MRS M TAYLOR

STICKS & STONES CHILD MINDERS
42 BIRMINGHAM LANE, MELTHAM, HD9 5LH

APPLICATION REF: 2025/62/90116/W

NOISE ASSESSMENT

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SECTION 1 INTRODUCTION

1.1 RP Acoustics Ltd (RPA) has been commissioned by Mrs M Taylor (T/A Sticks & Stones) to undertake a noise assessment as part of a retrospective planning application for a change of use to form a mixed use dwellinghouse and child minders at 42 Birmingham Lane, Meltham, HD9 5LH (the application site).

1.2 As part of the internal consultation process for the application (app ref: 2025/90116), Kirklees Council Environmental Health (Pollution & Noise Control) has commented as follows:

> We have concerns about the transmission of noise from the proposed use affecting the amenity of the neighbouring property. Whilst the submitted supporting statement from Paul Matthews Architectural shows photographs of installed acoustic insulation, no sound insulation (R_w) values are given. A higher level of sound insulation is required where commercial and residential uses share a party wall/floor/ceiling and a condition is recommended for a Noise Impact Assessment to be submitted to consider all sources of noise from the proposal along with the level of sound insulation and any mitigation measures if deemed necessary.
>
> The supporting statement makes reference to the average number of children on site at any time and the hours of use and a condition is recommended for a Noise Management Plan to be submitted detailing this along with any other noise control measures to ensure there is no loss of amenity to the neighbouring property.

1.3 The objectives of the assessment were to:

i. Identify the nearest noise sensitive receptors (NSRs) to the site.

ii. Identify key noise sources associated with the operation of the child minders.

iii. Assess the potential impact of the operation of the child minders at the nearest NSRs with reference to pertinent guidelines.

iv. Provide recommendations, as necessary, to minimise the impact of noise at the NSRs associated with the operation of the child minders, including the preparation of a Noise Management Plan (NMP).

1.4 This report details the methodology and results of the assessment and has been prepared for Mrs M Taylor for the sole purpose described above, with no extended duty of care to any third party implied or offered.

1.5 A glossary of acoustics terms used in the main body of the text is contained in Appendix 1.

SECTION 2 APPLICATION SITE SETTING AND OPERATIONS

2.1 SITE SETTING

2.1.1 The application site is located in a residential area, off Birmingham Lane, to the north west of the centre of Meltham. An annotated aerial image of the site and its environs is contained in Appendix 2.1. The application site is bound by:

i. No. 44 Birmingham Lane to the north.

ii. The gardens of dwellings fronting onto Slaithwaite Road to the east.

iii. No. 40 Birmingham Lane to the south.

iv. Birmingham Lane to the west, with Meltham Moor Primary School on the far side of the lane.

2.1.2 Meltham Moor Primary School is understood to open from 8:45 to 15:15 hours and has break times at 11:00, 12:00 to 13:15 (staggered lunch) and 14:15 hours. A before and after school club is also operated from the premises (Moor Fun Wrap Around Club), which provides child care around the school hours (from 07:30 to 18:00 hours) and also provides a holiday club.

2.2 APPLICATION SITE OPERATIONS

2.2.1 Sticks & Stones child minders operates from No.42 Birmingham Lane and is open from 07:30 to 17:30 hours Monday to Friday. During the hours of operation, the business uses five areas of the dwelling, consisting of the living room, dining room, sun room (no separating wall with No. 44), decking area and Bedroom 2 (1st floor level). The locations of the areas used for child minding services are identified on layout plans contained in Appendix 2.2.

2.2.2 The number of children at the premises fluctuates during the day and on a daily basis as it includes both pre-school children (who are minded at the premises during the day) and school aged children (who are dropped off at the premises pre/post school, but attend school during the day). Typically, the number of children who are present during the core hours of the child minders (09:00 to 15:30 hours) ranges from eight to nine children.

2.2.3 As part of the management protocols for the business, service users are provided with a specific drop off and pick up time, to control the flow of arrivals/departures and minimise the potential noise impact by staggering traffic movements. Note: a number of service users drop their children by foot.

2.2.4 The business provides fully supervised child minding services, with the majority of the day consisting of supervised play activities both internally and on the decking area (weather dependant). Children are encouraged to communicate using a reasonable level of voice. Typically, a morning snack is provided between 09:30 to 10:00, lunch between 11:30 to 12:00, sleep/quiet time 12:30 to 14:00 (Bedroom 2 is used for a sleep area) and afternoon snack 14:00 to 14:30.

2.2.5 A number of measures have been put in place to control any potential noise impact, which include:

i. Provision of three parking spaces in the garden area to the front of the premises.

ii. Construction of acoustic wall linings to the separating wall with No. 44 at ground floor level to control airborne noise transmission.

iii. Provision of rugs on hard floor finishes to control footfall noise.

iv. Changing of the interconnecting doors between the living room, dining room and sun room to sliding doors.

v. Provision of baby gates in the doorways to stop children running between rooms.

vi. Changing the usage of the rooms so that the majority of activities are undertaken in the sun room, which does not have a separating wall with No. 44.

vii. Provision of a solid vertical barrier on the side of the decking adjacent to the boundary hedge with No. 44.

SECTION 3 NOISE ASSESSMENT

3.1 NOISE SENSITIVE RECEPTORS (NSRS)

3.1.1 The nearest NSR was identified as No. 44 Birmingham Lane (NSR1). No. 44 shares a separating wall with No. 42 at ground and 1st floor level and has a common boundary along the front and rear garden areas. The rear garden to No. 44 was noted to be landscaped in the vicinity of the boundary hedge between the two dwellings, with a seating area located circa 15 metres from the boundary.

3.1.2 The location of NSR1 is identified on the annotated aerial image contained in Appendix 2.1.

3.2 NOISE SURVEY RESULTS

3.2.1 In order to assess the activity noise levels at the application site, a noise survey was undertaken between circa. 11:00 and 14:30 hours on Wednesday 23rd April 2025. The survey period was selected to capture typical daytime activities. On the date of the survey, there were eight children being minded (note: this is typical of the number of children minded during core hours, see Para. 2.2.2).

3.2.2 For the purpose of the assessment, the following monitoring positions (MPs) was used:

i. MP1 was located in a free field environment, at 1.5 metres above ground level (mAGL) in the south eastern corner of the external decking area.

ii. MP2 was located in a reflective field environment, at 1.5 mAGL, in the dining room. Note: all internal sliding doors were open for the duration of the measurement.

3.2.3 The approximate locations of the monitoring positions are identified on the layout plans contained in Appendix 2.2.

3.2.4 Noise measurements were undertaken using a NTi Audio XL2 Type 1 integrating sound level meter. A 90 mm windshield was fitted for all measurements. The measurement system calibration was verified immediately before the commencement of the measurement sessions and again at the end.

No drift in calibration level was noted. Weather conditions throughout the survey were appropriate for monitoring.

3.2.5 Measurements consisted of A–weighted broadband parameters, together with linear third octave band Leq levels, with a logging interval of 1 second. Measurement data was post-processed using NTi Audio Data Explorer software.

3.2.6 The following table contains a summary of the noise measurement data, rounded to the nearest decibel.

Table 3.1: Noise Measurement Data Summary

MP	Date	Duration	$L_{Aeq,T}$ (dB)	L_{AFmax} (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	Comments
1	23/4/25	55 mins	53	73	56	44	Noise climate consisting of children playing, birdsong and local traffic.
2	23/4/25	90 mins	51	75	53	38	Quiet time. Noise climate consisting of background music and children/staff talking.
2	23/4/25	30 mins	60	83	64	46	Activity time. Noise climate consisting of children playing.

SECTION 4 ASSESSMENT CRITERIA

4.1 NATIONAL PLANNING POLICY FRAMEWORK

4.1.1 The National Planning Policy Framework (NPPF) is a material consideration in planning decisions. At the heart of the NPPF is a presumption in favour of sustainable development and the policies, taken as a whole, constitute the Government's view on what sustainable development in England means in practice for the planning system.

4.1.2 The NPPF states that there are three overarching objectives to sustainable development, which include an economic objective (contributing to building a strong, responsive and competitive economy), a social objective (providing the supply of housing required to meet the needs of present and future generations) and an environmental objective (which includes minimising waste and pollution).

4.1.3 The main policy statements in relation to noise are Paragraphs 191 and 193 of the NPPF, which state:

> 191. 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, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:
>
> a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life[69];
>
> b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and
>
> c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

> 193. Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities 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.

4.1.4 In relation to 'adverse impacts' (footnote [69]), the NPPF refers to the Explanatory Note to the Noise Policy Statement for England (NPSE) for guidance.

4.1.5 The Noise Policy Statement for England (NPSE) and associated Explanatory Note were published by DEFRA in 2010 and set out the Government's noise management strategy to enable noise management decisions to be made within the wider context (i.e. guiding principles of sustainable development), in a cost-effective manner and in a timely fashion.

4.1.6 Fundamental to this approach is '*there is a need to integrate consideration of the economic and social benefit of the activity or policy under examination with proper consideration of the adverse environmental effects, including the impact of noise on health and quality of life. This should avoid noise being treated in isolation in any particular situation, i.e. not focussing solely on the noise impact without taking into account other related factors'*.

4.1.7 The noise policy aims of NPSE are to (i) avoid significant adverse impact on health and quality of life, (ii) mitigate and minimise adverse impacts on health and quality of life, and (iii) where possible, contribute to the improvement of health and quality of life. The policy aims are always to be considered within the context of the Government's policy on sustainable development.

4.1.8 In relation to the mitigation and minimisation of adverse impacts, NPSE considers that *'in reality, although not always stated, the aim has tended to be to minimise noise 'as far as is reasonably practical'*. This is reinforced in Paragraph 2.24 of the Explanatory Note, which requires that '*all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development. This does not mean that such adverse effects cannot occur'*.

4.1.9 In relation to explaining the 'significant adverse' and 'adverse' effects quoted in the NPPF, NPSE uses the two established concepts from toxicology that are currently being applied to noise impacts, for example by the World Health Organisation (WHO), these are:

- NOEL – No Observed Effect Level. This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to noise.
- LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected.

4.1.10 The NPSE then extends these concepts to lead to a SOAEL – Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.

4.1.11 No specific criteria are presented in the NPSE, to provide the necessary policy flexibility until further evidence and suitable guidance is available. The main potential for noise impact associated with operations at the application site are considered to be through subjective effects such as annoyance. To assess these effects, an absolute noise level assessment has been considered. In lieu of specific criteria in the NPSE, for the assessment, reference is made to existing guidance, which is summarised under the headings below.

4.1.12 An absolute noise level assessment is where the noise level associated with the activity being assessed is considered against guidelines based on noise level-community dose relationships, whereby a given noise level will invoke a degree of disturbance or annoyance to a specific percentage of people. The absolute noise level assessment criteria used in this report are the World Health Organisation (WHO) Guidelines for Community Noise.

4.2 NATIONAL PLANNING PRACTICE GUIDANCE: NOISE

4.2.1 Guidance provided in the National Planning Practice Guidance (NPPG) for noise, presents a table of noise exposure hierarchy, which relates the NOEL, LOAEL and SOAEL levels to the subjective perception of noise and examples of outcomes (reproduced in Table 4.1 below).

Table 4.1: Summary of noise exposure hierarchy (from NPPG, Noise)

Perception	Examples of Outcomes	Increasing 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	No specific measures required
		Lowest Observed Adverse Effect Level	
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	
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 disruptive	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

4.2.2 When considering the factors that influence whether noise could be a concern, the NPPG considers that 'the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected'. This includes factors such as the source and absolute level of the

noise, the time of day it occurs, the number of noise events and the frequency and pattern of occurrence.

4.3 WORLD HEALTH ORGANISATION GUIDELINES FOR COMMUNITY NOISE

4.3.1 The World Health Organisation Guidelines for Community Noise (WHO Guidelines, 1999) considers that for the restorative process of sleep, internal bedroom levels should not exceed 30 dB $L_{Aeq,23:00-07:00}$. Additionally, discrete event maxima should not regularly exceed 45 dB L_{AFmax} internally.

4.3.2 For speech intelligibility during the daytime and evening period, internal living room levels should not exceed 35 dB $L_{Aeq,07:00-23:00}$.

4.3.3 The WHO Guidelines advises that to protect the majority of people from being seriously annoyed during the daytime, the steady continuous noise should not exceed 55 dB $L_{Aeq, 16\ hour}$ and to protect the majority of people from being moderately annoyed during the daytime the outdoor sound level should not exceed 50 dB $L_{Aeq, 16\ hour}$.

4.4 SEMANTIC DESCRIPTOR SCALES

4.4.1 Semantic descriptor scales have been used for many years to assess noise impact. These assessments take the form of comparing the L_{Aeq} noise levels with and without the activity under assessment. No single standard scale has as yet been formally agreed.

4.4.2 Notwithstanding this, a joint Institute of Acoustics / Institute of Environmental Assessment working party presented in 1999 a document outlining a standard approach. This document presents a scale which shows varying degrees of noise change for a given description of the impact (reproduced in the table below for reference).

4.4.3 It should be noted that many other semantic descriptor scales have been used for noise impact assessments associated with planning applications and planning appeals. Commonly, the '*slight impact*' category, which covers an increase of > 0 to < 3 decibels is broken down further, with an increase of ≤ 1 decibel being categorized as negligible. This is considered an appropriate sub-division within this category, especially in the context that PPG 24 (now superseded) considers that a change of 3 dB(A) is the minimum perceptible to the human ear under normal conditions.

Table 4.2: Noise change categories (Proc. of the Institute of Acoustics, Volume 21 Part 3, 1999)

Noise Change (dB)	Category
0.0	No impact
0.1 – 2.9	Slight impact
3.0 – 4.9	Moderate impact
5.0 – 9.9	Substantial impact
10.0 and more	Severe impact

SECTION 5 NOISE IMPACT ASSESSMENT

5.1 INTRODUCTION

5.1.1 The potential sources of noise associated with the child minders are considered to be:

i. Transport noise associated with the dropping off and collection of children.

ii. Breakout noise to the attached dwelling (No. 44) associated with the internal use of the dwelling as a child minders.

iii. Breakout noise associated with the use of the external decking area.

5.1.2 The potential noise impacts are considered in the following paragraphs.

5.2 TRANSPORT NOISE

5.2.1 As stated, children are dropped off/collected at the front of the property, with parents asked to drop off and collect at set times to control the flow of arrivals/departures.

5.2.2 In order to assist with this element of the assessment, during a typical week, Mrs Taylor was asked to record the number of vehicles dropping off/collecting from the child minders, as well as vehicles dropping of at the school before and after club and through traffic on Birmingham Lane. The survey was undertaken over a number of days and between 07:30 to 08:45 in the morning and 16:00 to 17:30 in the evening (out of school opening hours, i.e. when the potential impact of the movements to the child minders is highest). The results of the survey are reported in Table 5.1.

Table 5.1: Survey of Vehicle Activity on Birmingham Lane (vehicle count)

Date	Time Period	Sticks & Stones	Before/After School Club	Drive Past	Total non Sticks & Stones Vehicles	Total Vehicles
24/3/25	07:30-08:45	8	34	85	119	127
24/3/25	16:00-17:30	6	20	105	125	131
26/3/25	07:30-08:45	8	34	109	143	151
28/3/25	16:00-17:30	5	19	65	84	89

5.2.3 Based on the data contained in Table 5.1, during the survey periods, approximately 5% - 6% of the traffic using Birmingham Lane was associated with the child minders operations.

5.2.4 To put this in context, the drop offs/collections associated with the child minders equates to a circa. 0.3 dB increase in decibel level over the scenario where the child minders is not operating ($10*\log_{10}((127/119)$ = 0.3 dB). With reference to the semantic descriptor scales detailed in Para. 4.4.3 and Table 4.2, the impact is assessed as negligible.

5.2.5 Based on the above and with reference to the NPPG for noise (Section 4.2), the level of impact is considered to represent a No Observed Adverse Effect Level (NOAEL). Examples of outcomes for which are '*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'*. The associated action for a NOAEL is *'no specific measures required'*.

5.3 BREAKOUT NOISE TO THE ATTACHED DWELLING

5.3.1 The extent to which airborne noise generated in the child minders is transmitted through the separating wall between the two dwellings depends on the sound insulation performance of the separating wall and the activity noise levels in the child minders. Note: the 1st floor bedroom has not been included in the assessment as it is used for sleep time.

5.3.2 Mrs Taylor contacted the owner of No.44 to ask whether they would be amenable to an airborne sound insulation test of the separating wall being undertaken (the test requires access to both sides of the wall). There was no response to the request.

5.3.3 In lieu of a sound insulation test, it has been necessary to predict the airborne sound insulation performance of the separating wall based on knowledge of the as built construction and RPAs experience of sound insulation testing and separating wall performance (RPA is registered with the Sound Insulation Testing & Measurement Association).

5.3.4 The separating wall construction is understood to consist of the original masonry wall, upgraded with an independent timber frame off-set from the original wall by 100 mm, with 100 mm acoustic mineral wool insulation in the void and a lining of 2 x 12.5 mm acoustic (dense) plasterboard with staggered joints.

5.3.5 To predict the sound insulation performance of the wall, reference has been made to the British Gypsum (BG) White Book, which details different construction types and the associated laboratory derived sound insulation performance (in terms of $R_w + C_{tr}$). The closest construction type is a masonry wall with a Gyplyner Universal lining channel, 85 mm void, 50 mm mineral wool insulation and 2 x 12.5 mm SoundBloc plasterboard (see Figure 5.1). Note: the Gyplyner Universal system attaches to the masonry wall. As such, there is a degree of bridging between the masonry wall and the lining channel. As the construction at the child minders is an independent timber frame, it would be anticipated for perform better than the BG system.

5.3.6 With reference to Figure 5.1. the laboratory sound insulation performance of the BG system is 59 dB $R_w + C_{tr}$. As such, the as built construction would be anticipated to perform at ≥ 59 dB $R_w + C_{tr}$. The 'real world' performance is measured in terms of $D_{nT,w} + C_{tr}$ (as used in the Building Regulations) and takes into account flanking transmission paths. Typically, the $D_{nT,w} + C_{tr}$ is five to seven decibels lower than the $R_w + C_{tr}$ value. On this basis, the predicted performance of the separating wall is ≥ 53 dB $D_{nT,w} + C_{tr}$.

Figure 5.1: British Gypsum GypLyner Universal Sound Insulation Performance



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Solid block wall (100mm), of density 1700 kg/m³ with 13mm plaster each side. Gypframe GL1 Lining Channel framework fixed to one side to give 85mm cavity. Cavity filled with 50mm Isover Acoustic Partition Roll (APR 1200). Linings as in table.

Detail	Board type	Lining thickness mm	Sound insulation R_w ($R_w + C_{tr}$) dB
1	Gyproc SoundBloc	1 x 12.5	49 (43)
2	Gyproc SoundBloc	1 x 12.5	57 (50)
3	Gyproc SoundBloc	1 x 12.5	60 (42)
4	Gyproc SoundBloc	1 x 12.5	57 (50)
4	Gyproc SoundBloc	2 x 12.5	60 (55)
5	Gyproc SoundBloc	1 x 12.5	64 (56)
5	Gyproc SoundBloc	2 x 12.5	66 (59)

5.3.7 In order to predict the level of noise in No. 44 associated with activity in No. 42, the following equation has been used:

$$SPL_2 = SPL_1 - R + 10\log S_p - 10\log A \qquad (i)$$

where:
SPL_2 is the reverberant sound pressure level in the receiving room (No. 44) (dB).
SPL_1 is the average sound pressure level on the source side (activity level – see Table 3.1) (dB).
R is the sound reduction index of the partition (taken as 53 dB $D_{nT,w} + C_{tr}$, see Para. 5.3.6) (dB)
S_p is the area of the partition (calculated as 18 m^2 off plan) (m^2).
A is the total absorption in the receiving room (taken as 10 m^2 for a standard furnished room) (m^2).

5.3.8 Solving for SPL_2 using an activity noise level of 60 dB $L_{Aeq,T}$ (see Table 3.1), the predicted noise level in the room of No. 44 adjacent to the separating wall is 10 dB $L_{Aeq,T}$.

5.3.9 To put this level of noise in context, the WHO Guidelines (Section 4.3) considers that for speech intelligibility during the daytime and evening period, internal living room levels should not exceed 35 dB $L_{Aeq,07:00\text{-}23:00}$. Given that the decibel scale is logarithmic, a level of 10 dB $L_{Aeq,T}$ is significantly below the guideline level and is at a level where the noise would be masked by general noise in a typical house (urban noise entering through the windows etc).

5.3.10 Solving for SPL_2 using an activity discrete event maxima noise level of 83 dB L_{AFmax} (see Table 3.1), the predicted discrete event maxima activity noise level in the room of No. 44 adjacent to the separating wall is 33 dB L_{AFmax}.

5.3.11 Whilst the WHO Guidelines do not set a discrete event maxima criterion during the daytime, the guidelines state that for the restorative process of sleep, discrete event maxima should not regularly exceed 45 dB L_{AFmax} during the night time. To put this level of noise in context, subjectively, a 10 dB reduction in noise level equates to a halving of loudness. As such the predicted discrete event

maxima in No. 44 associated with activity in No. 42 is half as loud as the criterion required for the restorative process of sleep.

5.3.12 Based on the above and with reference to the NPPG for noise (Section 4.2), the level of impact is considered to represent a No Observed Adverse Effect Level (NOAEL). Examples of outcomes for which are '*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'*. The associated action for a NOAEL is *'no specific measures required'*.

5.3.13 It should also be noted that, whilst the number of children being minded fluctuates during the day and on a daily basis, the assessment is considered robust. The activity noise level of 60 dB $L_{Aeq,T}$ used for the assessment was based on eight children being minded. Doubling the number of children present (to 16 children) would result in a 3 dB increase in the average activity noise level (10 x $\log_{10}(16/8)$ = 3 dB), which would result in a predicted noise level in the room of No. 44 adjacent to the separating wall of 13 dB $L_{Aeq,T}$. This level of increase is insignificant in the context of the assessment detailed in Para. 5.3.9. An activity discrete event maxima noise level of 83 dB L_{AFmax} was used for the assessment. This level is not related to the number of children present.

5.4 BREAKOUT NOISE ASSOCIATED WITH THE USE OF THE EXTERNAL DECKING AREA

5.4.1 Activity noise levels on the external decking area were measured at 53 dB $L_{Aeq,T}$ with the sound level meter located circa. 3 metres from the area of play.

5.4.2 The decking area has a solid vertical barrier on the side of the decking adjacent to the boundary hedge with No. 44. Additionally, the rear garden to No. 44 was noted to be landscaped in the vicinity of the boundary hedge between the two dwellings, with a seating area located circa 15 metres from the boundary.

5.4.3 The predicted activity noise level at the outdoor seating area of No. 44 has been based on point source propagation characteristics (with a 6 decibel reduction per doubling of distance, i.e. DA = 20 $\log(r_2/r_1)$, where r_1 is the distance to reference measurement position (3 metre in this case) and r_2 is the distance to the receptor (15 metres in this case)). Additionally, 10 dB of screening attenuation has been allowed for, based on the BS 5228:2009 Part 1 guidance '*In the absence of spectral data, as a working approximation, if there is a barrier or other topographic feature between the source and the receiving position, assume an approximate attenuation of 5 dB when the top of the plant is just visible to the receiver over the noise barrier, and of 10 dB when the noise screen completely hides the sources from the receiver. High topographical features and specifically designed and positioned noise barriers could provide greater attenuation*.'

5.4.4 The predicted activity noise level at the outdoor seating area of No. 44 has been calculated at 29 dB $L_{Aeq,T}$ (53 – 20log(15/3) – 10 = 29).

5.4.5 This level of noise is significantly below the WHO Guidelines external criterion for the onset of moderate annoyance of 50 dB $L_{Aeq,\ 16\ hour}$ and should also be considered in the context of the character of the neighbourhood, which includes a primary school and before and after school club in the immediate vicinity.

5.4.6 Based on the above and with reference to the NPPG for noise (Section 4.2), the level of impact is considered to represent a No Observed Adverse Effect Level (NOAEL). Examples of outcomes for which are '*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'*. The associated action for a NOAEL is *'no specific measures required'*.

SECTION 6 CONCLUSIONS

6.1 An assessment has been undertaken of the potential impacts of noise associated with the change of use to form a mixed use dwellinghouse and child minders at 42 Birmingham Lane, Meltham, HD9 5LH.

6.2 The assessment has considered (i) transport noise associated with the dropping off and collection of children, (ii) breakout noise to the attached dwelling, and (iii) breakout noise associated with the use of the external decking area.

6.3 On the basis of the assessment detailed in this report, noise is not considered to represent a constraint to the development and the level of impact is considered to represent a No Observed Adverse Effect Level (NOAEL). Examples of outcomes for which are '*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'*. The associated action for a NOAEL is *'no specific measures required'*.

6.4 Notwithstanding the above, a Noise Management Plan (NMP) has been prepared to set out the procedures to be adopted to control noise emissions associated with the use as a child minders. The business is considered to be well managed and the NMP is based around procedures that are already in place to control noise.

APPENDIX 1 ▪ Glossary of Acoustic Terms

Appendix 1
Glossary of Acoustic Terms

Sound Pressure Level (L_p)

The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 µPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$L_p = 20 \log_{10}(p/p_0)$

Where L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_0 = reference sound pressure (20 µPa).

A-weighting Network

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$

The value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T, has the same mean-square sound pressure as a sound that varies with time. $L_{Aeq, 16h}$ (07:00 to 23:00 hours) and $L_{Aeq, 8h}$ (23:00 to 07:00 hours) are used to qualify daytime and night time noise levels.

$L_{A10, T}$

The A-weighted sound pressure level in decibels exceeded for 10% of the measurement period, T. $L_{A10, 18h}$ is the arithmetic mean of the 18 hourly values from 06:00 to 24:00 hours.

$L_{A90, T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T. L_{A90} is typically taken as representative of background noise.

$L_{AF\ max}$

The maximum A-weighted noise level recorded during the measurement period. The subscript 'F' denotes fast time weighting, slow time weighting 'S' is also used.

Sound Exposure Level (SEL or L_{AE})

The energy produced by a discrete noise event averaged over one second, no matter how long the event actually took. This allows for comparison between different noise events which occur over different lengths of time.

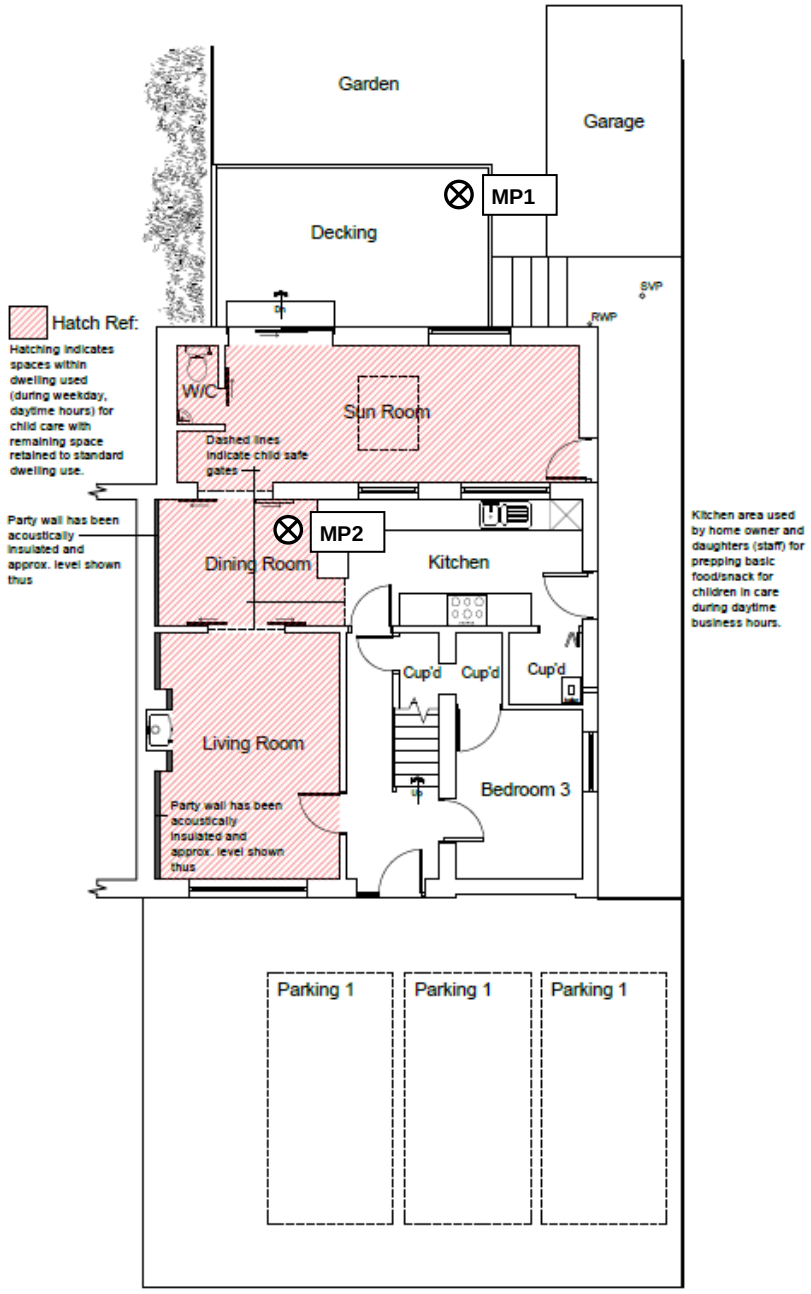
APPENDIX 2

- Annotated Aerial Site Image
- Layout Plans

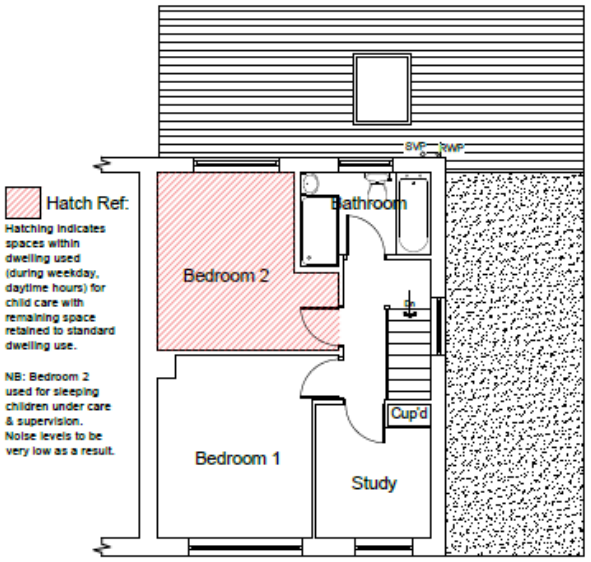
Appendix 2.1: Annotated Aerial Site Image



Appendix 2.2: Layout Plans



Ground Floor Plan



First Floor Plan

APPENDIX 3 ▪ Noise Management Plan

STICKS & STONES CHILD MINDERS

42 BIRMINGHAM LANE, MELTHAM, HD9 5LH

NOISE MANAGEMENT PLAN

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SECTION 1 INTRODUCTION

1.1 This Noise Management Plan (the plan) is dated _____ and has been produced by M Taylor, Sticks & Stones, 42 Birmingham Lane, Meltham, HD9 5LH.

1.2 Sticks and Stones provides child minding services from 07:30 to 17:30 hours Monday to Friday.

1.3 The purpose of the plan is to detail the procedures to be taken by Sticks & Stones in order to minimise the impact of noise breakout from the child minding business on local noise sensitive receptors.

SECTION 2 CONTROL MEASURES

2.1 **ON ARRIVAL AND DEPARTURE**

2.1.1 Service users to be provided with a specific drop off and pick up time, to control the flow of arrivals/departures and minimise the potential noise impact by staggering traffic movements.

2.2 **DURING STAY**

2.2.1 For the duration of the use as a child minding business, the following noise control measures will be retained:

i. Provision of three parking spaces in the garden area to the front of the premises.

ii. Acoustic wall linings to the separating wall with No. 44 at ground floor level to control airborne noise transmission.

iii. Provision of rugs on hard floor finishes to control footfall noise.

iv. Sliding doors as interconnecting doors between the living room, dining room and sun room.

v. Provision of baby gates in the doorways to stop children running between rooms.

vi. Provision of a solid vertical barrier on the side of the decking adjacent to the boundary hedge with No. 44.

SECTION 3 COMPLAINTS MANAGEMENT

3.1 Sticks & Stones will maintain a record of noise related complaints on site (whether from the Council or another party).

3.2 Sticks & Stones will investigate each noise complaint, and consider the activity and any relevant circumstances that may have led to the complaint.

3.3 Sticks & Stones will aim to respond to all justified noise complaints within 48 hours.

SECTION 4 NOISE MANAGEMENT PLAN REVIEW MECHANISM

4.1 The Noise Management Plan will be reviewed annually.