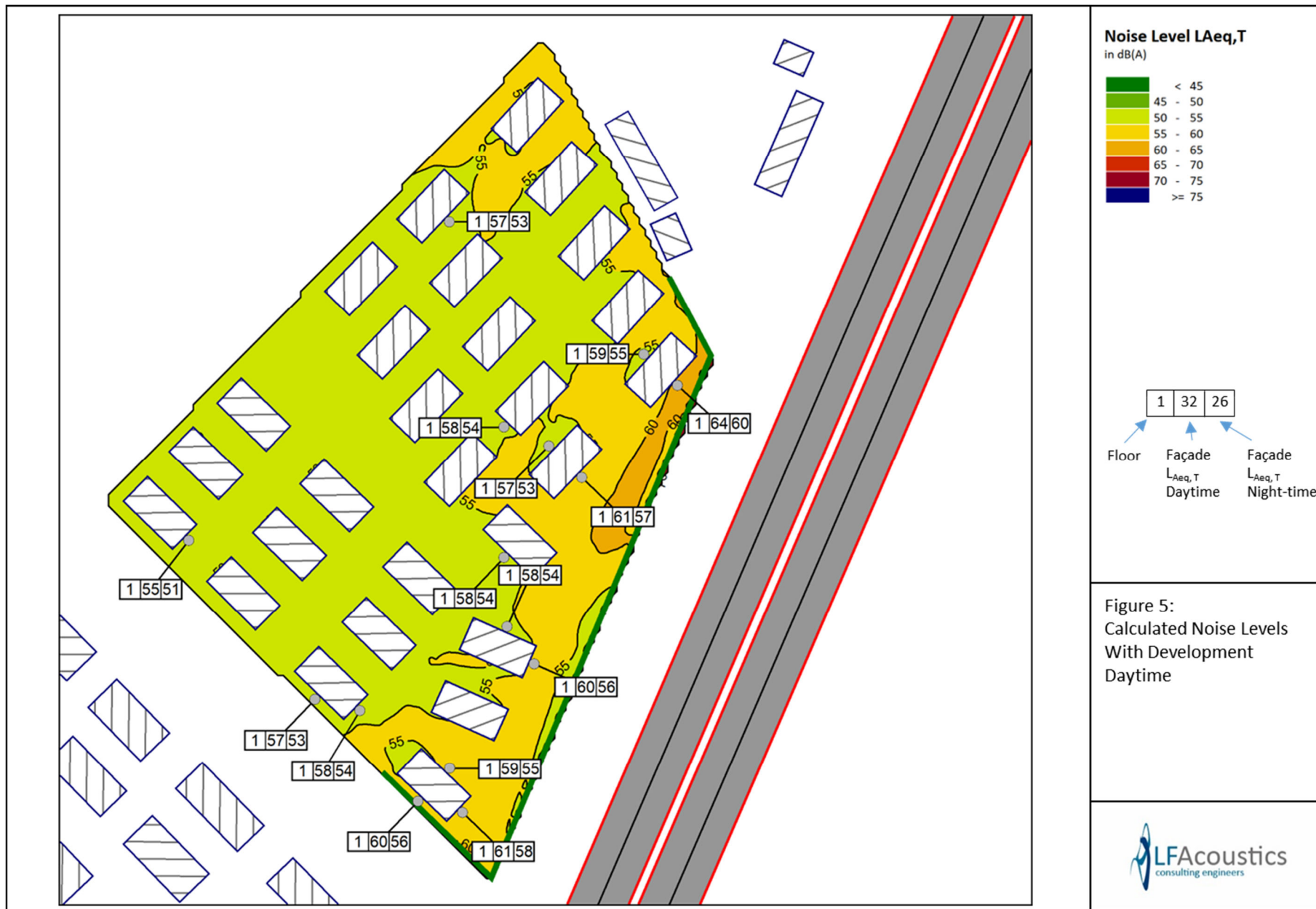
Figure 1:
Site Location and Noise
Monitoring Positions

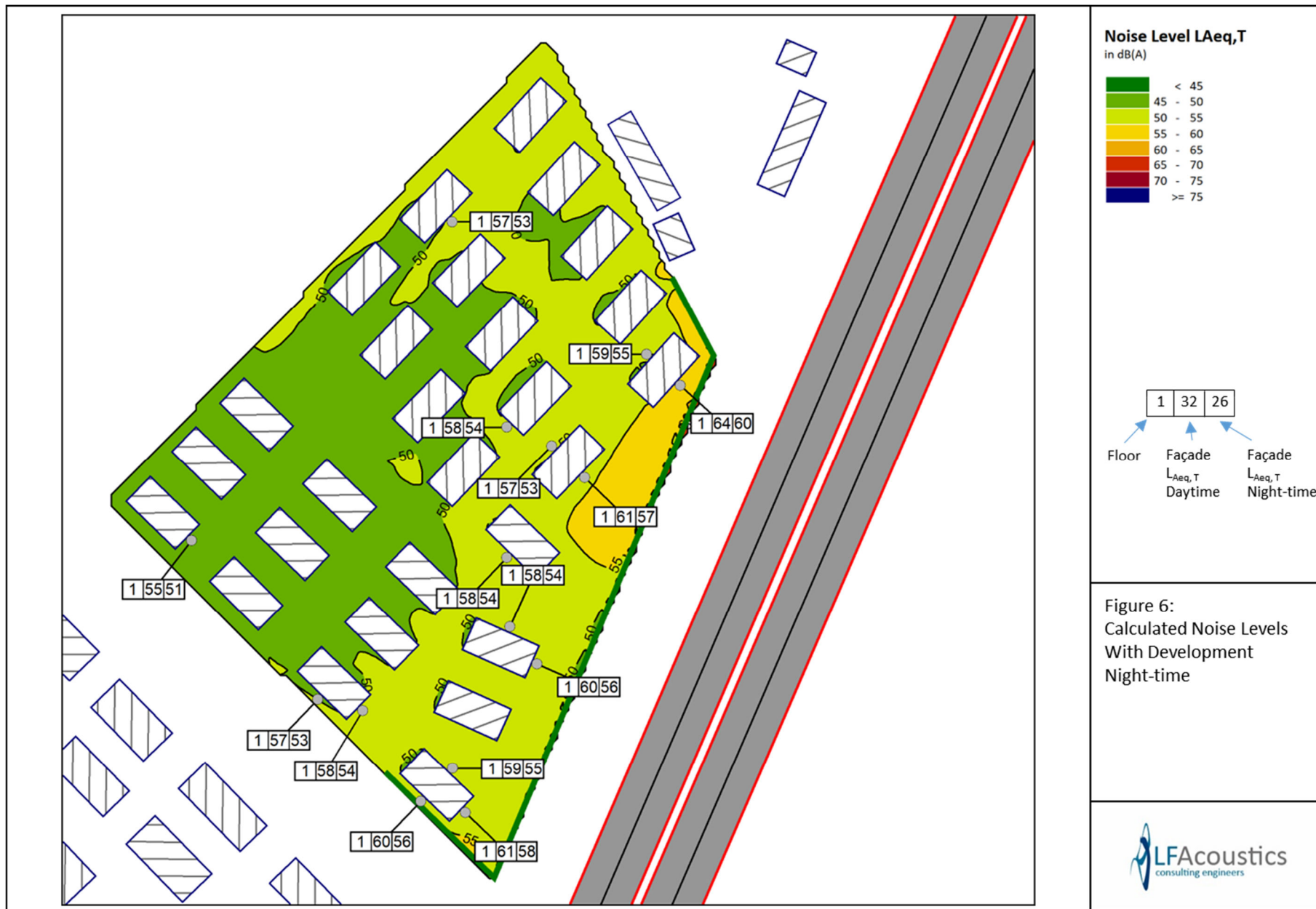


Figure 2:
Proposed Site Layout and
Noise Mitigation









Appendix A

Les Jephson Experience

Les Jephson BEng (Hons) MIOA is a Director of LF Acoustics Ltd.

He has over 30 years' experience in acoustic consultancy, graduating from Salford University in 1993.

He is a full Member of the Institute of Acoustics.

Over this period, his experience has included assessments for residential developments, transportation schemes and commercial developments, having undertaken many projects during this time.

Mr Jephson is an experienced expert witness, providing evidence in relation to noise on several relevant projects.

In relation to Gypsy and Traveller sites, Mr Jephson has worked on numerous projects, both with regards planning applications and providing expert testimony at Appeal hearings and Inquiries.

Appendix B

Noise Units

Decibels (dB)

Noise can be defined as unwanted sound. Sound in air can be considered as the propagation of energy through the air in the form of oscillatory changes in pressure. The size of the pressure changes in acoustic waves is quantified on a logarithmic decibel (dB) scale firstly because the range of audible sound pressures is very great, and secondly because the loudness function of the human auditory system is approximately logarithmic.

The dynamic range of the auditory system is generally taken to be 0 dB to 140 dB. Generally, the addition of noise from two sources producing the same sound pressure level, will lead to an increase in sound pressure level of 3 dB. A 3 dB noise change is generally considered to be just noticeable, a 5 dB change is generally considered to be clearly discernible and a 10 dB change is generally accepted as leading to the subjective impression of a doubling or halving of loudness.

A-Weighting

The bandwidth of the frequency response of the ear is usually taken to be from about 18 Hz to 18,000 Hz. The auditory system is not equally sensitive throughout this frequency range. This is taken into account when making acoustic measurements by the use of A-weighting, a filter circuit which has a frequency response similar to the human auditory system. All the measurement results referred to in this report are A-weighted.

Units Used to Describe Time-Varying Noise Sources (L_{Aeq} , L_{A90} and L_{Amax})

Instantaneous A-weighted sound pressure level is not generally considered as an adequate indicator of subjective response to noise because levels of noise usually vary with time.

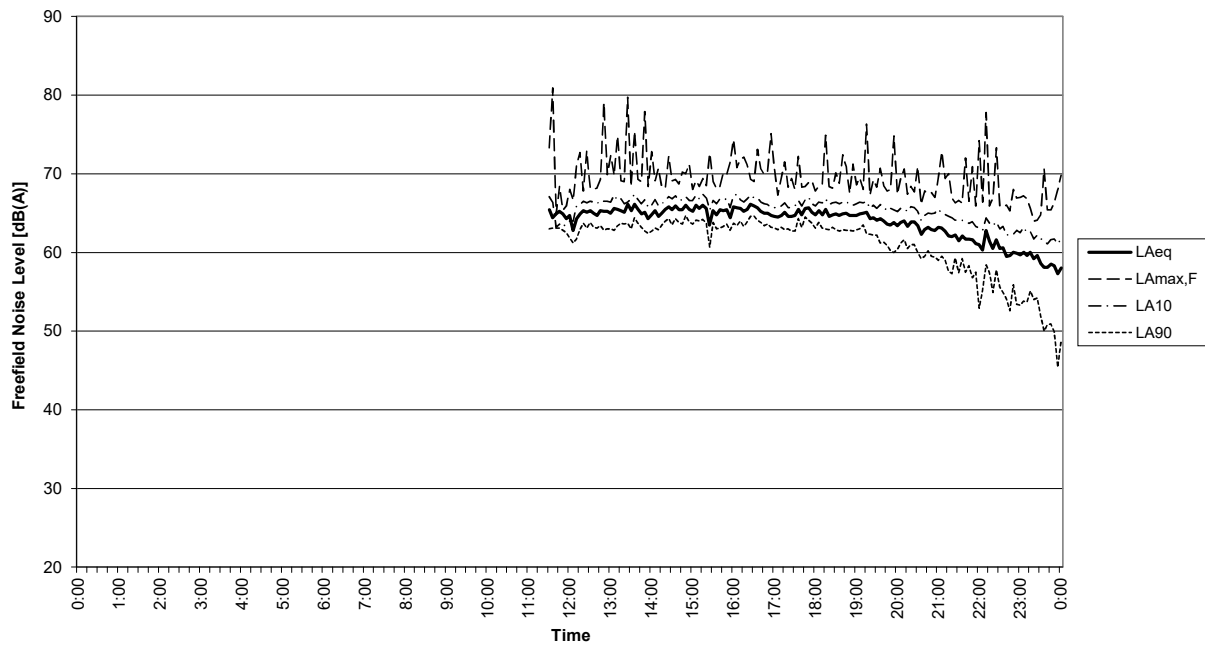
For many types of noise the Equivalent Continuous A-Weighted Sound Pressure Level ($L_{Aeq,T}$) is used as the basis of determining community response. The $L_{Aeq,T}$ is defined as the A-weighted sound pressure level of the steady sound which contains the same acoustic energy as the noise being assessed over a specific time period, T.

The L_{A90} is the noise level exceeded for 90% of the measurement period. It is generally used to quantify the background noise level, the underlying level of noise which is present even during the quietest part of the measurement period.

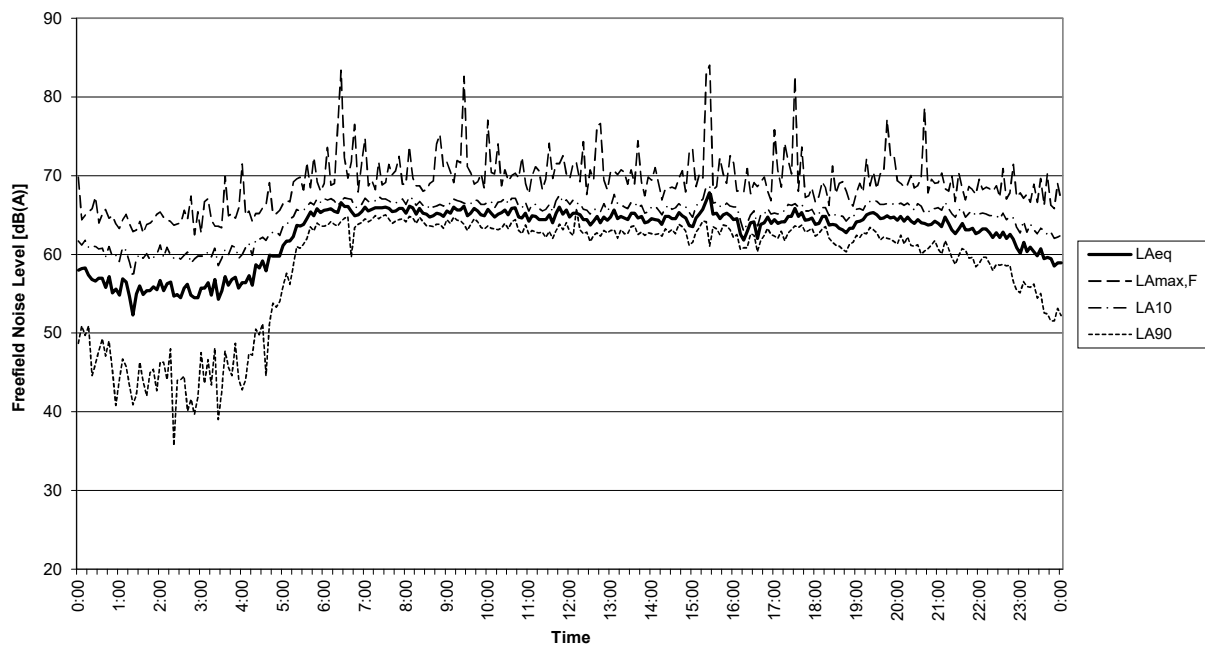
The L_{Amax} is the maximum value that the A-weighted sound pressure level reaches during a measurement period. $L_{Amax,F}$, or Fast, is averaged over 0.125 of a second.

Appendix C
Results of Unattended Noise Survey
Position U1 – Eastern Development Boundary

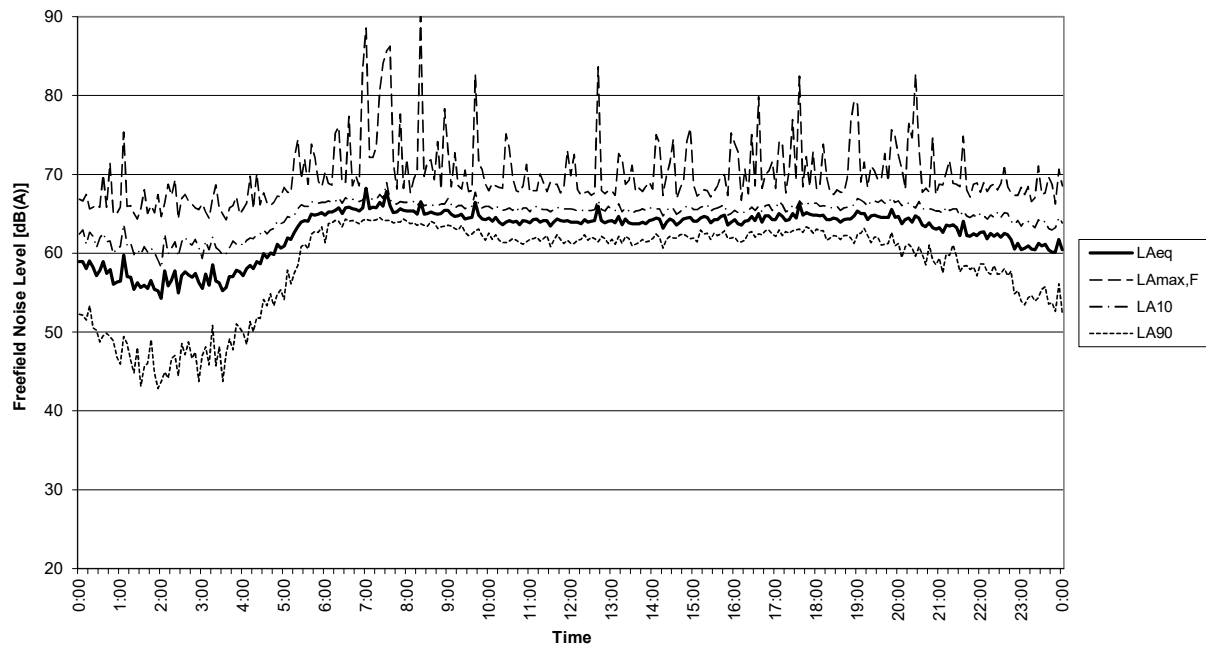
Monday 14/7/25



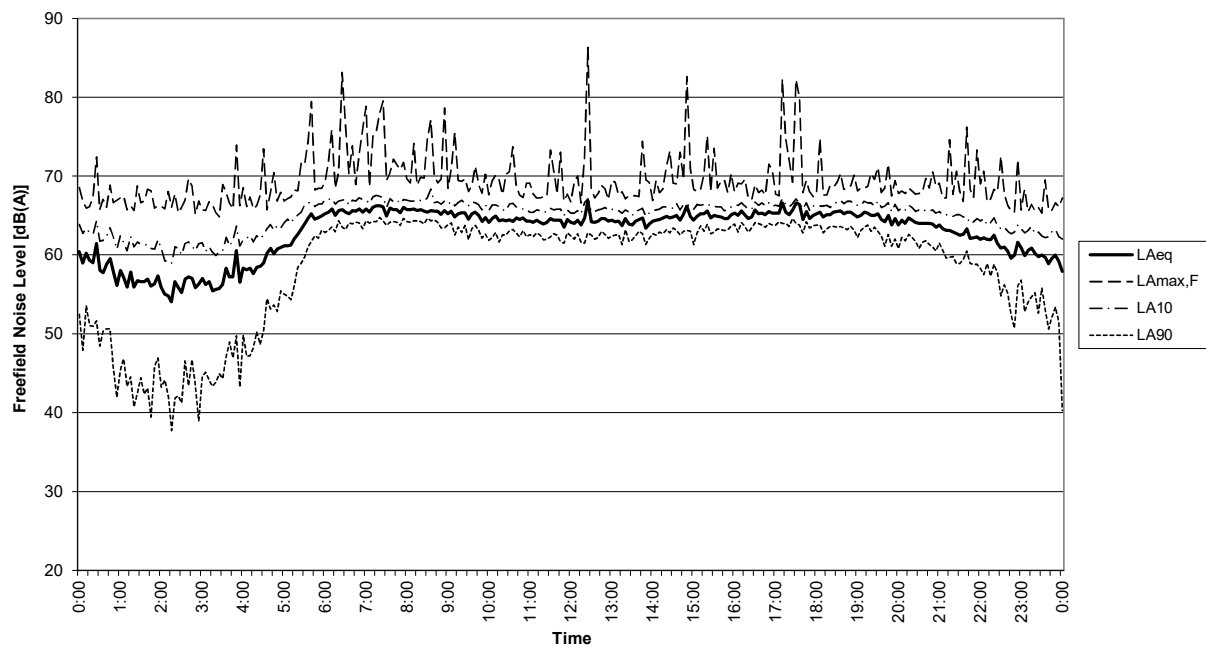
Tuesday 15/7/25



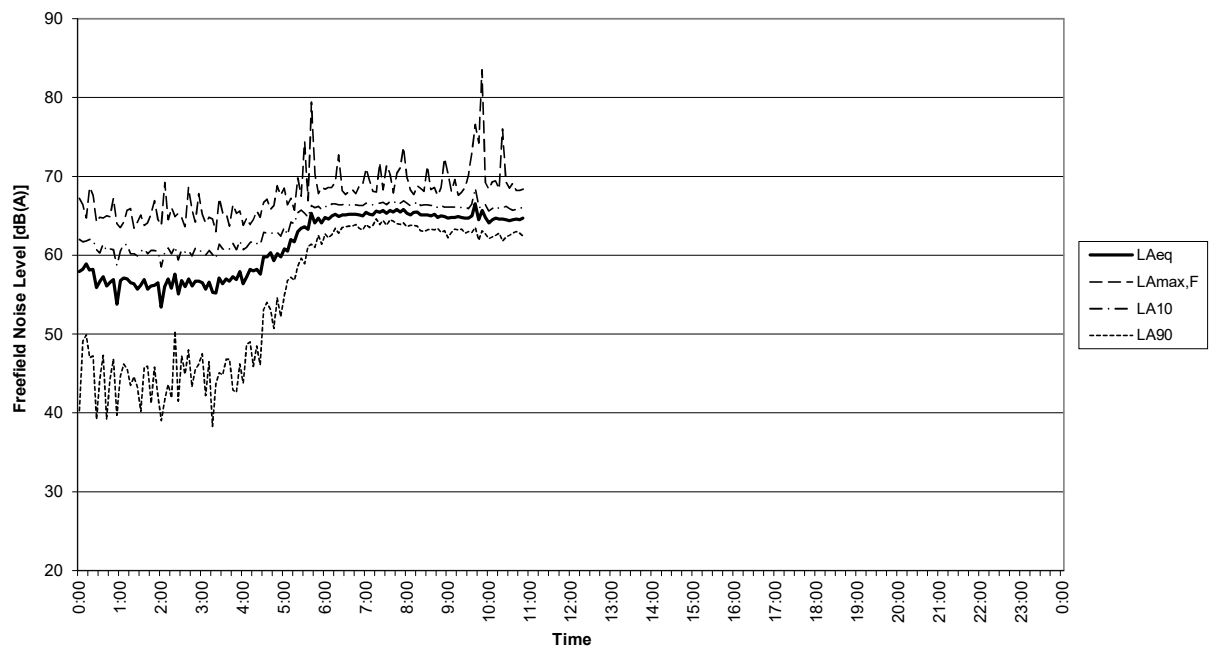
Wednesday 16/7/25



Thursday 17/7/25

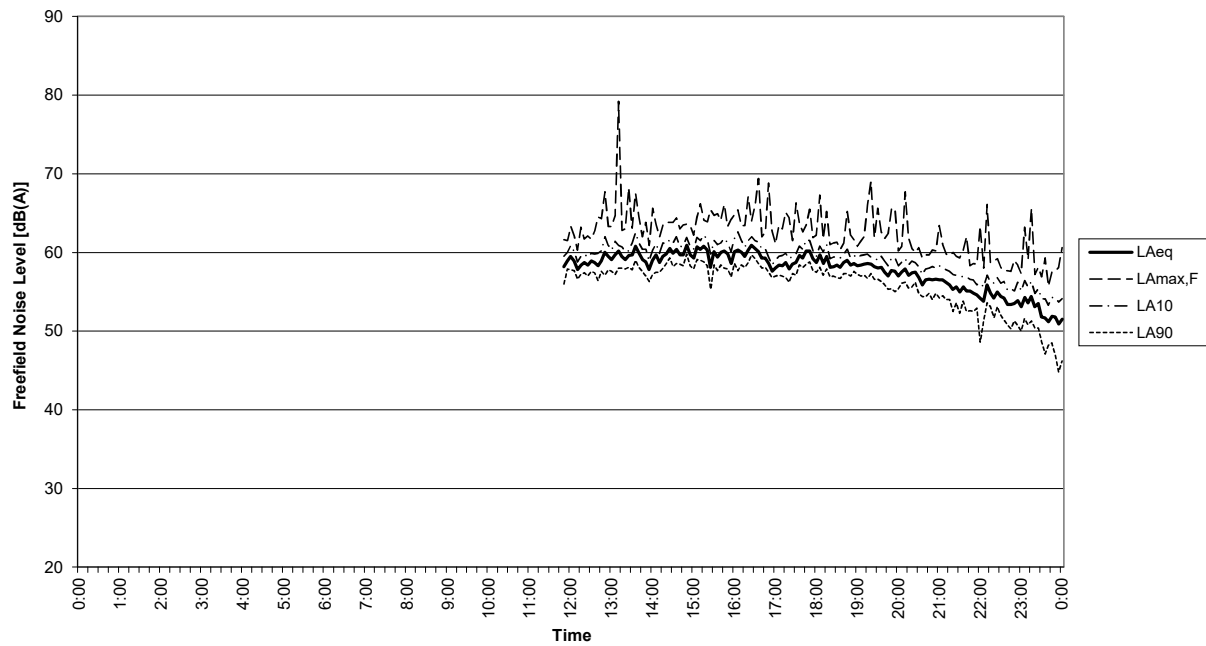


Friday 18/7/25

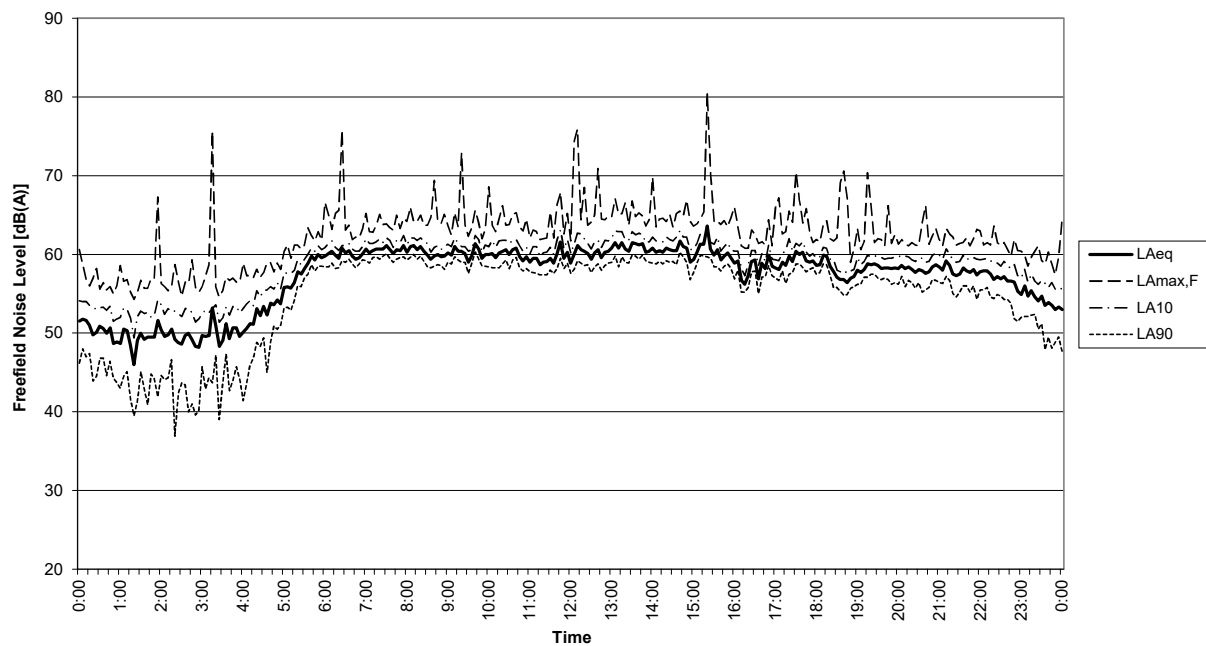


Appendix D
Results of Unattended Noise Survey
Position 2 – Western Boundary

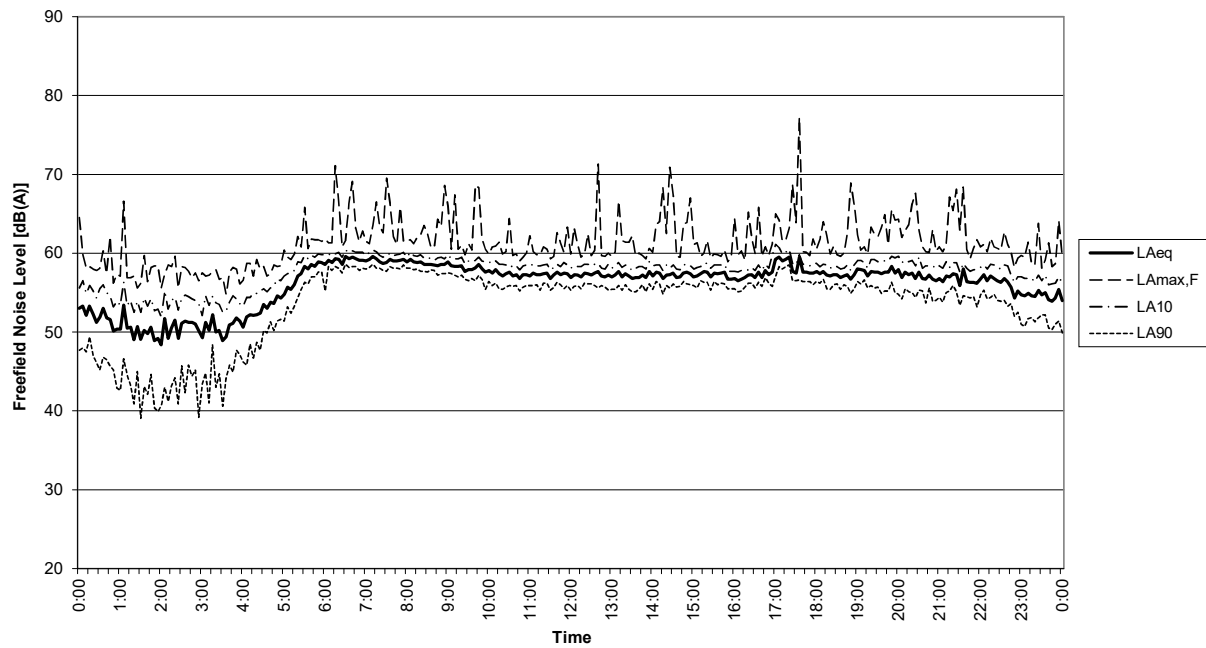
Monday 14/7/25



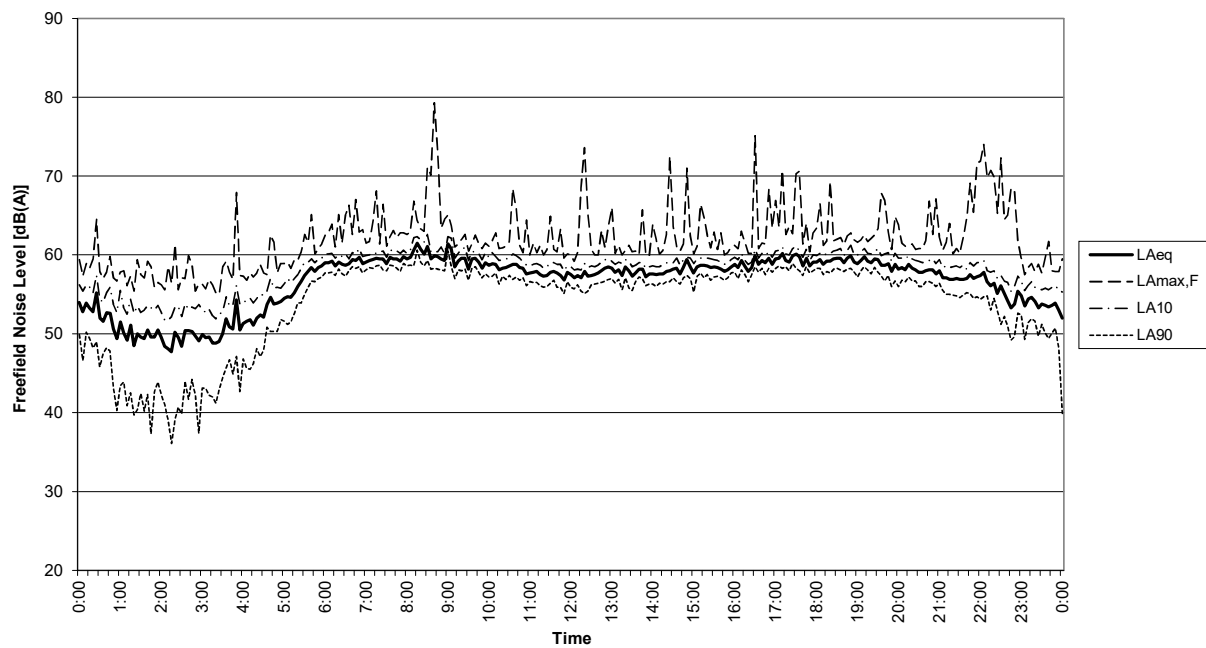
Tuesday 15/7/25



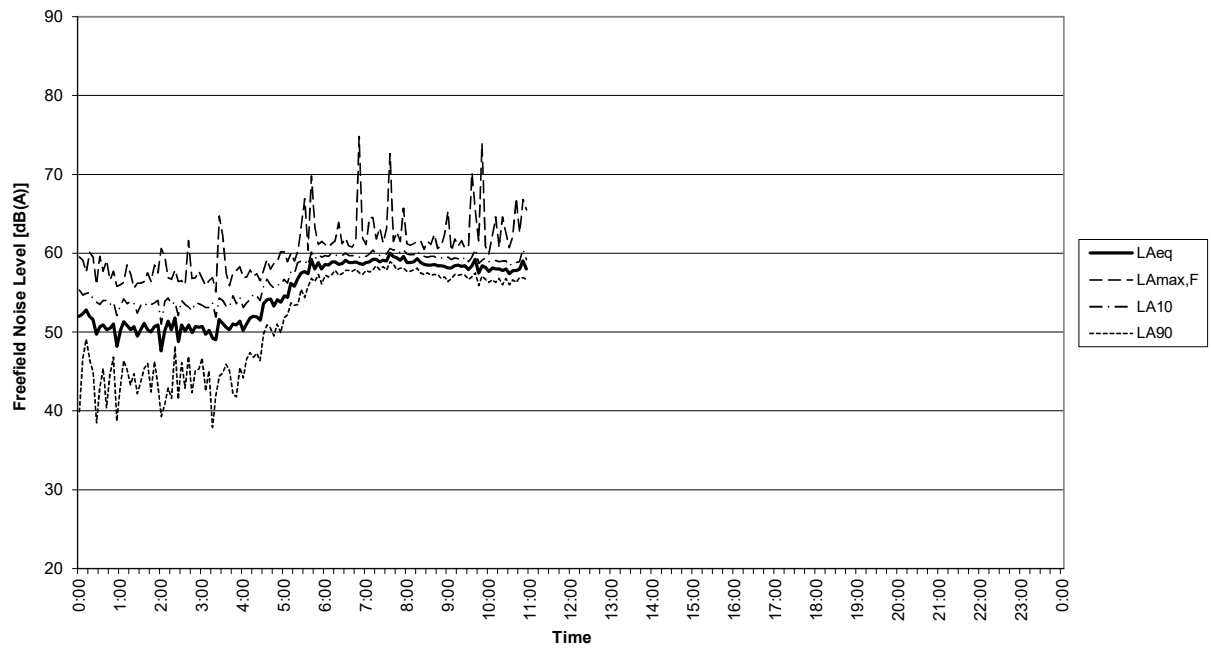
Wednesday 16/7/25



Thursday 17/7/25



Friday 18/7/25



Appendix E
Results and Analysis of Attended Noise Measurements

Proposed Residential Caravan Site, Cardens Gardens, Danesbury Park Road, Welwyn
Results of Attended Noise Measurements made on 14 July 2025

Equipment Used: Rion NL-52 Class 1 Sound Level Analysers, Calibrated with Rion NC-74 Class 1 Acoustic Calibrator

Location	Start Time	FREEFIELD Sample Measurement Results			FREEFIELD Unattended Measurement Results			Difference		Period L _{Aeq,T} Day Night	
		L _{Aeq}	L _{Amax,F}	L _{A90}	L _{Aeq}	L _{Amax,F}	L _{A90}	L _{Aeq}	L _{A90}		
S1	12:00	67.6	73.4	65.4	64.7	68.0	61.8	2.9	3.6		
	12:05	67.7	71.1	65.9	62.8	66.6	61.2	4.9	4.7		
	12:10	67.0	70.6	65.0	64.3	71.0	61.7	2.7	3.3		
	12:15	67.3	76.3	65.1	64.9	72.7	62.9	2.4	2.2		
	12:20	67.5	70.9	65.5	65.3	67.8	63.7	2.2	1.8		
	12:25	67.2	73.9	64.8	65.1	72.9	63.1	2.1	1.7		
	12:30	67.8	71.7	65.9	65.3	68.2	63.8	2.5	2.1		
	12:35	67.2	70.5	65.0	65.0	68.0	63.2	2.2	1.8		
	12:40	67.0	70.7	65.1	64.7	68.2	63.1	2.3	2.0		
	12:45	67.6	71.6	65.6	65.3	69.3	63.4	2.3	2.2		
	12:50	67.4	71.7	64.9	65.2	79.0	62.8	2.2	2.1		
	12:55	67.6	72.3	65.1	65.2	69.9	63.0	2.4	2.1		
Average Difference =								2.6	2.5	67	63
S2	12:00	64.9	70.7	62.8	64.7	68.0	61.8	0.2	1.0		
	12:05	65.0	67.9	63.5	62.8	66.6	61.2	2.2	2.3		
	12:10	64.4	68.1	62.4	64.3	71.0	61.7	0.1	0.7		
	12:15	64.5	72.8	62.5	64.9	72.7	62.9	-0.4	-0.4		
	12:20	64.9	68.2	63.3	65.3	67.8	63.7	-0.4	-0.4		
	12:25	64.7	69.6	62.8	65.1	72.9	63.1	-0.4	-0.3		
	12:30	64.9	67.8	63.1	65.3	68.2	63.8	-0.4	-0.7		
	12:35	64.5	67.2	62.5	65.0	68.0	63.2	-0.5	-0.7		
	12:40	64.3	67.5	62.8	64.7	68.2	63.1	-0.4	-0.3		
	12:45	64.8	68.3	62.9	65.3	69.3	63.4	-0.5	-0.5		
	12:50	64.9	68.4	62.6	65.2	79.0	62.8	-0.3	-0.2		
	12:55	64.8	69.0	62.7	65.2	69.9	63.0	-0.4	-0.3		
Average Difference =								-0.1	0.0	64	61
S3	12:00	60.0	64.3	58.4	64.7	68.0	61.8	-4.7	-3.4		
	12:05	59.9	62.9	58.5	62.8	66.6	61.2	-2.9	-2.7		
	12:10	59.1	61.9	57.4	64.3	71.0	61.7	-5.2	-4.3		
	12:15	59.2	65.0	57.7	64.9	72.7	62.9	-5.7	-5.2		
	12:20	59.7	63.8	58.3	65.3	67.8	63.7	-5.6	-5.4		
	12:25	59.4	65.1	57.9	65.1	72.9	63.1	-5.7	-5.2		
	12:30	59.9	62.8	58.4	65.3	68.2	63.8	-5.4	-5.4		
	12:35	59.4	63.2	57.7	65.0	68.0	63.2	-5.6	-5.5		
	12:40	59.1	62.1	57.6	64.7	68.2	63.1	-5.6	-5.5		
	12:45	59.9	64.2	58.1	65.3	69.3	63.4	-5.4	-5.3		
	12:50	60.0	63.3	57.8	65.2	79.0	62.8	-5.2	-5.0		
	12:55	60.1	64.2	58.1	65.2	69.9	63.0	-5.1	-4.9		
Average Difference =								-5.2	-4.8	59	56
S4	12:00	59.3	70.9	57.8	64.7	68.0	61.8	-5.4	-4.0		
	12:05	59.3	68.4	58.1	62.8	66.6	61.2	-3.5	-3.1		
	12:10	58.3	60.9	57.0	64.3	71.0	61.7	-6.0	-4.7		
	12:15	58.7	68.6	57.3	64.9	72.7	62.9	-6.2	-5.6		
	12:20	59.1	72.0	57.7	65.3	67.8	63.7	-6.2	-6.0		
	12:25	58.3	62.8	57.0	65.1	72.9	63.1	-6.8	-6.1		
	12:30	59.1	64.1	57.9	65.3	68.2	63.8	-6.2	-5.9		
	12:35	58.7	67.8	57.4	65.0	68.0	63.2	-6.3	-5.8		
	12:40	58.3	61.3	57.1	64.7	68.2	63.1	-6.4	-6.0		
	12:45	59.3	67.7	57.4	65.3	69.3	63.4	-6.0	-6.0		
	12:50	59.4	64.4	57.7	65.2	79.0	62.8	-5.8	-5.1		
	12:55	59.4	67.3	57.5	65.2	69.9	63.0	-5.8	-5.5		
Average Difference =								-5.9	-5.3	59	55

Appendix F
Typical Specification for Residential Park Home

OMAR PARK HOMES LIMITED

PARK HOME STRUCTURE

All OMAR PARK HOMES are manufactured to meet BS.3632:2015.

SUBFRAME

Our subframes are an enhancement of designs developed and computer modelled in conjunction with Anglia Ruskin University. The principal longitudinal members are constructed as a two tier hot rolled steel channel beam frame 300mm deep. Hot rolled steel angle ladder frames are welded above and braced to the channel beam. The longitudinal steel angle components of the ladder frame provide additional support to the floor joists. Steel members of the ladder frame are located adjacent to and bolted to several of the floor joists. The structure includes siting wheels, levelling supports and detachable telescopic tow bar. All subframes are manufactured in our own workshop by our BS4872 certified engineers and protected in accordance with ISO12944. They also comply with the additional requirements of COP501.

FLOOR (standard construction)

We use high density 18mm thick flooring grade tongue & groove board that is screwed and nailed to 145x36mm & 145x45mm timber floor joists. Joists are located at maximum 407mm centres. Joists are securely bolted to the subframes at regular intervals. Floor finishes depend on the home décor scheme and room. They can be carpet, vinyl, laminate, engineered wood, tile or cut stone. The floor deck is insulated with 96mm platinum grade rigid polystyrene which is held in position between joists with a continuous 125 micron, 20% fire retardant micro-perforated barrier to BS.2782. Thermally our floor 'U' value is 0.30 W/m²/K or better which is 14% more than BS3632:2015 requirements.

EXTERNAL WALLS (standard construction)

Standard exterior finish is a textured synthetic copolymer resin containing selected mineral aggregates to give a class I spread of flame to BS.476. Available in selected colours, it is applied over double primed 9mm magnesium oxide (MgO) cladding board which is glued and nailed to the studwork. The MgO board is rated A1 Euroclass Non-Combustible. The 120x36mm timber studwork is spaced at a maximum of 600mm centres and incorporates semi-rigid foil faced slab insulation between. Wall linings are 12.5mm foil backed plasterboard glued, screwed and nailed to the studworks. Although the opposing two foil faces of the service void produces an enhanced emissivity and improves the wall insulation, we only acknowledge one in our energy calculations. Internal walls are decorated with self-finish wallpaper. All internal substrates comply with BS.476 giving a minimum class I spread of flame. The wall 'U' value is 0.30 W/m²/K or better which is also 14% more than BS3632:2015 requirements. The laboratory tested acoustic value of our walls has proved a 10db improvement over the requirements of BS3632:2015.

ROOF (standard construction)

The roof utilizes the preformed aggregate coated Metrotile® steel tile system, available in several colours, fixed to 50x25mm treated timber battens over Corovin® breather membrane. Battens are secured to dual pitch (single wide) or monopitch (twin) nail plated timber roof trusses (produced in our own truss-press) formed from 72mm and 56mm timbers 30mm and 45mm thick. They are positioned at 400mm or 600mm centres with a pitch of 19°. Twin homes provide central support to the roof trusses via proprietary 'I' beams. Ceiling decks of 12.5mm foil backed plasterboard glued and screwed to roof trusses, insulated with 250mm 'Earthwool' fibreglass insulation. The roof void is cross-ventilated via the eaves that have various widths depending on the style of the home. All rainwater down-pipes and gutters are in PVCu. Fascias and bargeboards are also in PVCu. The roof 'U' value is 0.18 W/m²/K or better representing a 10% improvement on BS3632:2015.

WINDOWS & DOORS (standard construction)

Omar Park Homes produce PVCu windows and doors in a separate factory on our own 14 acre site. The profile is from WHS Halo. A typical window 'U' value is 1.6 W/m²/K.

EXTERNAL FEATURES

Our external features such as corner quoins, window hoods, pilasters & lintels are all manufactured in fibreglass by a specialist boat building company using our own moulds. This provides consistency of colour and superior quality.

ECO VARIANTS

Renewable energy ECO variants of some of our homes are also available at extra cost. They have a different construction which also significantly reduces heat loss. The thermal values can be as low as - floor 0.23 W/m²/K, wall 0.15 W/m²/K & roof 0.13 W/m²/K. For commercial reasons we do not release these home specific construction details.

FITTINGS & EQUIPMENT

All OMAR homes are supplied as standard with:

Gas 'A' rated condensing combination boiler fed radiator central heating.

Lounge suite.

Dining table and chairs.

Fully fitted kitchens.

Fitted or freestanding wardrobes or walk-in wardrobes and other cabinets to the bedrooms.

Divan beds and mattresses.

Floor coverings and soft furnishings throughout.

Most homes incorporate integrated appliances that are floor plan dependant.