



ACOUSTIC CONSULTANTS LTD

Proposed Residential Development
2A Randolph Road, Reading

Noise Impact Assessment

Reference: 6772/CG/PP

July 2017



Proposed Residential Development
2A Randolph Road, Reading

Noise Impact Assessment

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Table of Contents

1.	Introduction	4
2.	The Site	5
3.	Planning and Noise	6
4.	Assessment Methodology	10
5.	Noise Monitoring	13
6.	Building Façade Construction	17
7.	External Amenity Areas	22
8.	Limitations	23
9.	Summary and Conclusions	24



1. Introduction

Rabia Fazli appointed Acoustic Consultants Limited to carry out a site noise monitoring survey and a noise assessment to British Standard 8233:2014, to support a planning application for the proposed development at 2A Randolph Road in Reading.

The development comprises three flats; two at ground floor level and one at first floor level, within the envelope of the existing building extension.

The purpose of this assessment is to address the noise climate affecting the proposed development, including road traffic noise and noise from the nearby petrol filling station. The local authority have specifically requested the noise impact from the latter to be considered.

The following drawings have been supplied by the client and form the basis of our assessment.

Table 1: Architect's drawings

Title	Number	Revision	Date
Existing Floor Plans	AG13589/310	B	Sept 2015
Existing Elevations & Location Plan	AG13589/300	E	Sept 2015
Proposed Floor Plans	AG13589/410	F	Sept 2015
Proposed Elevations & Block Plan	AG13589/301	E	Sept 2015

The noise impact assessment has been undertaken in accordance with the guidance in the National Planning Policy Framework (NPPF), Noise Policy Statement for England (NPSE), National Planning Practice Guidance (NPPG) and British Standard 8233:2014 (BS8233).

The author of this report is an Associate Member of the Institute of Acoustics (AMIOA), with an appropriate acoustic qualification. The report has been overseen by a full corporate member of the same (MIOA), with ten years' experience within the field, whom as such is considered suitably qualified to undertake a noise impact assessment.

The report is based upon noise level data measured on the development site and reasonable assumptions. This report limits itself to addressing solely on the noise aspects as included herein and is intended for planning purposes only.



2. The Site

The site is at 2A Randolph Road, Reading. The building is a two-storey building with residential at first floor and commercial at ground floor (A3 use). The existing building is to be retained and extended to form two new ground floor flats and one first floor flat.

The site is in a mixed residential and commercial area. The main sources of noise affecting the proposed development are road and noise from the adjacent filling station. The site location is provided below.

Figure 1: Aerial view of site and immediate surroundings





3. Planning and Noise

3.1. National Planning Policy Framework

The National Planning Policy Framework (NPPF) was published in March 2012 and replaces the withdrawn Planning Policy Guidance Document 24 entitled 'Planning and Noise'. Section 11 entitled 'Conserving and enhancing the natural environment' addresses noise as a requirement of planning.

Paragraph 109 states:

"109. The planning system should contribute to and enhance the natural and local environment by:

- preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability."*

Paragraph 123 states:

"123. Planning policies and decisions should aim to:

- avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;*
- mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;*
- recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and*
- identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."*

The document does not prescribe any assessment methodology or criteria to assess the adverse effect of noise.



3.2. Noise Policy Statement for England

The NPPF refers to the Noise Policy Statement for England (NPSE). This was published in March 2010 and aims to provide clarity regarding current policies and practices to enable noise management decisions to be made within the wider context, at the most appropriate level, in a cost-effective manner and in a timely fashion and applies to all forms of noise including environmental noise, neighbour noise and neighbourhood noise.

The NPSE sets out the long term vision of Government noise policy. This long-term vision is supported by three noise policy aims as follows:

“Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- *avoid significant adverse impacts on health and quality of life;*
- *mitigate and minimise adverse impacts on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life.”*

The NPSE introduces the concept of ‘Significant Adverse’ and ‘Adverse’ impacts of noise which relate to the noise policy aims. These are applied as follows:

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 the noise.

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur.

The Noise Policy Statement for England (NPSE) states that noise levels above the Lowest Observed Adverse Effect Level are acceptable in planning where reduced to a minimum.



With regard to where there is potential for noise impact it states the following in relation to the second noise policy aim:

"The second aim of the NPSE refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It 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 (paragraph 1.8). This does not mean that such adverse effects cannot occur."

The NPSE does not provide any assessment criteria for the noted effect levels and each case must be considered on its merits. The NPSE does, however, emphasise that in dealing with noise Local Planning Authorities are required to take a balanced approach in considering the benefits of development as against any adverse effects which arise. Paragraph 2.18 of the NPSE is particularly relevant in this respect and states:

"There is a need to integrate consideration of the economic and social benefits 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 focusing solely on the noise impact without taking into account other related factors."

The planning need is outside the scope of noise and acoustics and will need to be addressed by others.

3.3. National Planning Practice Guidance, Noise

The National Planning Practice Guidance (NPPG) on noise referred to here is based on the current version (January 2015) as provided on the Planning Guidance Website. It states that *"Noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment."*

It provides generic guidance on how to determine the noise impact and what factors could be a concern.

It includes the option types to mitigate any adverse effects of noise stating that there are four broad types of mitigation. These are engineering, layout, using planning conditions or obligations, and noise insulation.



Paragraph 5 of the NPPG provides a table identifying the effect level and examples of effect relating to the impact effect levels provided in the NPSE. The table is duplicated below:

Table 2: NPPG Noise – Perception of Effect Levels

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

The table does not provide any objective assessment which equates to the noted effect levels however the NPPG identifies that where noise is audible it is not necessarily intrusive. The effect and impact on people is based primarily on the level of noise.



4. Assessment Methodology

4.1. Local Authority Comments

Reading Borough Council has provided a pre-application response, reference 152264/PREAPP. This includes the following comment regarding noise affecting the proposed development.

"Noise impact on development

"The site is located in close proximity to a 24 hour petrol station, therefore there is potential for noise from this to impact on the new residents. Further information will need to be submitted with the full application regarding what the noise insulation properties are of the building and whether this will be upgraded. A noise assessment may be necessary (refer to BS8233:2014).

"The noise assessment would be assessed against the recommendations for internal noise levels within dwellings and external noise levels within gardens / balconies in accordance with BS 8233:2014 and WHO guidelines for Community Noise. The report should identify any mitigation measures that are necessary to ensure that the recommended standard is met.

"Where appropriate, the noise assessment data should also include noise events (L_{AMax}) and the design should aim to prevent noise levels from noise events exceeding 45dB within bedrooms at night. Noise levels above 45dB are linked with sleep disturbance.

"Internal noise criteria (taken from BS8233:2014)

Room	Design criteria	Upper limit
Bedrooms (23:00 to 07:00)	<30dB LAeq,8hour	
Living rooms (07:00 – 23:00)	<35dB LAeq,16hour	
Gardens & Balconies	<50dB LAeq,T	<55dB LAeq,T

"It may be possible though [sic] clever design to reduce the need for additional noise mitigation measures, for example, ensuring that noise sensitive rooms are located on the quieter façades and bathrooms, kitchens, hallways and cupboards etc on the noisiest facades.



"Noise mitigation is likely to focus on the weak point in the structure; glazing. Given that the acoustic integrity would be compromised should the windows be opened, ventilation details must also be provided, where mitigation relies on closed windows. Ventilation measures should be selected which do not allow unacceptable noise ingress and should provide sufficient ventilation to avoid the need to open windows in hot weather, however non-openable windows are not considered an acceptable solution due to the impact on living standards."

The following section gives further detail on the relevant criteria for determining the impact of noise on the proposed residential scheme.

We would consider that where these criteria can be achieved, noise is below the Lowest Observed Adverse Effect Level (LOAEL) of the NPSE and NPPG and as such it will be suitably controlled.

4.2. British Standard 8233:2014

The local authority refer to British Standard 8233:2014 in their pre app response. The standard is entitled 'Guidance on sound insulation and noise reduction for buildings' came into effect on 28th February 2014.

Section 7.7.2 Table 4 of this standard recommends internal ambient noise levels for dwellings from noise sources 'without a specific character'. Table 2 of the standard states guideline maximum noise levels and these are summarised below.

Table 3: British Standard 8233:2014 Internal Noise Criteria

Activity	Location	Daytime (07.00 to 23.00)	Night-time (23.00 to 07.00)
Resting	Living Room	35 dB L _{Aeq, 16hr}	-
Dining	Dining Room/area	40 dB L _{Aeq, 16hr}	-
Sleeping (daytime resting)	Bedroom	35 dB L _{Aeq, 16hr}	30 dB L _{Aeq, 8hr}

Section 7.7.2 Note 4 of the British Standard states *"Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or L_{Amax,F} depending on the character and number of events per night. Sporadic noise events could require separate values"*.



The British Standard provides no definitive criteria for maximum noise levels from individual events (L_{AFmax}). Section 3.4 of the "Guidelines for Community Noise", published by the World Health Organisation in 1999 (WHO 1999), states *"For a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45 L_{Amax} more than 10-15 times per night (Vallet & Verbey 1991)"*.

As such it would be considered acceptable if the maximum noise level from individual events do not exceed 45 dB L_{AFmax} more than 10 to 15 times during the night-time period.



5. Noise Monitoring

A long-term, partially attended noise survey was conducted between 10.50 hours on Thursday 29th June and 13.30 hours on Friday 30th June 2017. The survey was undertaken in accordance with British Standard 7445.

5.1. Equipment

Sound pressure levels were measured using two Class 1 sound level meters with half-inch condenser microphones, using the 'fast' setting. The equipment is checked regularly using a Quality System meeting the requirements of British Standard EN ISO/IEC 17025:2005, and in accordance with British Standard EN 10012:2003, and traceable to the National Standards.

This equipment was checked and calibrated as noted below and the certificates are available for inspect upon request. Table 4 provides the equipment and calibration status.

Table 4: Equipment and Calibration Status

Equipment Description / Manufacturer / Type	Serial number	Date of calibration	Calibration Certification Number
Sound Level Meter, Cirrus Research, CR:171C	G079832	19/06/2017	250282
Calibrator, Cirrus Research, CR:515	80569	05/05/2017	112613
Microphone, Cirrus Research, MK224	209563D	16/04/2017	112614
Sound Level Meter, Cirrus Research, CR:171C	G071684	26/06/2017	250502
Calibrator, Cirrus Research, CR:515	73217	13/09/2016	107762
Microphone, Cirrus Research, MK224	606369B	23/06/2017	112732

A field calibration check was performed on the measurement systems before and after use with the noted calibrators, and no drift exceeding 0.26 dB was detected.

5.2. Weather Conditions

During the noise survey the weather conditions were dry throughout, with a temperature of up to 22 degrees centigrade, with little or no wind at the monitoring locations. The weather conditions are not expected to have affected the measured data.

5.3. Monitoring Procedure

A partially attended monitoring exercise was undertaken at the locations marked on the figure below. At location A, the microphone was positioned one metre from the building façade at ground floor level. At location B, the microphone was mounted on a tripod at a height of 1.5 metres above ground, again in a façade position.

Figure 2: Monitoring locations



5.4. Measured Noise Levels

The main noise source affecting monitoring location A was road traffic noise, principally from the A4155 Caversham Road.

Monitoring location B was affected by noise from the adjacent filling station, including that of vehicles arriving and departing, that of the fuel pumps and that of the jet wash, and road traffic noise.

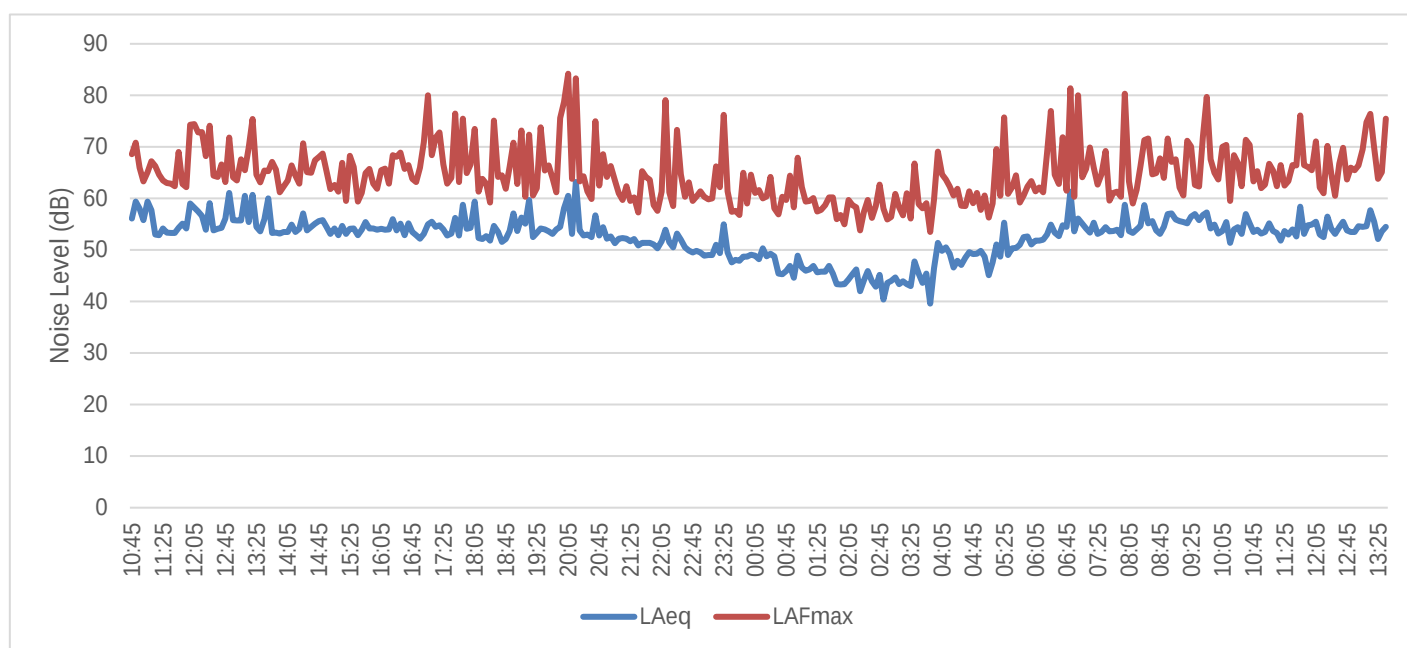


Chart 1 and 2 below provides the measured noise level over the measurement period at each location.

Monitoring Location A

At monitoring location A, the main noise source affecting the monitoring location is from road traffic at A4155 Caversham Road. The chart below provides the measured noise level over the measurement period at monitoring location A.

Chart 1: Measured Noise levels at Monitoring Location A (Façade Level)



From the measured data, we have determined the following façade-level octave-band design daytime and night-time equivalent noise levels, and night-time maximum noise levels at monitoring location A:

Table 5: Measured octave-band design noise levels (façade level) at location A

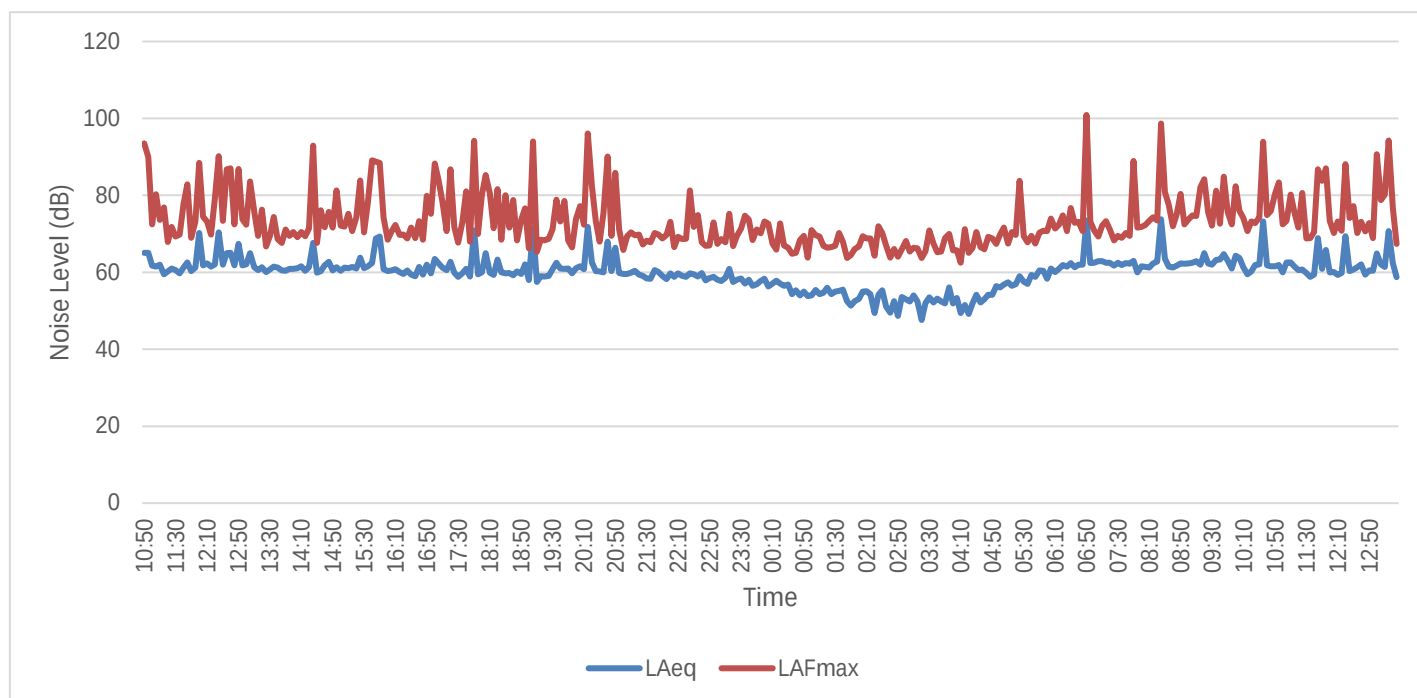
Parameter	Octave band centre frequency [Hz]								Overall A-weighted
	63	125	250	500	1000	2000	4000	8000	
Day $L_{eq, 16hr}$ [dB]	65	57	53	51	51	47	38	29	55
Night $L_{eq, 8hr}$ [dB]	58	50	47	45	46	43	37	34	50
Night L_{Fmax} [dB]	84	77	60	64	56	48	41	33	66



Monitoring Location B

Monitoring location B was predominantly affected by noise from the adjacent filling station, including that of vehicles arriving and departing, that of the fuel pumps and that of the jet wash. This location was also affected by distance road traffic noise from A4155. The chart below provides the measured noise level over the period at monitoring location B

Chart 2: Measured Noise levels at Monitoring Location B (Façade Level)



From the measured data, we have determined the following façade-level octave-band design daytime and night-time equivalent noise levels, and night-time maximum noise levels at monitoring location B:

Table 6: Measured octave-band design noise levels (façade level) at location B

Parameter	Octave band centre frequency [Hz]								Overall A-weighted
	63	125	250	500	1000	2000	4000	8000	
Day $L_{eq, 16hr}$ [dB]	70	65	59	57	60	56	46	37	63
Night $L_{eq, 8hr}$ [dB]	62	58	52	51	56	51	38	28	59
Night L_{Fmax} [dB]	82	77	73	72	68	61	52	42	73



6. Building Façade Construction

In accordance with the design guidance in British Standard 8233:2014 it will be necessary to design the building fabric of the residential properties to control the equivalent noise level and maximum noise levels internally.

The façades (including walls, windows, doors and roof) of the habitable rooms are exposed to noise from road traffic and the filling station, and they will require specific noise mitigation measures.

Internal ambient noise level prediction calculations have been carried out using the measured $L_{Aeq, T}$ and L_{AFmax} sound level spectra noted above.

The internal ambient noise levels have been predicted in accordance with the method of Annex G.2 of British Standard 8233:2014.

The predicted internal noise levels are those which would be expected in a typically furnished room having a standardised reverberation time of 0.5 seconds.

We advise that building elements, having the sound insulation performances noted below, be incorporated into the design of the façades including the windows, doors and roof.

6.1. External Wall

From our observations on site, the existing external walls are believed to be of solid masonry (i.e. brick) construction. These are to be retained in the development. We would expect this construction will achieve a minimum mass of 360 Kg/m². This construction is expected to achieve the following minimum sound reduction indices (SRIs).

Table 7: Expected sound reduction indices of existing external wall

Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000
Sound reduction index [dB]	31	36	41	42	47	51	51	51



6.2. Roof Construction

The existing roof is in three distinct sections: a mono-pitched section to the front of the building, covering the two-storey section, a flat roof to the centre, and a profile metal pitched roof to the rear section.

Mono Pitched Roof

The mono pitched roof should be upgraded to comprise of the following:

- Concrete tiles (density to be at least 20kg/m²) on rafters
- Roof void with at least 50mm of mineral wool in the roof void
- Plasterboard ceiling fitted to underside of ceiling joists of two layers of 12.5mm Soundbloc (density at least 20 Kg/m²)

This roof is expected to achieve the following minimum sound reduction indices.

Table 8: Required minimum sound reduction indices of Mono Pitch roof

Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000
Sound reduction index [dB]	19	24	33	40	45	49	49	49

Flat Roof

The mono pitched roof should be upgraded to comprise of the following:

- External skin of at least 108mm plywood or similar rigid board (density to be at least 10kg/m²) on rafters
- Cavity of at least 150mm with 50mm of mineral wool in the cavity.
- Plasterboard ceiling fitted to underside of ceiling joists of two layers of 12.5mm Soundbloc (density at least 20 Kg/m²)

This roof is expected to achieve the following minimum sound reduction indices.

Table 9: Required minimum sound reduction indices of Flat Roof

Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000
Sound reduction index [dB]	19	24	33	40	45	49	49	49



Profile Metal Roof

The profile metal pitched roof should be upgraded to comprise of the following:

- External façade of a density to be at least 10kg/m²) on rafters, this could comprise of 18mm plywood fitted to the underside of the metal roof.
- Roof void with at least 50mm of mineral wool in the roof void
- Plasterboard ceiling fitted to underside of ceiling joists on British Gypsum resilient bars of two layers of 12.5mm Soundbloc (density at least 20 Kg/m²)

This roof is expected to achieve the following minimum sound reduction indices.

Table 10: Required minimum sound reduction indices of Mono Pitch roof

Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000
Sound reduction index [dB]	20	30	44	52	59	69	62	52

6.3. Windows and Glazed Doors

The windows and glazed doors on all elevations could be openable, however, they need to be sealed airtight to control external noise. There should be no un-attenuated vents or openings in the building façade. The window constructions and minimum sound reduction indices are noted below.

Flat 2 Bedroom 1 and 2

The windows opening to habitable rooms on flat 2 bedroom 1 and 2 should be selected to achieve the following minimum sound reduction indices:

Table 9: Required minimum sound reduction indices of windows

Octave Band [Hz]	125	250	500	1000	2000	4000
Sound reduction index [dB]	26	27	34	40	38	46

This typically equates to a sound reduction rating of 38 dB R_w and can be achieved by using 10mm glass, 12mm cavity, and 6mm glass.

Alternative constructions may achieve the performance noted above. The supplier should provide test data confirming that the sound reduction indices and sound reduction rating (R_w) is achievable.



All Other Elevations

The windows opening to habitable rooms on all other elevations should be selected to achieve the following sound reduction indices:

Table 9: Required minimum sound reduction indices of windows

Octave Band [Hz]	125	250	500	1000	2000	4000
Sound reduction index [dB]	26	27	34	40	38	46

This typically equates to a sound reduction rating of 31 dB Rw. This can be achieved by using 4 millimetres glass, 12 millimetre cavity, and 4 millimetre glass.

6.4. Access Door to Flat 2 Courtyard Garden

It is noted from the supplied drawings that this door leads directly from Bedroom 1 to the external amenity space. This presents a weak point in terms of noise ingress. The door should be selected to achieve the following minimum sound reduction indices:

Table 10: Required minimum sound reduction indices of door

Octave Band [Hz]	125	250	500	1000	2000	4000
Sound reduction index [dB]	26	27	34	40	38	46

This typically equates to solid door of at least 40 Kg/m² with acoustic seals. Alternative constructions may achieve the performance noted above. The supplier should provide test data confirming that the sound reduction indices are achievable.

6.5. Ventilation Provisions

Flat 2 Bedrooms

The Bedrooms of Flat 2 should be ventilated via a mechanical system. The system should be selected to achieve a sound level difference outside to inside of at least 35 dB(A).



All other rooms

The habitable rooms of the development will need to be ventilated via attenuated means. This could consist of in-wall vents, roof vents or window-fitted acoustic trickle vents.

The vents will need to achieve the following element-normalised level difference ($D_{n,e}$) in the open position.

Table 11: Ventilation Octave Band Element Normalised Level Difference $D_{n,e}$

Octave Band [Hz]	63	125	250	500	1000	2000	4000	8000
$D_{n,e}$ [dB]	30	37	36	35	37	49	51	51

This would equate to a weighted, element-normalised level difference ($D_{n,e,w}$) in the open position of 36 dB. The supplier should provide test data confirming that the above weighted, element-normalised level difference $D_{n,e,w}$ is achievable with the vent in the open position.

6.6. Effect of Mitigation Measures

With the noted building fabric construction, and suitable ventilation provisions, the predicted internal noise levels within the proposed dwellings are within the criteria of British Standard 8233:2014 of 35 dB $L_{Aeq, 16hr}$ in the daytime rooms, and 30 dB $L_{Aeq, 8hr}$, 45 dB L_{Amax} within the night-time rooms.

As such we would consider that external noise is suitably controlled and below the LOAEL of the NPPG and within the local authority requirements.



7. External Amenity Areas

The local authority have requested the noise levels within the amenity areas to be considered. The local authority have advised that the noise levels should not exceed 55dB $L_{Aeq,T}$, this criteria is based on BS8233:214 and as such we have assumed it is a free-field level.

We would consider the front facing amenity areas to be representative of the noise levels measured at Location A. At location A we measured a façade level equivalent noise level of 55dB $L_{Aeq,16hr}$, which would equate to a free-field level of 52 dB $L_{Aeq,16 hr}$. This easily meets the local authority and BS8233 requirements for amenity spaces.

The rear amenity area (Flat 2) is located around the side of the building to the measurements undertaken at Location B. Allowing for distance attenuation, angle of view correction, and additional barrier attenuation to the amenity space we would expect the noise levels in this amenity space to be in the region of 5 dB lower than what was measured at Location B.

At location B we measured a façade level equivalent noise level of 63 dB $L_{Aeq,16hr}$, which would equate to a free-field level of 60 dB $L_{Aeq,16 hr}$ and a level 55 dB $L_{Aeq,16 hr}$ in the amenity space. This meets the local authority and BS8233 requirements for amenity spaces.



8. Limitations

The report limits itself to addressing solely on the noise aspects as included herein. We provide advice only in relation to noise and acoustics. It is recommended that appropriate expert advice is sought on all the ramifications (e.g. CDM, structural, condensation, fire, legal, etc.) associated with any proposals in this report or as advised and concerning the appointment.

The report has been prepared in good faith, with all reasonable skill and care, based on information provided or available at the time of its preparation and within the scope of work agreement with the Client. We disclaim any responsibility to the Client and others in respect of any matters outside the scope of the above.

The report is provided for the sole use of the named Client and is confidential to them and their professional advisors. No responsibility is accepted to other parties.

It should be noted that noise predictions are based on the current information as we understand it and on the performances noted in this report. Any modification to these parameters can alter the predicted level. All predictions are in any event subject to a degree of tolerance of normally plus or minus three decibels. If this tolerance is not acceptable, then it would be necessary to consider further measures.



9. Summary and Conclusions

Rabia Fazli appointed Acoustic Consultants Limited to carry out a site noise monitoring survey and a noise assessment to British Standard 8233:2014, to support a planning application for the proposed development at 2A Randolph Road in Reading.

The development comprises three flats; two at ground floor level and one at first floor level, within the envelope of the existing building extension.

The purpose of this assessment is to address the noise climate affecting the proposed development, including road traffic noise and noise from the nearby petrol filling station. The local authority have specifically requested the noise impact from the latter to be considered.

A noise survey has been undertaken on the site. Using the survey results noise predictions have been undertaken to the rooms and amenity areas of the development.

With the noted building fabric construction, and suitable ventilation provisions, the predicted internal noise levels within the proposed dwellings are within the criteria of British Standard 8233:2014 of 35 dB $L_{Aeq, 16hr}$ in the daytime rooms and 30 dB $L_{Aeq, 8hr}$ and 45 dB L_{Amax} within the night-time rooms.

In addition within the amenity areas the daytime equivalent noise level is below 55 dB $L_{Aeq, 16 hr}$ and meets the local authority and BS8233 requirements for amenity spaces.

As such we would consider that external noise is suitably controlled and below the LOAEL of the NPPG.



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