

Acoustic South East



Noise Impact Assessment – Discharge of Condition

Report by: Scott Castle BSc (Hons) CEnvH, MCIEH MIOA

Date: 18/09/2026

Project: J4259

Issue 1

Site: **31-33 Perrymount, Haywards Heath. RH16 3SP**

Client: **WeBuild**

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1 Introduction and Executive Summary

Acoustic South East have been appointed to undertake an acoustic assessment to support a planning application for a discharge of condition. Mid Sussex District Council consented a scheme to add flats to the Western elevation of 31-33 Perrymount through DM/22/2303, consented on 2nd April 2025. Specifically, condition 7 requires a scheme of “appropriate acoustic protection” to be submitted in writing to the local planning authority.

The standards used within the reporting are as follows:

- BS8233:2014- Guidance on Sound Insulation and Noise Reduction for Buildings
- ProPG2017- Professional Practice Guidance on Planning & Noise
- Building Regulations, Approved Document O – Overheating
- Planning Noise Advice Document, Sussex, November 2023

A class 1 sound level meter was installed at the rear of the site in freefield conditions between 5th to 10th August 2026. The dominant sound at that position is the frequent passing of railway traffic. The results of the assessment were broadly consistent with the earlier 2019 measured data from Temple Group.

As stated, the scheme of flats has already been consented by Mid Sussex District Council and condition 7 of the decision notice requires a scheme of acoustic protection to safeguard future occupants. The condition also references thermal comfort.

To ensure that this has been addressed, the client has commissioned an overheating assessment which indicates that overheating is not likely to be an issue. Overheating is addressed using Mechanical Ventilation and Heat Recovery (MVHR) on a summer bypass, openable windows (where permissible) and a louvred façade system.

Calculations have been undertaken to demonstrate that with the clients proposed windows (Warmcore), an MVHR system and vertical louvred vents, that thermal comfort as well as acceptable internal conditions are achieved and that residents remain protected against adverse noise levels.

Based on the evidence presented, the local planning authority may discharge condition 7 of DM/22/2303 .

2 Context, Noise Criteria & Noise Assessment Methodology

2.1 Context

Mid Sussex District Council consented a scheme of flats on 2nd April 2025 under DM/22/2303. The planning consent allows for a westerly extension over seven floors, providing 31 flats.

Specifically, condition 7 of the decision notice requires that a scheme of acoustic protection is submitted to the local planning authority. The condition, for ease of transparency is replicated below:

7. Prior to the commencement of the development hereby permitted, details of a scheme of appropriate acoustic protection, based on the Noise impact Assessment by Temple Group Ltd, ref: T7220, dated 26th May 2022, shall be submitted and approved in writing by the Local Planning Authority. Unless otherwise agreed in writing, the submitted scheme shall demonstrate that the maximum internal noise levels in bedrooms in residential properties post construction will be 30 dB LAeq T (where T is 23:00 - 07:00), and maximum internal noise levels in living rooms will be 35 dB LAeq T (where T is 07:00 - 23:00). Noise from individual external events typical to the area shall not exceed 45dB L_{Amax} when measured in bedrooms internally between 23:00 and 07:00 hours, post construction. Where the internal noise levels will be exceeded by more than 5dB with windows open, then the applicant shall submit details of an alternative means of ventilation with sufficient capacity to ensure the thermal comfort of the occupants with windows closed, which maintaining the required noise levels. All works which form part of the approved scheme, shall be completed before any part of the development is occupied.

The reporting therefore focuses on information sufficient to satisfy condition 7. The consented layouts are presented in Appendix A.

2.2 Condition 7

It is noted that the wording of condition 7 intimates that there should not be any L_{Amax} events above 45dB for a bedroom setting, which is contrary to the Planning Noise Advice Document Sussex (November 2023) which Mid Sussex District Council are signatories to. Through discussion with Nicholas Bennett, Senior EHO at MSDC, it is understood that the condition is likely to be missing the word normally and as such, the relevant standard for consideration is ProPG2017 and no more than 10 events per night above 45dB L_{Amax} for a bedroom. This is consistent with the requirements of the Planning Noise Advice Document Sussex dated November 2023 which Mid Sussex District Council are signatories to.

2.3 Previous Acoustic Works Undertaken

Temple Group provided two acoustic reports dated 27th April 2022 and 26th May 2022 which are apparent on the planning website at Mid Sussex District Council. Through reviewing the reports, the noise data was measured in April 2019 (consent provided by Mid Sussex District Council EHO to consider data obtained for the neighbouring property 25-27 Perrymount). It is therefore considered appropriate to revisit the site data and for Acoustic South East to revisit the site and remeasure.

2.4 Soundscape

The soundscape consisted primarily of road and rail noise, with intermittent noise from the building works storage area to the south west.

2.5 Site Location and Extension

The site plan can be seen in Figure 1 below. Figure 2 shows the consented extension.



Figure 1. Site Location Plan

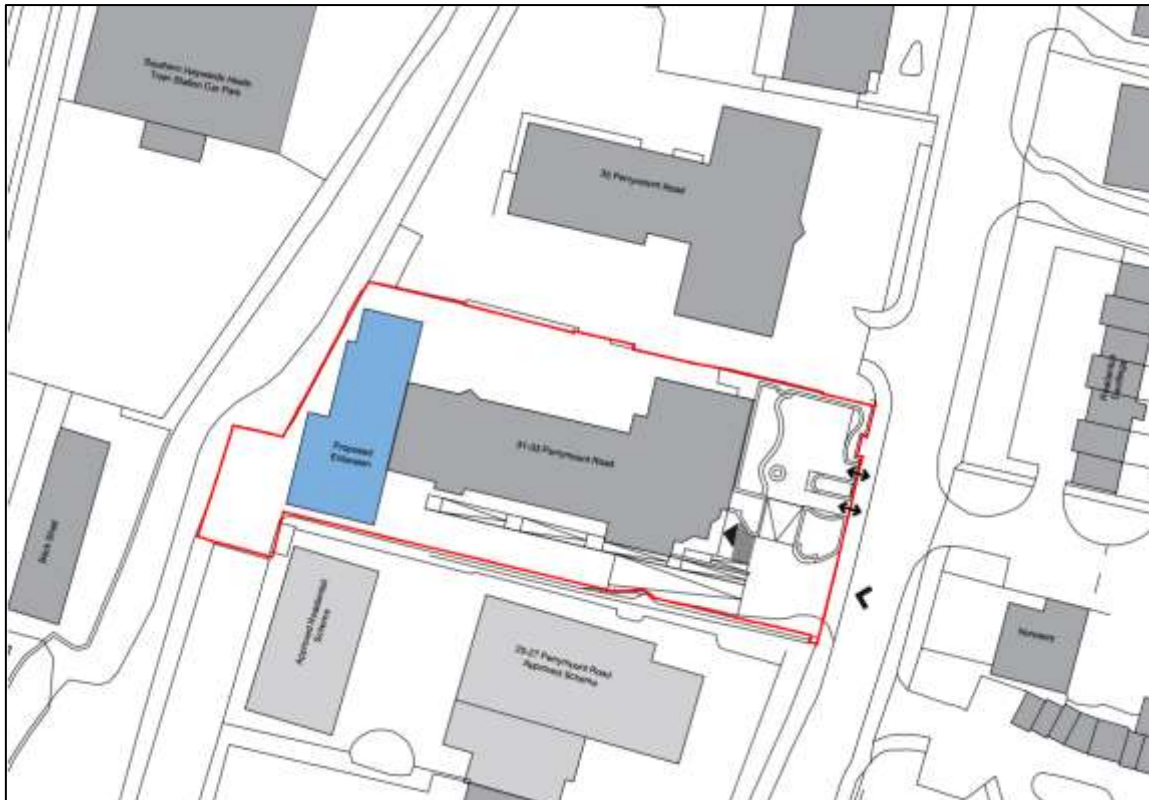


Figure 2. Consented Rear (West Extension)

2.6 Standards and Guidance

Given that the site is consented by the local planning authority, it is not necessary to present detailed policy information. Therefore, the relevant standards used within the assessment relating to noise and specifically a discharge of condition are as follows:

2.6.1 BS8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings

Table 4 of BS8233:2014 provides the following guideline values:

Activity	Location	Time period of day	
		07:00-23:00	23:00-07:00
Resting	Living Rooms	35dB $L_{Aeq,16hour}$	-
Dining	Dining Room/Area	40dB $L_{Aeq,16hour}$	-
Sleeping (daytime resting)	Bedroom	35dB $L_{Aeq,16hour}$	30dB $L_{Aeq,8hour}$

Table 1. BS8233:2014 Criteria

2.6.2 ProPG2017- Professional Practice Guidance on Planning & Noise

Planning guidance (ProPG2017) relates to new residential development and airborne transportation noise, which includes exposure to road traffic, railway and aviation noise. Whilst ProPG, 2017 generally mirrors the requirements of BS8233:2014 and the World Health Organisation Guidelines, 1999, it goes further in setting a limit for inside bedrooms for L_{Amax} events and specifically, no more than 10 L_{Amax} events per night time period above 45dB(A).

The internal bedroom L_{Amax} values will be used in accordance with ProPG2017.

2.6.3 Building Regulations, Approved Document O

Recently introduced Part O of the building regulation requires an assessment of whether bedroom windows can be opened at night. It is assumed that bedroom windows will be closed if either of the conditions below are met:

- Internal noise level exceeds 40dB $L_{Aeq, 8hour}$
- L_{Amax} events exceed 55dB L_{Amax} more than 10 times a night.

2.7 Methodology

A visit was made to the site on 5th August 2026 to install a long term class 1 sound level meter at the rear of the premises, close to the site boundary with Network Rail to the rear. The data obtained was then used to populate an IMMI noise model to predict the likely external sound pressure levels for the habitable spaces.

Whilst present on site, a shortened CRTN (Calculation of Road Traffic Noise) survey (3 hour) was undertaken to consider the impact of Perrymount Road and what, if any, noise impact this may have on the consented extension.

A noise model was constructed to include both the road and rail sound sources. With the noise model calibrated, it was saved and then the consented plans added with bedrooms and living rooms added as receptor positions.

The noise model was then run to predict freefield external sound pressure levels

2.8 Clients Preferred Window Provider and Ventilation

The client proposes a Warmcore window which has an R_w+C_{tr} value of 37dB(-5). The $R_{traffic}$ value is therefore 32dB(A). The $R_{traffic}$ values includes for the low frequency correction.

Mechanical Ventilation and Heat Recovery is proposed in terms of providing background ventilation to the flats. This is consistent with Approved Document F and rates will be selected at the commissioning stages.

Acoustic louvres are also included within the design.

3 Survey Information

The survey utilised a class 1 sound level meter in freefield conditions to measure over a period which deliberately included a weekend. The data was measured with a 1minute resolution using fast and A weighted filters.

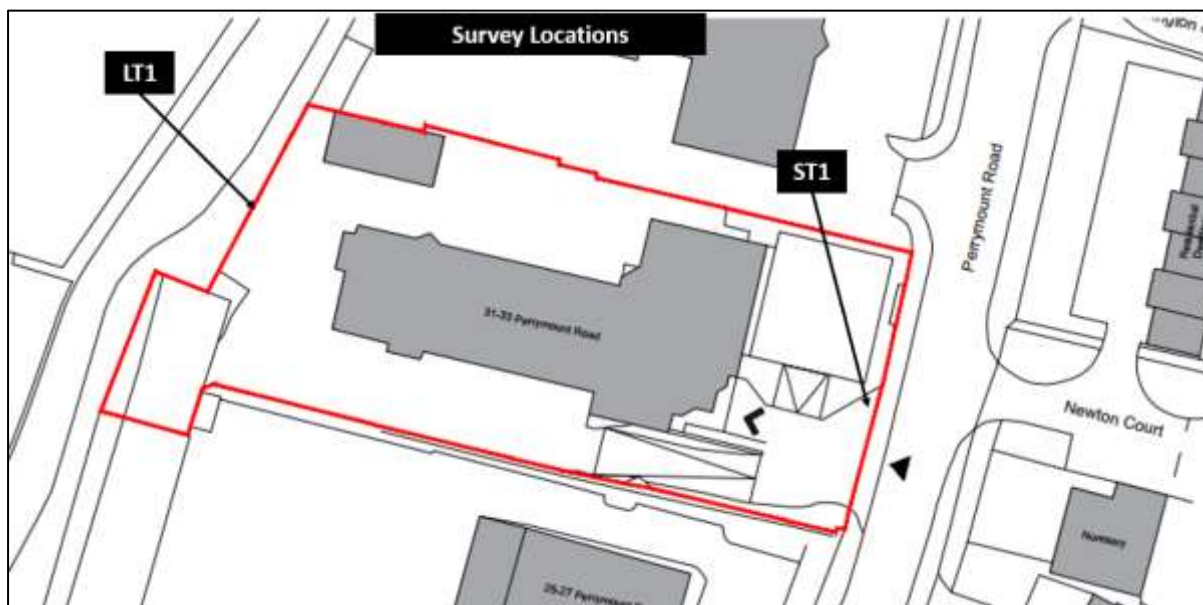


Figure 3. Location of Noise Monitoring Locations LT(Long Term)(ST- Short Term)

Survey(s) carried out by	Scott Castle BSc(Hons) Env Health, MCIEH CEnvH MIOA
Equipment Used	Svantek 971A Class 1 sound level meter (LT1), 2.15m above ground level, (Free Field)
Equipment Used	Castle Acoustic Calibrator – Serial No. 041173
Location	WhatThree Words (LT1) – tapers.keener.lecturers
Duration	05/08/2026 to 10/08/2026

Table 2. Survey Data

4 Measured Data

4.1 LT1 Position

It must be noted that the survey details below, are in fact that, the values measured at the long-term survey position. Noise modelling software is used to predict the values at the different facades.

LT1 Position									
Day	Date	L _{Aeq} 16/8Hr		11th L _{Amax}		Sound Reduction Index Required			
		Day	Night	1 min	2min	Day 16Hr	Night 8 Hr	L _{Amax,1min}	L _{Amax,2min}
Wednesday	05/05		50.1	71.31	71.19		20	26	26
Thursday	06/05	53.7	50.2	70.29	69.49	19	20	25	24
Friday	07/05	53.1	49.0	69.22	69.22	18	19	24	24
Saturday	08/05	53.2	45.1	66.28	66.28	18	15	21	21
Sunday	09/05	51.9	50.6	70.37	69.68	17	21	25	25
AVERAGE:		53	49	69	69	18	19	24	24

Figure 4. Long Term Monitoring Position- Measured Values

4.2 ST1 Roadside Position (Shortened CRTN)

It is recognised that the closest East facing facades are approximately 71m from the kerb edge.

A class 1 sound level meter was placed in freefield conditions at 3m from the pavement edge. A 3-hour attended survey was undertaken to identify the likely L_{Aeq,16 hours} for the daytime and night time periods.

CRTN	L _{A10,1 hour}
Hour 1	69.8
Hour 2	69.7
Hour 3	70.3
Arithmetic Average	69.9
L _{10,18 hour}	68.9
L _{A10,18 hour to LAeq,16 hour}	66.9

Figure 5. Shortened CRTN Measurement Values

The conversion from daytime to night time (L_{night}) is taken from The Transport Research Laboratory/Casella research and is as follows:

$$L_{\text{night}} = 0.90 \times L_{\text{A10, 18 hour}} - 3.77$$

The roadside L_{Aeq,16 hour} value is therefore 67dB (rounded).

The roadside L_{Aeq,8 hour} value is 59dB (rounded).

The earlier reporting by Temple MP2 position (railside, measured March-April 2019) recorded 52dB L_{Aeq,16 hour} for the daytime period and 48dB L_{Aeq,8 hour} for the night time period. These are within 1dB of the measured data by Acoustic South East (see Figure 4 above).

5 Noise Modelling Software (IMMI)

In order to see how noise varies at different positions around the proposed development it is possible to produce a noise contour map. A computer noise model has been completed using the computer package IMMI. Drawings of the area have been used to complete the noise models and the topography of the location recreated. IMMI faithfully implements the propagation method of ISO-9613:1996; Acoustics – Attenuation of sound during propagation outdoors.

The noise modelling software predicts freefield and A-weighted dB values.

5.1 Noise Model Inputs

The noise model has been generated using the following inputs:

- Scaled architect drawings for the consented site to ensure heights and locations
- The noise modelling did replicate the site balconies, where practicable as these had a return on the building form. However, the balconies represent a worst case as there are no solid balustrades applied into the noise modelling. This is a constraint of the noise modelling software.
- Bedrooms and Kitchen Living Diners (KLD) have been plotted accordingly across the extension area
- The planning portal at Mid Sussex was used to consider heights of adjacent buildings.
- In terms of the requirement for enhanced mitigation measures, this has used a 21dB value taken from the AVOG table B2-2. This identifies that up to 21dB of attenuation is typically achieved with standard double glazing and trickle vents. Above 21dB, enhanced glazing and/or acoustic vents will inevitably achieve greater performance.

5.2 Noise Model Outputs

5.2.1 Daytime Predicted 2D Noise Contours



Figure 6. Predicted 2D Noise Contours - Daytime

5.2.2 Night Time Predicted 2D Noise Contours

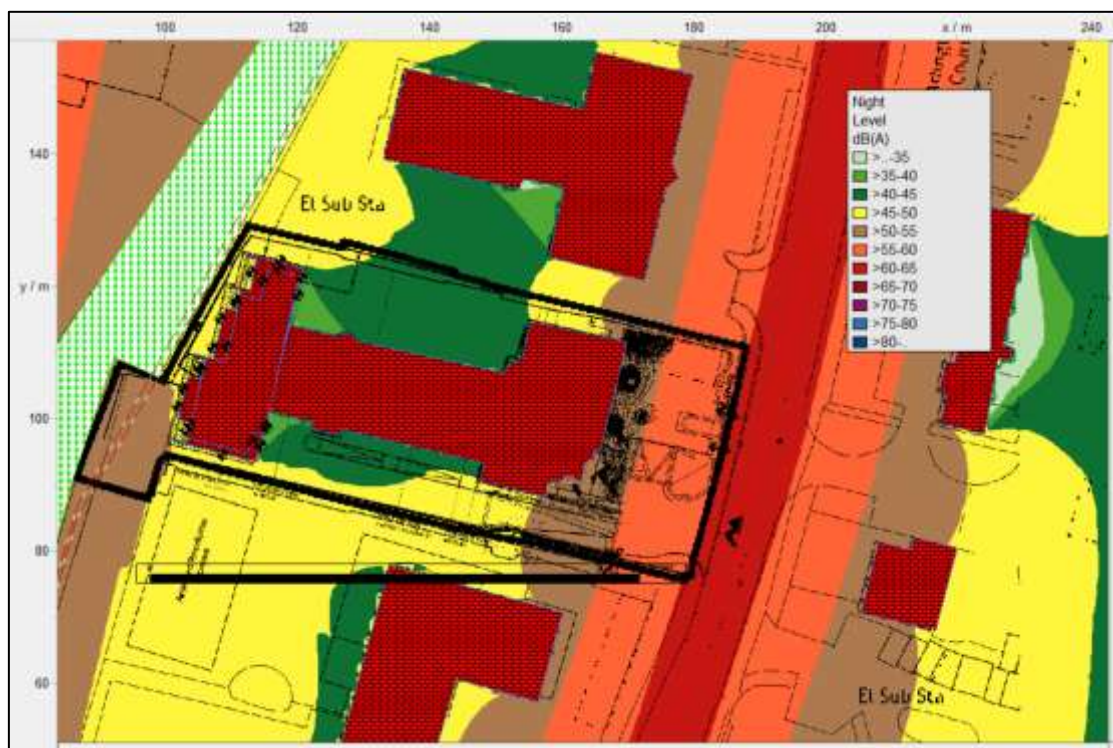


Figure 7. Predicted 2D Noise Contours – Night Time

5.3 Noise Model Check

It is noted from the plans that the long-term survey position was approximately 51m from the closest railway line. In calculating the difference between the survey position and the closest bedroom (F2), this is only a 3m difference. This is calculated as a worst case using a 10log relationship ($10\log(54/51)=0.25\text{dB}$ reduction and remains consistent with the noise model. As is expected, with higher storeys, these will likely have a direct line of sight to the railway passes and the exposure is likely to be greater.

5.4 Noise Modelling Outcomes

The outcomes from the noise modelling are as follows:

- The F3/F4 flats are marginally closer to the railway source than the survey position and are likely to receive increased sound pressure levels.
- Whilst the daytime and night time sound pressure levels are not high, the driving factor in protecting residents from adverse noise levels will be the overnight L_{Amax} events. This will dictate that bedrooms have an increased sound reduction index for the night time period and are circa 8-9dB more than the overnight $L_{Aeq,8\text{ hour}}$ SRI.

6 Discussion

6.1 Sound Reduction Index

By being aware of how the soundscape impacts the proposed properties, a noise modelling approach predicts external sound pressure levels around the building perimeters. Subsequently, the required Sound Reduction Index (SRI) to achieve satisfactory internal sound pressure levels can be calculated.

There are three drivers which impact the façade sound reduction index or SRI. These are the daytime continuous noise levels measured over 16 hours in $L_{Aeq,T}$, the night time continuous noise levels over 8 hours, also measured in $L_{Aeq,T}$. Thirdly, ProPG2017 requires a consideration of the number of L_{Amax} events which will occur in a bedroom during the night time period. Specifically, ProPG2017 requires no more than ten events exceeding 45dB L_{Amax} measured internally. Whichever of these drivers is highest is applied to ensure that the residents are protected from each criterion.

An assessment has been made below of all rooms at all levels to understand how the soundscape and railway impact differs.

It is relevant to note that living room and bedroom calculations differ, as whilst living rooms are subject to only the daytime predicted sound pressure levels, bedrooms must consider both daytime and night time continuous sound pressure levels as well as L_{Amax} events during the night to protect sleep.

The daytime SRI is the predicted external freefield sound pressure level minus 35dB as per the Table 4 values in BS8233:2014 and the same for the night time values (albeit minus 30dB).

The L_{Amax} SRI is achieved by using the predicted night time external sound pressure level and comparing this with the measured night time survey noise level. The SRI figure is then adjusted to ensure no more than 10 L_{Amax} events per night inside the bedroom environment above 45dB L_{Amax} . The adjustment process takes account of each of the 5 measured night time periods to ensure that no individual night exceeds 10 events of 45dB L_{Amax} inside the bedroom.

The long-term survey positions (LT1 and LT2) have been used to assess night time data and L_{Amax} considerations. The SRI considerations have been split into bedrooms and living rooms for each façade and the data has been split into houses and flats accordingly.

6.1.1 Bedrooms

Plot (Bedrooms)	Predicted External Day	Predicted External Night	Daytime SRI	Night Time SRI	Night Time (L_{Amax} SRI)	Plot (Bedrooms)	Predicted External Day	Predicted External Night	Daytime SRI	Night Time SRI	Night Time (L_{Amax} SRI)
Ground F3-BED	53.9	49.8	18.9	19.8	27	Third F1 BED	45.4	38.0	10.4	8.0	16
Ground F4 BED	51.4	46.8	16.4	16.8	24	Third F4 BED2	47.9	40.2	12.9	10.2	18
Ground-F2 BED	52.1	48.1	17.1	18.1	26	Third F4 BED1(2)	48.3	40.8	13.3	10.8	18
Ground F1 BED	43.4	36.1	8.4	6.1	14	fourth F3-BED	56.2	52.2	21.2	22.2	30
Ground F4 BED1(2)	46.2	38.8	11.2	8.8	16	Fourth F2 BED	54.9	50.8	19.9	20.8	28
Ground F4 BED2	45.8	38.2	10.8	8.2	16	Fourth F1 BED	46.0	38.6	11.0	8.6	16
First F4 BED1(2)	46.9	39.5	11.9	9.5	17	Fourth F4 BED2	48.5	40.8	13.5	10.8	18
First F4 BED2	46.5	38.9	11.5	8.9	17	Fourth F4 BED1(2)	49.0	41.5	14.0	11.5	19
First F3-BED	54.5	50.5	19.5	20.5	28	fifth F3-BED	56.8	52.8	21.8	22.8	30
First F2 BED	53.0	49.0	18.0	19.0	27	fifth F2 BED	55.5	51.5	20.5	21.5	29
First F1 BED	44.1	36.8	9.1	6.8	14	Fifth F1 BED	46.3	39.0	11.3	9.0	17
First F4 BED	52.2	47.6	17.2	17.6	25	Fifth F4 BED2	48.7	41.0	13.7	11.0	19
Second F4 BED	52.6	47.9	17.6	17.9	26	Sixth F4 BED1(2)	49.3	41.8	14.3	11.8	19
Second F3-BED	55.3	51.3	20.3	21.3	29	Sixth F2 BED	55.8	51.7	20.8	21.7	29
Second F2 BED	53.8	49.8	18.8	19.8	27	Sixth F3-BED	57.1	53.1	22.1	23.1	31
Second F1 BED	44.7	37.4	9.7	7.4	15	Sixth F1 BED	46.7	39.4	11.7	9.4	17
second F4 BED2	47.2	39.6	12.2	9.6	17	Sixth F4 BED2	48.8	41.2	13.8	11.2	19
Second F4 BED1(2)	47.6	40.2	12.6	10.2	18	Seventh-7-BED2	49.0	41.4	14.0	11.4	19
Third F3-BED	56.0	52.0	21.0	22.0	30	Seventh-6-BED1	55.7	51.7	20.7	21.7	29
Third F2 BED	54.5	50.5	19.5	20.5	28	Seventh-5-BED	55.6	51.6	20.6	21.6	29
						Seventh-5-BED2	51.5	47.5	16.5	17.5	25

Figure 8. Sound Reduction Index (Bedrooms)

From the bedrooms, as anticipated, it is the L_{Amax} events which are contributing towards to the Sound Reduction Index requirements.

6.1.2 Kitchen/Living/Diners (KLD)

Plot (KLD)	Predicted Daytime External SPL	SRI Day	Plot (KLD)	Predicted Daytime External SPL	SRI Day
Ground-F4-KLD	52.4	17.4	Third F1-KLD3	46.4	11.4
Ground-F3-KLD	52.3	17.3	Fourth F4-KLD	54.5	19.5
Ground-F2-KLD	51.8	16.8	Fourth F4-KLD2	56.4	21.4
Ground-F1-KLD	51.8	16.8	Fourth F3-KLD	55.1	20.1
Ground-F1-KLD2	50.5	15.5	fourth -F2-KLD2	55.8	20.8
Ground-F1-KLD3	44.3	9.3	Fourth F2-KLD	54.7	19.7
Ground-F2-KLD2	53.1	18.1	Fourth F1-KLD	54.7	19.7
Ground-F4-KLD2	54.1	19.1	Fourth F1-KLD2	53.3	18.3
First-F4-KLD	53.1	18.1	Fourth F1-KLD3	47.0	12.0
First-F4-KLD2	54.8	19.8	Fifth F4-KLD	54.5	19.5
First-F3-KLD	53.3	18.3	Fifth F4-KLD2	56.8	21.8
FirstF2-KLD2	54.0	19.0	Fifth F3-KLD	55.6	20.6
First-F2-KLD	52.7	17.7	fifth-F2-KLD2	56.4	21.4
First F1-KLD	52.7	17.7	Fifth F2-KLD	55.3	20.3
First F1-KLD2	51.3	16.3	Fifth F1-KLD	55.4	20.4
First-F1-KLD3	45.0	10.0	Fifth F1-KLD2	54.3	19.3
Second-F4-KLD	53.8	18.8	Fifth F1-KLD3	47.4	12.4
Second F4-KLD2	55.6	20.6	Sixth F4-KLD	55.1	20.1
SecondF3-KLD	54.1	19.1	Sixth F4-KLD2	57.1	22.1
Second F2-KLD2	54.7	19.7	Sixth F3-KLD	55.9	20.9
Second F2-KLD	53.5	18.5	Sixth-F2-KLD2	56.6	21.6
Second F1-KLD	53.5	18.5	Sixth F2-KLD	55.5	20.5
Second F1-KLD2	52.0	17.0	Sixth F1-KLD	55.6	20.6
Second-F1-KLD3	45.7	10.7	Sixth F1-KLD2	54.3	19.3
Third F4-KLD	54.6	19.6	Sixth F1-KLD3	47.8	12.8
Third F4-KLD2	56.3	21.3	Seventh-5-KLD	51.8	16.8
Third F3-KLD	54.9	19.9	Seventh-5-KLD2	52.7	17.7
Third-F2-KLD2	55.5	20.5	Seventh-5-KLD3	47.1	12.1
Third F2-KLD	54.3	19.3	Seventh-6-KLD	56.3	21.3
Third F1-KLD	54.2	19.2	Seventh-7-KLD	49.3	14.3
Third F1-KLD2	52.7	17.7			

Figure 9. Sound Reduction Index (Kitchen/Living/Diners)

7 Overheating Assessment

7.1 Simplified Approved Document O Assessment

As per section 2.6.3, a bedroom window may only be opened during the night time period (23:00-07:00 hours) to mitigate thermal overheating where the following conditions are met:

1. The internal $L_{Aeq,8 \text{ hour}}$ is no greater than 40dB $L_{Aeq,8 \text{ hour}}$.
2. That the number of L_{Amax} events does not exceed 55dB L_{Amax} for more than 10 times during any night.

A simplified assessment has been made based on the above information as follows and for transparency was shared with the overheating assessor.

Property	Window Openable to Mitigate Thermal Overheating at Night	Property	Window Openable to Mitigate Thermal Overheating at Night
Ground F3-BED	No	Third F1 BED	Yes
Ground F4 BED	No	Third F4 BED2	Yes
Ground-F2 BED	No	Third F4 BED1(2)	Yes
Ground F1 BED	Yes	Fourth F3-BED	No
Ground F4 BED1(2)	Yes	Fourth F2 BED	No
Ground F4 BED2	Yes	Fourth F1 BED	Yes
First F4 BED1(2)	Yes	Fourth F4 BED2	No
First F4 BED2	Yes	Fourth F4 BED1(2)	Yes
First F3-BED	No	Fifth F3-BED	No
First F2 BED	No	Fifth F2 BED	No
First F1 BED	Yes	Fifth F1 BED	Yes
First F4 BED	No	Fifth F4 BED2	Yes
Second F4 BED	No	Sixth F4 BED1(2)	Yes
Second F3-BED	No	Sixth F2 BED	No
Second F2 BED	No	Sixth F3-BED	No
Second F1 BED	Yes	Sixth F1 BED	Yes
Second F4 BED2	Yes	Sixth F4 BED2	Yes
Second F4 BED1(2)*	Yes	Seventh-7-BED2	Yes
Third F3-BED	No	Seventh-6-BED1	No
Third F2 BED	No	Seventh-5-BED	No
		Seventh-5-BED2	No

Figure 10. Openable Bedroom Windows for the Night Time Period to Mitigate Thermal Overheating

7.2 Client Overheating Assessment

A formalised overheating assessment has been undertaken by Aldrock.

The reporting identifies that overheating is addressed through a combination of MVHR with summer bypass, acoustic ventilation louvres where windows cannot be opened overnight, and openable windows where the facade levels permit.

As can be seen from the approved drawings, there are vertical vents adjacent to the windows which measure approximately 2.4m by 0.4m providing an area of 0.96m².

The vents utilised within the overheating assessment were a DUCO Acoustic Panel 500 - <https://www.duco.eu/uk-ie/products/intensive-ventilation/wall-and-window-louvres/ducogrille-acoustic/duco-acoustic-panel-500hp>. An image of the louvres can be seen in Figure 11 below as well as the spectral performance in Figure 12.



Figure 11. Example of the DUCO louvred grill 500

The spectral performance for the open vent can be seen in Figure 12 below.

ACOUSTIC SPECS	Rw(C;C _v) = 21(-2;-5) dB					
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
	6,7 dB	8,7 dB	18,5 dB	21,6 dB	26,7 dB	27,9 dB

Figure 12. Acoustic Spectral Performance of the Vent

The overheating assessment concludes that overheating is not a concern with the combination of measures as proposed (ie MVHR with summer bypass, vented louvres and openable windows where practicable).

8 Rigorous Calculations

It is possible to review a worst-case bedroom and a worst-case kitchen/living/diner.

8.1 Bedroom

As a bedroom, Plot F3 on the sixth floor has the highest exposure of 57dB $L_{Aeq,16 \text{ hours}}$ and 53.1dB $L_{Aeq,8 \text{ hours}}$. This requires an SRI of 22.1 during the daytime period, 23.1 during the night time period and to accommodate the L_{Amax} events to ensure no more than 10 a night exceeding 45dB L_{Amax} , this will be 31dB.

When calculating for the overheating assessment, the SRI for the night time period in terms of $L_{Aeq,8 \text{ hour}}$ will be 13.1dB (to achieve 40dB $L_{Aeq,8 \text{ hour}}$ internally) and to take account of no more than 10 events per night above 55dB L_{Amax} , the SRI will be 21dB.

INSUL noise modelling software was used to determine the likely noise break in using the daytime values of 53dB $L_{Aeq,16 \text{ hour}}$, with the Warmcore windows (37(-5 Ctr)) and the DUCO 500 louvered panel. The exterior brickwork was not modelled, as this is sufficiently robust with a brickwork and SFS internal structure.

As per Figure 13 below, this shows an SRI of 28 is achieved. This should be noted as being with the vent open and providing suitable cooling in terms of overheating. However, it may not achieve the required 31dB required for ProPG2017 and therefore, it will be reasonable to consider an openable glazed partition behind the louvre. The glazing must be equal to the window specification.

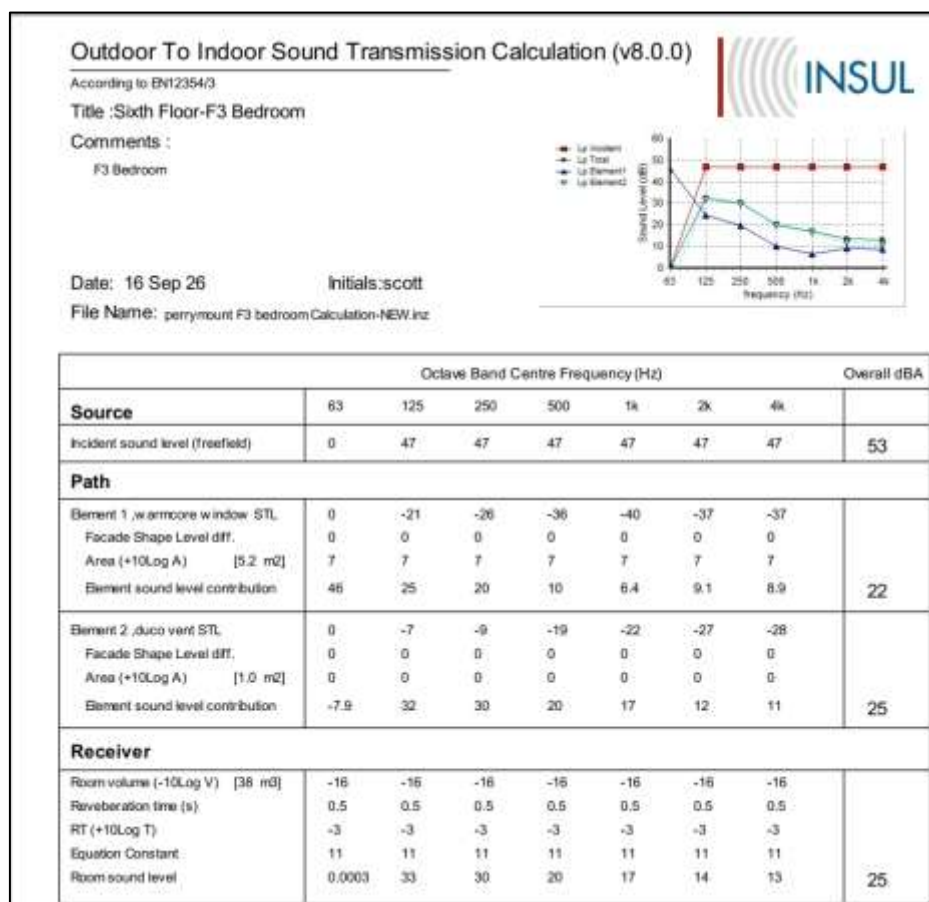


Figure 13. Sixth Floor, F3 Bedroom

8.2 Kitchen/Living/Diner (KLD)

The worst case KLD is the sixth floor, F4 having a predicted daytime sound pressure level of 57dB $L_{Aeq,16 \text{ hour}}$. The SRI required to ensure BS8233:2014 Table 4 values are achieved will therefore be 22dB.

With the vent in the open position, this provides for an SRI of 29dB which achieves the BS8233:2014 requirements.

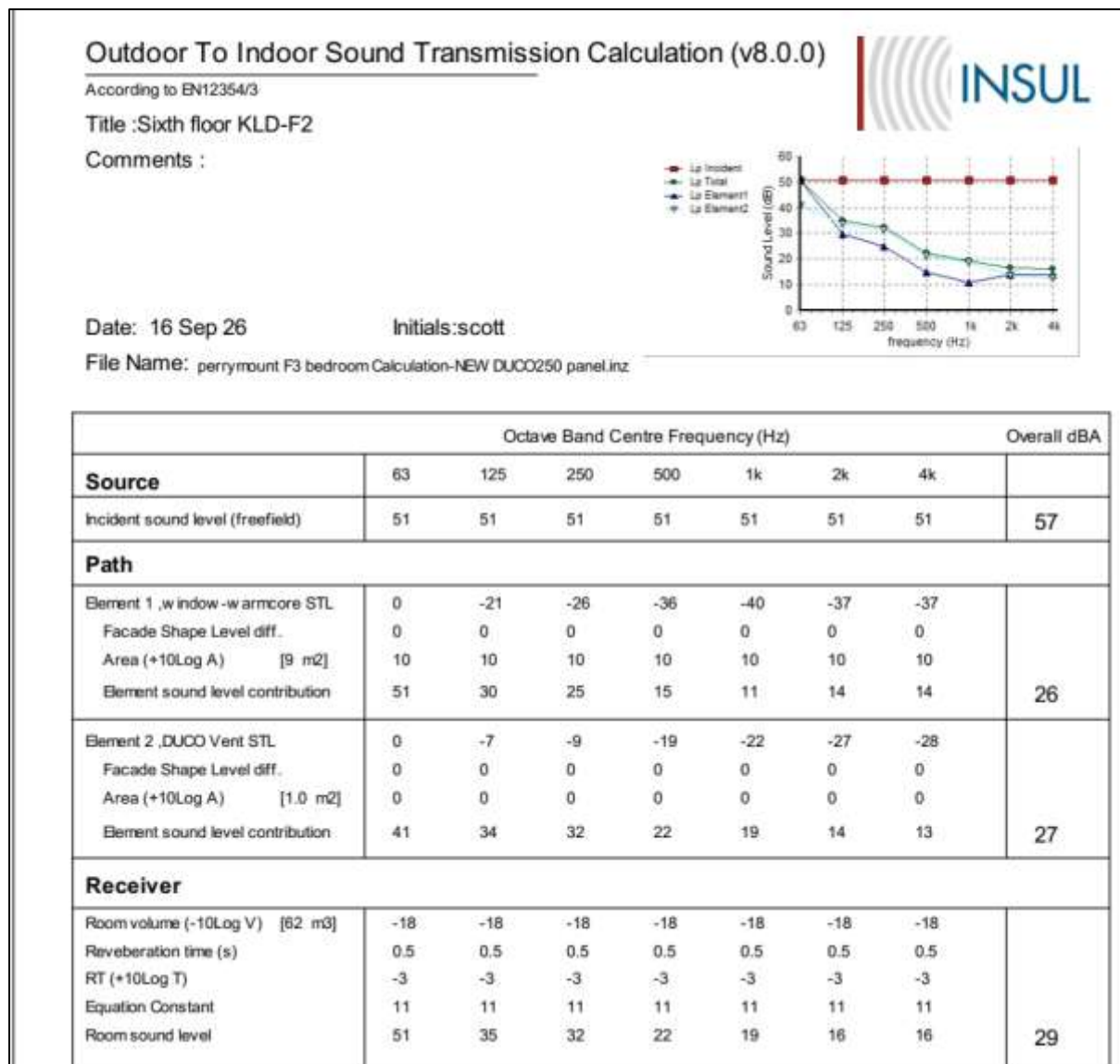


Figure 14. Sixth Floor, F4 KLD

The rigorous calculations by assessing both worst case bedrooms and windows demonstrate that the site is capable of being constructed as intended.

It should be remembered that residents retain the freedom to open windows as they deem appropriate and have a connection with the outside environment. The louvred vents provides a solution for overheating, and it is recognised that this is not always going to be the case and, as with bedrooms, there may well a requirement to ensure that the louvres are closeable as the UK does not experience overheating conditions all year round.

9 Recommendations

9.1 Glazing

The clients intended glazing provider is Warmcore and the specifications are presented below.

CASEMENT AND FLUSH

Performance and Accreditation		
U-value (double glazing) *	1.3 W/m²K	
U-value (triple glazing) **	0.8 W/m²K	
Energy Rating (WER / DSER) **	A+	
Green Guide Rating *	A	
Acoustic Performance (dB) ^	Rw (C,Ctr) 37 (-2,-4) dB	
Air Tightness (Pa)	Class 4	
Water Tightness (Pa)	Class 6A	
Wind Loading (Pa)	Class C3	
Security	PAS 24	
Secured By Design (SBD)	✓	
Configurations		
Top Hung Outward	✓	
Side Hung Outward	✓	
Side Hung Inward	✓	
Bottom Hung Inward	✓	
Fixed Light	✓	
Multilight	✓	
Tilt & Turn	*	
Sash Weight and Size Limits (w x h) f		
Top Hung Outward	35kg	1200 x 1200mm
Side Hung Outward	35kg	800 x 1500mm
Fixed Light	-	2000 x 3000mm
System Features		
System Depth	70mm/79mm (flush frame)	
Dual Colour Option	Yes	
Multi-Point Locking	Yes	
Glazing Options	Internal	
Glazing Thickness	28mm / 44mm	

TILT & TURN

Performance and Accreditation		
U-value (double glazing) *	1.3 W/m²K	
U-value (triple glazing) **	0.8 W/m²K	
Energy Rating (WER / DSER) **	A+	
Green Guide Rating *	A	
Acoustic Performance (dB) ^	Rw (C,Ctr) 37 (-2,-5) dB	
Air Tightness (Pa)	Class 4	
Water Tightness (Pa)	Class 9A	
Wind Loading (Pa)	Class C3	
Security	PAS 24	
Secured By Design (SBD)	✓	
Configurations		
Top Hung Outward	*	
Side Hung Outward	*	
Side Hung Inward	*	
Bottom Hung Inward	*	
Fixed Light	✓	
Multilight	✓	
Tilt & Turn	✓	
Sash Weight and Size Limits (w x h) f		
Tilt & Turn	100kg	1000 x 2100mm
System Features		
System Depth	70mm	
Dual Colour Option	Yes	
Multi-Point Locking	Yes	
Glazing Options	Internal	
Glazing Thickness	28mm / 44mm	

Figure 15. Warmcore Windows

Should alternative glazing providers be sought for the development, attention is drawn to the R_w+C_{tr} or $R_{traffic}$ values as highlighted in Figure 14 above. It must be noted that the R_w+C_{tr} or $R_{traffic}$ is the only comparable metric for window suppliers.

Please also note the requirements regarding openable glazing behind the louvred vent.

9.2 Ventilation

The design is premised on a Mechanical Ventilation and Heat Recovery (MVHR) system being used to provide background ventilation to the flats.

In considering MVHR, the client should be aware of design criteria listed in the Acoustics, Ventilation and Overheating Guide dated Jan 2020 in 3.3.1:

“Evidence [20] indicates that “a more prudent limit for mechanical services noise around 24 – 26 dB(A) is likely to be required to prevent an adverse reaction from most occupants while falling asleep”. The selection of MVHR units should therefore be as quiet as possible when placed into the residential demise.

10 Conclusion

A class 1 sound level meter was installed at the rear of the site in freefield conditions between 5th to 10th August 2026. The dominant sound at that position is the frequent passing of railway traffic. The results of the assessment were broadly consistent with the earlier 2019 measured data from Temple Group.

As stated, the scheme of flats has already been consented by Mid Sussex District Council and condition 7 of the decision notice requires a scheme of acoustic protection to safeguard future occupants. The condition also references thermal comfort.

To ensure that this has been addressed, the client has commissioned an overheating assessment which indicates that overheating is not likely to be an issue. Overheating is addressed using Mechanical Ventilation and Heat Recovery (MVHR) on a summer bypass, openable windows (where permissible) and a louvred façade system.

Calculations have been undertaken to demonstrate that with the clients proposed windows (Warmcore), an MVHR system and vertical louvred vents, that thermal comfort as well as acceptable internal conditions are achieved and that residents remain protected against adverse noise levels.

Based on the evidence presented, the local planning authority may discharge condition 7 of DM/22/2303.

11 Appendix A – Floorplans







