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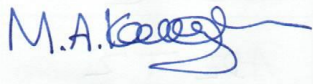
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NOISE ASSESSMENT

**577 Barlow Moor Road
Chorlton-cum-Hardy
Manchester M21 8AE**

Report Date: 9th February 2023
Ref: 20230210 9201 Chorlton ProPG.docx
Site Visit by: M A Kenyon
Site Visit: 17th-22nd November 2022

Prepared by: M A Kenyon MSc BSc MIOA



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1.0 INTRODUCTION

Ben Sacarello of WSP instructed Martec Environmental Consultants Ltd. to undertake a noise assessment at a development site on the first floor of 577 Barlow Moor Road, Chorlton-cum-Hardy, Manchester M21 8AE.

The local authority has granted prior approval for the change of use of the first floor to form two self-contained flats [MCC Ref. 134418/P3MAP/2022] subject to noise conditions as discussed below.

This report considers measurements taken on this site, the requirements of current government guidance and makes recommendations for noise mitigation as necessary. Acoustic terminology is explained at Appendix 1; consultants' qualifications at Appendix 2; References at Appendix 3, and detailed measurement results at Appendix 4, the specification of the installed glazing at Appendix 5 and copy correspondence at Appendix 6.

2.0 PROJECT BACKGROUND

It is understood that previously the building formed commercial premises, with offices on the first floor; recently consent was granted for the ground floor of the premises to be converted to a pizza restaurant **[Rudy's]**. The front and side of the building is close to Barlow Moor Road and therefore experiences road traffic noise.

We are instructed that the windows to the first floor were replaced some

9 to 12 months prior to the monitoring with new frames and 4/20/4 thermal glazing installed [See Appendix 5]; at the time of the monitoring the first floor was also essentially open-plan with sections of flooring and ceiling missing where partitions had been removed; especially at the front of the building.

Martec has previously conducted sound insulation tests of the separating floor between the Pizza Restaurant and the first floor [Martec Ref. 20220804 9201 Chorlton SI]. The results were as follows:

Table 1: Airborne Sound Insulation Results [dB] - 14/07/2022						Criterion	Results			Pass/
ANC Test	Source	Vol Receiver (m3)	Receiver	Vol (m3)	Element	$D_{nT,w}+C_{tr}$ (dB)	$D_{nT,w}$ (dB)	C_{tr} (dB)	$D_{nT,w}+C_{tr}$	Fail
N/A	GF Commercial	442	FF Front Area	110	Floor	≥43	46	-7	39	fail
N/A	GF Commercial	442	FF Mid Area	87	Floor	≥43	50	-5	45	pass

Table 1: Results of Sound Insulation Tests

It can be seen that the results at the front of the building will need to be improved by at least 4dB [$43-39=4$] in order to meet Building Regulations performance requirements.

3.0 NOISE CRITERIA

3.1 Local Authority

The local authority granted approval subject to the following noise condition:

"1) a) Before the development commences a scheme for acoustically

insulating the proposed residential accommodation against noise from Barlow Moor Road shall be submitted to and approved in writing by the City Council as local planning authority. There may be other actual or potential sources of noise which require consideration on or near the site, including any local commercial/industrial premises such as the ground floor commercial premises.

The potential for overheating shall also be assessed and the noise insulation scheme shall take this into account. The approved noise insulation and ventilation scheme shall be completed before any of the dwelling units are occupied.

b) Prior to first occupation of the residential units, a verification report shall be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant's report. The report shall also undertake post completion testing to confirm that the internal noise criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the internal noise criteria.

Reason: To secure a reduction in noise from traffic or other sources in order to protect future residents from noise disturbance and to reduce the potential for overheating."

In the informative to the consent, it is also stated:

“Noise

In order to discharge the acoustic insulation condition attached to this decision the following will be required:

Noise survey data shall include measurements taken during a rush-hour period and night-time to determine the appropriate sound insulation measures necessary. The following noise criteria shall be required to be achieved when providing adequate ventilation as defined by Approved Document F of the Building Regulations (whole dwelling ventilation):

Bedrooms (night time - 23.00 - 07.00) 30 dB LAeq (individual noise events shall not exceed 45 dB LAmax,F by more than 15 times)

Living Rooms (daytime - 07.00 - 23.00) 35 dB LAeq

Where applicable (entertainment/music): Additionally, where entertainment noise is a factor in the noise climate the sound insulation scheme shall be designed to achieve internal noise levels in the 63Hz and 125Hz octave centre frequency bands so as not to exceed (in habitable rooms) 47dB and 41dB (Leq,5min), respectively.”

3.2 Martec’s Proposed Noise Criteria

It can be seen that the local authority’s target noise levels are broadly as set out in BS8233:2014 [see Table 2 below] with additional guidance on nighttime noise events based on World Health Organisation advice.

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35 LAeq,16hr	--
Dining	Dining Room/Area	40 LAeq,16hr	--
Sleeping (daytime resting)	Bedroom	35 LAeq,16hr	30 LAeq,8hr 45 L _{Amax,F} ^[1]

Table 2: ProPG - Target Internal Noise Levels

[1] Added from WHO and applies to 10-15th highest nighttime event.

The footnotes to this table state that the above criteria can be relaxed by 5dB to achieve “reasonable” internal conditions.

Recordings were made during the monitoring period and noise from the ground floor premises is heard as a ‘hubbub of voices’ and therefore it is not considered that the ‘entertainment/music’ clause above would fall to be considered. The restaurant premises appear to finish producing noise by 11pm, i.e. no noise during the nighttime period.

Given the fact that the windows have recently been entirely replaced, plus the difficulties of improving the sound insulation of the separating floor and the inherent uncertainty of the predictions we consider that it would be appropriate to apply Noise Criteria based on the ‘Reasonable’ standards of BS8233:2014 as shown in Table 3 below:

Room	Daytime [07-23:00] Road & Restaurant	Nighttime [23-07:00] Road Noise Only
Living Rooms	40 LAeq	N/A
Bedrooms	N/A	35 LAeq and individual noise events shall not exceed 45 dB LA _{max,F} by more than 15 times

Table 3: Martec Proposed Noise Limits

4.0 MEASUREMENTS

Instrumentation was installed on Thursday 17th November 2022 and removed on Tuesday 22nd November at the locations shown in Figure 1:

1. Externally 1m outside the nearest first floor bedroom window to Barlow Moor Road
2. Internally in the approximate position of what would be the centre of the front kitchen/living room.

The sound level meters were SVAN type 957 [See Table 4 below]. Meter C was externally mounted on pole at a height of approximately 4m above local ground height and fitted with a RION WS02 "all-weather" windmuff. Meter A was internal again mounted on a pole some 1.4m above the floor and fitted with a RION WS02 windmuff. The meters calibrated correctly before and after the measurements. Both the meters and the calibrator had been laboratory calibrated within the preceding 2 years.

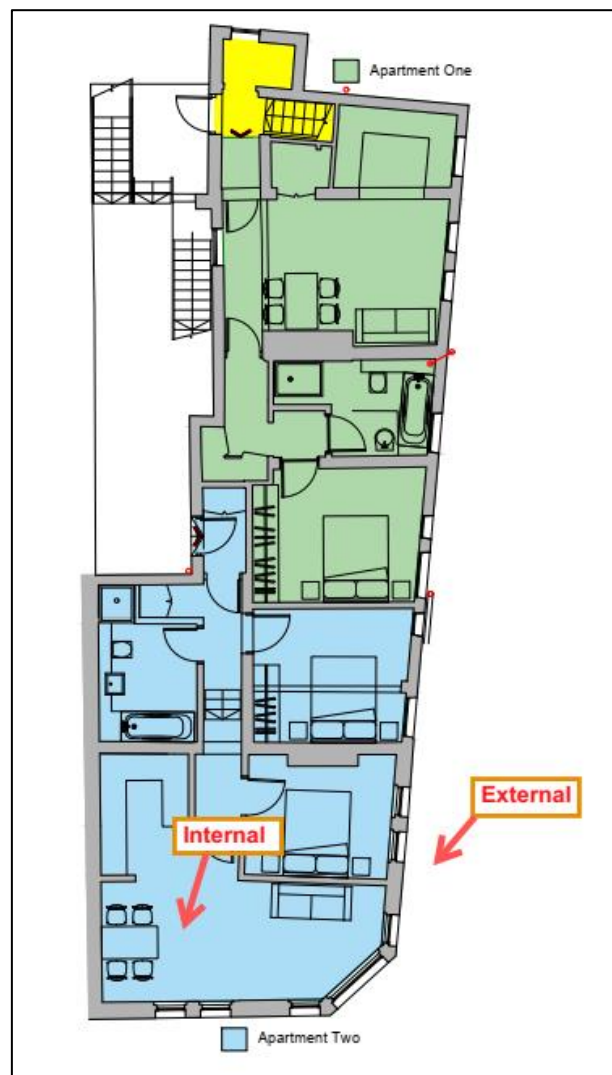


Figure 1: First Floor Layout [CBC Drwng 20/21-216-01]

It should be noted that making the external measurements required the window to be partially open [so the pole could be poked out through the window]; meaning that internal noise levels were affected by road traffic noise.

Model	Instrument	Serial No.	Lab Cal Certificate	Re-Calibration Due
A - Svan 957	Sound Level Meter	12308	1501182-1	01/11/2023
Svan SV12L	Preamp	13471	1501182-1	01/11/2023
GRAS 40AE Mic	Microphone	75146	1501182-1	01/11/2023
C Svan 957	Sound Level Meter	23201	00001202-2	31/03/2023
Svan SV12L	Preamp	24265	00001202-2	31/03/2023
PCB 377B02	Microphone	LW136090	00001202-2	31/03/2023
B&K 4231	Calibrator	2084928	00001202-1	31/03/2023

Table 4: Instrumentation

Based on information published by a South Manchester weather station on wunderground.com [IMANCH115] the weather conditions during the monitoring were generally temperatures between 5 and 15 degrees Centigrade, mostly dry with the wind speeds less than 5 m/s from the north initially and then from the south. Given the proximity of the noise sources to the monitoring locations it is not considered that the measurements were significantly affected by the weather conditions.

5.0 RESULTS

5.1 Road Traffic Noise Levels

More detailed results appear in Appendix 4, with summary results shown in Table 5 below. The results have been converted to free-field levels by the subtraction of a 3dB façade reflection factor.

Period		Measured Levels	
Day	Date	Day LAeq,16hr	Night LAeq,8hr
Thu	17-Nov	63	59
Fri	18-Nov	62	59
Sat	19-Nov	62	60
Sun	20-Nov	62	59
Mon	21-Nov	63	58
Tue	22-Nov	62	--
Arith Average		62	59

Table 5: Monitoring Position - Summary Results [dBA free-field]

The following octave band data can were also obtained:

Factor	Octave Band Centre Frequency [Hz]				
	125	250	500	1k	2k
Day LAeq	61	61	60	62	58
Night LAeq	55	56	56	60	55
Night LA01	65	67	67	71	66

Table 6: Monitoring Position - Octave Band Data

The 'loudest' night was Saturday 19th, Figure 2 below is a plot of the nighttime L_{Amax,F,1s} results, with the 15th highest event being 77.6 dB L_{Amax,F,1s} [free-field].

The monitoring position was outside the nearest bedroom window; however, the windows of the front living room are both near and have a larger view of the road; taking these factors into account, the average daytime level outside the living room windows would be 66 LAeq,16hr.

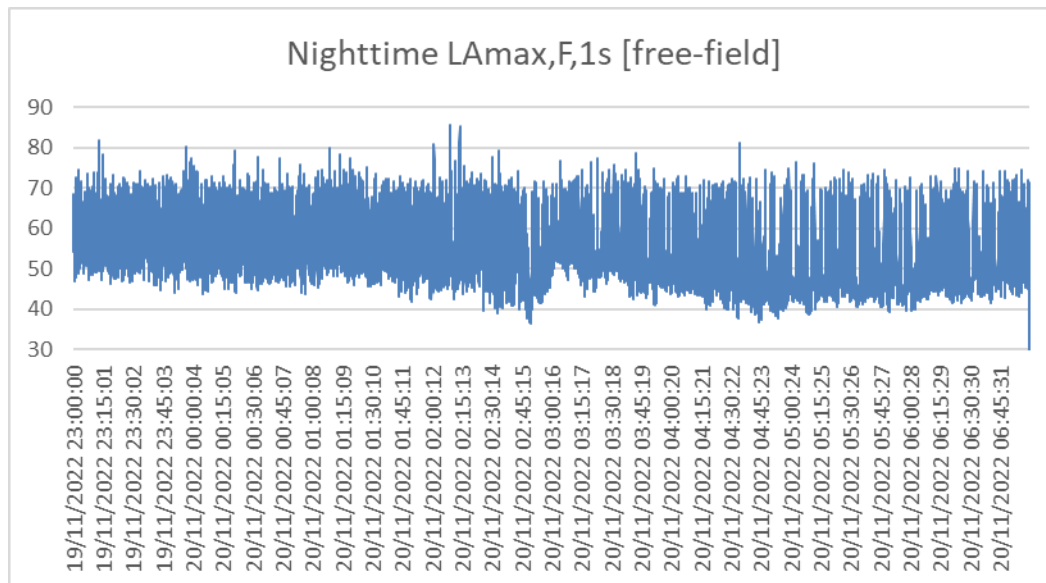


Figure 2: Monitoring Position - Nighttime LMax,F,1s

5.2 Pizza Restaurant

As outlined above, the measurements of road traffic noise required a window to be partly open and with the open-plan nature of the building, the internal noise measurements will have been a combination of road traffic and noise from the pizza restaurant [if any].

The meter was set to measure noise from 6pm to 6am as well as recording sound during this period. From the recordings and indeed from the restaurant's published opening hours, the pizza restaurant does not appear to produce significant amounts of noise during the nighttime period; consequently the period after midnight can reliably be assumed to consist solely of road traffic noise; from the analysis of all such results, the difference between internal and external LAeq levels [after midnight] is consistently around 23.5 dB, internal levels of road traffic noise are

23.5dB lower than the levels measured externally. Naturally this factor will also be correct for the period before midnight when the restaurant is operating.

If we plot the internal and external results for Monday night in Figure 3 below, it can be seen that there is no difference between the measured internal levels and the external level minus 23.5dB; consequently it can be deduced that there was no contribution from the pizza restaurant to the measured internal levels, and therefore that 'pizza noise' would have been around 10dB [or more] **below** the measured levels of road traffic noise, i.e. around 30 LAeq,1hr or lower.

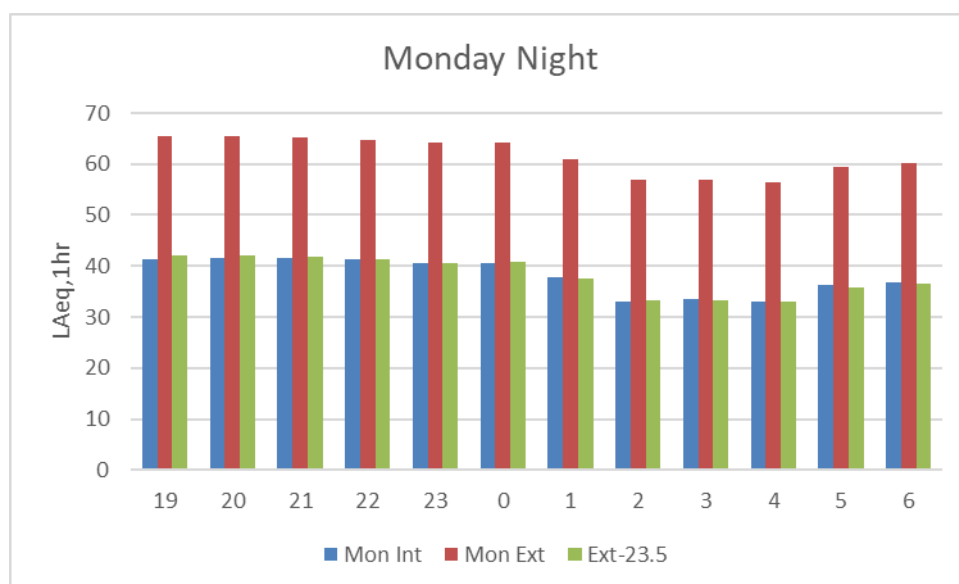


Figure 3: Results from Monday Night

From the analysis, 'pizza noise' appears to have contributed to the measured levels towards the end of Saturday evening [See Figure 4 below].

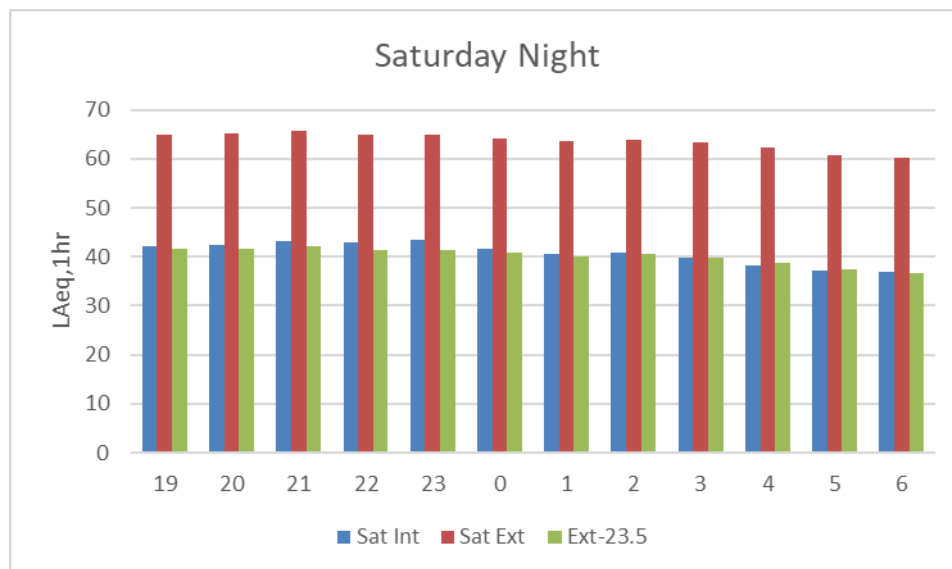


Figure 4: Results from Saturday Night

From the Saturday evening results, an estimate of 'pizza noise' of 37 LAeq,5hr from 6pm to 11pm with the floor in its 'pre-improvement' condition. It should be noted that the accuracy of such an estimate is low, but it is the best that can be obtained from the results. Similarly, 31 LAeq,5hr can be obtained from the Friday night results; no estimates can be obtained from the other three nights of monitoring, because 'pizza noise' levels were presumably lower than 31 LAeq,5hr.

The daytime noise criteria are framed in terms of LAeq,16hr from 07 to 23:00hrs; clearly Saturday evening levels would not persist for the whole of the day; therefore, the estimated daytime level for Saturday would be 34 LAeq,16hr, again prior to the improvements in the floor, which are necessary to meet Building Regulations standards.

6.0 ASSESSMENT OF MEASURED LEVELS

6.1 Road Traffic Noise – Considered in Isolation

Condition	Front Living Room	Front Bedroom		
	Day LAeq,16hr	Day LAeq,16hr	Night LAeq,8hr	Night LAmax,F
External Level	66	62	59	78
Open Windows		-15		
Internal Level	51	47	44	63
Criteria	40	40	35	45
Exceedance	11	7	9	18
Criteria Met?	No	No	No	No

Table 7: Indicative External [free-field] & Internal Levels [dBA]

From Table 7 above, it can be seen that the proposed noise limits [Table 3] are not met with open standard glazing; therefore, it will be necessary to have closed windows and alternative means of ventilation.

6.1.1 Bedroom Noise Levels

The following assumptions have been made for bedrooms (**Please inform Martec if any of the assumptions are incorrect**):

- External levels as shown in Table 7
- Spectra as shown in Table 6
- Reverberation time for bedrooms is 0.3s
- Room Areas taken from CBC Drawing 20/21-216-01
- Window Areas taken from elevations submitted with Planning Application 131058/FO/2021
- Wall Brick / block cavity construction
- Glazing Specification as instructed by client – 4/20/4 [Appendix 5]

BS EN 12354-Calcs		Use	Volume	Volume	29.3					
Version	4.4	length			Building Atten dBA (59.0 - 23.5)				35	
© 2018 Martec Environmental Consultants Ltd			width	RT	0.3					
& Acute Acoustics Ltd			height	Octave Band Centre Frequency [Hz]					dBA	
				125	250	500	1k	2k		
External Spectrum Leq (Free Field & Lin)				54.6	56.1	55.6	59.7	54.8	61.9	
Adjustment to Given Level if required									59.0	
External Spectrum Adjusted for Level				51.6	53.1	52.7	56.7	51.9	59.0	
Wall			Area m2	Element Sound Reduction Index [SRI]					Contrib	NR
BS8233 Brick & Block External Wall			6.7	40	44	45	51	56	8.6	5
Drs/Wndws										
4 (20) 4			2.9	21	20	27	38	41	23.3	18
Roof Lights										
None			0.0	0	0	0	0	0	0.0	3
Door										
None			0.0	0	0	0	0	0	0.0	3
Roof										
None			0.0	0	0	0	0	0	0.0	3
Vent Dn,e			# Vents							
Greenwood MA3051 Acoustic Wall vent			1.0	47	46	49	56	66	6.2	2
									dBA	NR
			Internal SPL/dBLin	26.4	28.8	21.6	15.1	6.8	24	18

BS EN 12354-Calcs		Use	Volume	Volume	29.3				
Version	4.4	length					Building Atten dBA (78.0 - 42.0)		36
© 2018 Martec Environmental Consultants Ltd & Acute Acoustics Ltd			width	RT	0.3				
			height	Octave Band Centre Frequency [Hz]					dBA
				125	250	500	1k	2k	
External Spectrum Leq (Free Field & Lin)				64.7	66.6	66.8	71.3	65.7	73.3
Adjustment to Given Level if required									78.0
External Spectrum Adjusted for Level				69.4	71.3	71.5	76.0	70.4	78.0
Wall			Area m2	Element Sound Reduction Index [SRI]					Contrib
BS8233 Brick & Block External Wall			6.7	40	44	45	51	56	27.5
Drs/Wndws									
4 (20) 4			2.9	21	20	27	38	41	41.8
Roof Lights									
None			0.0	0	0	0	0	0	0.0
Door									
None			0.0	0	0	0	0	0	0.0
Roof									
None			0.0	0	0	0	0	0	0.0
Vent Dn,e			# Vents						
Greenwood MA3051 Acoustic Wall vent			1.0	47	46	49	56	66	25.1
									dBA
			Internal SPL/dBLin	44.2	47.0	40.4	34.3	25.4	42

Table 9: Predicted Internal Nighttime Noise Levels - Bedroom [LAmax,F,1s]

6.1.2 Living Room Noise Levels

The predictions are based on the same set of assumptions as for bedrooms except that:

- Reverberation time for living rooms is 0.5s

BS EN 12354-Calcs		Use	Volume	Volume	78.5					
Version	4.4	length				Building Atten dBA (65.6 - 34.1)			31	
© 2018 Martec Environmental Consultants Ltd & Acute Acoustics Ltd			width		RT	0.5				
			height		Octave Band Centre Frequency [Hz]					dBA
					125	250	500	1k	2k	
			External Spectrum Leq (Free Field & Lin)		60.8	61.1	59.9	62.5	58.4	65.3
			Adjustment to Given Level if required							65.6
			External Spectrum Adjusted for Level		61.1	61.4	60.2	62.8	58.8	65.6
Wall			Area m2	Element Sound Reduction Index [SRI]					Contrib	
BS8233 Brick & Block External Wall			14.3	40	44	45	51	56	17.0	
Drs/Wndws										
4 (20) 4			9.0	21	20	27	38	41	34.0	
Roof Lights										
None			0.0	0	0	0	0	0	0.0	
Door										
None			0.0	0	0	0	0	0	0.0	
Roof										
None			0.0	0	0	0	0	0	0.0	
Vent Dn,e			# Vents							
Greenwood MA3051 Acoustic Wall vent			2.0	47	46	49	56	66	14.4	
									dBA	
			Internal SPL/dBLin	38.7	40.0	31.9	23.8	16.5	34	

Table 10: Predicted Internal Daytime Noise Levels – Kit/Liv Room [LAeq,16hr]

From Table 10 above it can be seen that the predicted internal daytime time noise level of **34dB LAeq,16hr**, using the same package of measures as for bedrooms would meet the target criteria of 40dB LAeq,16hr for daytime resting in living rooms.

It should be noted that BS8233:2014 indicates that the accuracy of these predictions is +/- 2dB [Table G1 footnote of BS8233:2014]; for example, the daytime levels in the living room are predicted as 34 LAeq,16hr +/- 2dB.

6.1.3 Other Rooms within Development

The remaining rooms are all further from the source of road traffic noise, Barlow Moor Road, and have a more restricted view; therefore, noise levels will be lower.

6.2 Noise from Pizza Restaurant – Considered in Isolation

As discussed above, the estimated noise level from the pizza restaurant, inside the living room is 34 LAeq,16hr for a Saturday and with the floor in its current condition; however, it will have to improve by at least 4dB to meet Building Regulations requirements. Our previous report [Martec Ref. 20220804 9201 Chorlton SI] contained recommendations on improving the sound insulation, which will improve the sound insulation by at least 4dB in order to meet Building Regulations requirements.

Building Regulations limits are heavily weighted towards low frequency

performance [e.g. music bass notes] and the improvement at mid-and high frequencies should be even better than 4dB. In addition it can be seen from Appendix 6 that the client has examined the floor in some detail and identified issues that will have a bearing on speech sounds, i.e. noise from the pizza restaurant.

In summary the necessary improvements in the floor's performance to meet Building Regulations combined with the treatments identified by the client in Appendix 6 should result in noise from the pizza restaurant falling by more than the 4dB required by Building Regulations alone.

However, for the sake of argument if we assume that 'pizza noise' levels only fall by 4dB, the resulting levels of around 30 LAeq,16hrs [34-4=30] meet the target noise criteria [Table 3 above].

6.2 Noise from Pizza Restaurant & Road Combined

This combination only falls to be considered for the living rooms. The predicted road traffic noise levels of 34 LAeq,16hr +/- 2dB combined with the estimated level of noise from the Pizza Restaurant of 30 LAeq,16hr [after floor complies with Building Regs.], leads to an estimated combined level around 34 to 37 LAeq,16hr depending on the exact performance of the treated floor and existing glazing. The estimated combined level complies with the target noise criteria [Table 3 above].

7.0 DISCUSSION AND CONCLUSIONS

With regard to road traffic noise, the above analysis demonstrates that with the recently installed glazing, the noise targets of Table 3 should be met.

Regarding noise from the pizza restaurant below, this appears to be a 'hubbub of voices' and to occur during the daytime period. The measurement conditions mean that there is significant uncertainty over the exact level of noise and it also appears to vary significantly from day to day. The estimated current level for the busiest day [Saturday] is 34 LAeq,16hr. At the time of the measurements the floor between the first and the ground floor was in a poor condition especially at the front of the building where the measurements were made. Sound insulation tests indicated that the floor did not meet Building Regulations requirements and will have to improve by at least 4 dB $D_{nTw}+C_{tr}$ which should reduce noise from the restaurant by at least 4 dB when combined with the works identified by the client [See Appendix 6]. Therefore, in future noise from the pizza restaurant should not exceed 30 LAeq,16hr even on a Saturday.

The combined daytime internal levels of pizza restaurant and road traffic noise on Saturdays is predicted to be in the region of 34 to 37 LAeq,16hr depending on the exact performance of the installed glazing and improvements to the floor. This combined level meets the target noise levels of Table 3 above.

Accordingly, it is not considered that the noise impact should bar the grant

of outline planning consent for this development.

8.0 RECOMMENDATIONS

For all dwellings, a Mechanical Extract Ventilation (MEV) or Positive Input Ventilation (PIV) system should be provided, which does not allow significant noise to enter from the outside, either because of the system's attenuation or because it vents to a quiet façade. Residents could then occupy these rooms without the need to open windows. For the avoidance of doubt the windows should still remain openable.

If the ventilation strategy requires room vents, these should be Greenwood MA3051 acoustic wall vents [or similar and approved].

As discussed the floors will need to comply with Building Regulations and this should also result in a reduction in noise from the pizza restaurant of at least 4dB; however, the 'Building Regulations' works should be combined with the works identified by the client in Appendix 6.

APPENDIX 1

EXPLANATION OF ACOUSTIC TERMS

The dB or the decibel, is the unit of noise. The number of decibels or the level, is measured using a sound level meter. It is common for the sound level meter to filter or 'weight' the incoming sound so as to mimic the frequency response of the human ear. Such measurements are designated **dB(A)**.

A doubling of the sound is perceived, by most people, when the level has increased by 10 dB(A). The least discernible difference is 2 dB(A). Thus most people cannot distinguish between, say 30 and 31 dB(A).

The Background level of noise is most commonly represented by the level which is exceeded for 90% of the time i.e. the LA90.

If a noise varies over time then the **equivalent continuous level, or LAeq**, is the notional constant level of noise which would contain the same amount of acoustic energy as the time varying noise.

The following table gives an approximate indication of the comparative loudness of various noises expressed in terms of the A weighted scale:

Source of noise	dB(A)	Nature of Noise
Inside Quiet bedroom at night	25-30	Very Quiet
Quiet office	40-45	
Rural background noise	35-45	
Normal conversational level	55-65	
Busy restaurant	65-75	
Inside suburban electric train	70-80	
Hand clap @ 1m	75-85	
HGV accelerating @ 5m away	85-90	Very Loud

APPENDIX 2

QUALIFICATIONS AND EXPERIENCE OF M. A. KENYON

My full name is Melville Alexander Kenyon. I am the principal of the firm of Martec Environmental Consultants Ltd, a consultancy company that specialises in environmental noise assessment and control. I graduated in 1982 with a Bachelor's degree in Engineering and subsequently a Master's degree in Environmental Acoustics. I have been a corporate member of the professional body for noise and vibration specialists, the Institute of Acoustics, since 1988, and have sat on the British Standards Committee dealing with noise in buildings [BS.8233:1999].

I have lectured at Liverpool John Moores University on the Diploma of Acoustics course and at Manchester Metropolitan University on their Environmental Health degree course.

The firm of Martec Environmental Engineering was formed in the 1970's and joined The Association of Noise Consultants in 1996. It is now known as Martec Environmental Consultants Ltd.

Since its formation, Martec has advised many groups of both residents and developers about the problems of noise and vibration in the environment.

APPENDIX 3 REFERENCES

- 1 ProPG: Planning and Noise. – June 2017 – IoA, ANC & CIEH
- 2 BS.8233:1999 “Sound Insulation and noise reduction for buildings – Code of practice.”
- 3 Calculation of Road Traffic Noise (CRTN) – Department of Transport and the Welsh Office, HMSO, 1988, ISBN 0-11-550847-3
- 4 Method for Converting the UK Road Traffic Noise Index $L_{A10,18h}$ to the EU Noise Indices for Road Noise Mapping – TRL/Casella Stanger

www.defra.gov.uk/environment/quality/noise/research/crtn/documents/noise-crtn-update2006.pdf
- 5 Road Vehicles (Construction and Use) Regulations 1986(SI 1986/1078)
- 6 BS EN 12354-3:2000 *Building Acoustics-Estimation of Acoustic Performance in buildings from the performance of elements. Part 3 Airborne sound Insulation against outdoor sound.*
- 7 Road Traffic Forecasts 2015 - DTp March 2015.

APPENDIX 4

DETAILS OF NOISE MEASUREMENTS

A4.1 External Noise Levels [dBA façade]

Date & time	Duration	L _{Amax,F}	L _{Amin}	L _{Aeq}	LA01	LA10	LA50	LA90
17/11/2022 12:15:24	00:15:00	79.9	52.6	64.3	71.8	67.7	62.2	57
17/11/2022 12:30:24	00:15:00	77.9	53.1	65.5	72.8	69.3	63.4	58.3
17/11/2022 12:45:24	00:15:00	78.8	55.6	66.1	74.2	69.5	63.7	59.6
17/11/2022 13:00:24	00:15:00	77.1	55.1	65.3	72.6	68.7	63.3	59.3
17/11/2022 13:15:24	00:15:00	77.5	56.6	66.2	73.4	69.8	63.8	59.5
17/11/2022 13:30:24	00:15:00	84.6	58.2	67.3	75.8	69.9	64.4	60.7
17/11/2022 13:45:24	00:15:00	81.6	59.1	67.1	73.1	70.3	65.1	62.3
17/11/2022 14:00:24	00:15:00	85.8	59.2	67.1	73.1	70.3	65.2	61.8
17/11/2022 14:15:24	00:15:00	78.1	59.1	66.7	73.3	69.9	64.9	61.4
17/11/2022 14:30:24	00:15:00	76.9	58	67.1	73.6	70.3	65.7	62.2
17/11/2022 14:45:24	00:15:00	76.6	56.3	65.9	72.9	68.9	64.4	60.1
17/11/2022 15:00:24	00:15:00	74.7	57.7	66.4	72.9	69.8	64.6	60.8
17/11/2022 15:15:24	00:15:00	75.1	56.8	66.6	73.4	70.2	64.3	60.5
17/11/2022 15:30:24	00:15:00	81.4	52.8	66.4	73.6	70	64.4	57.8
17/11/2022 15:45:24	00:15:00	84.2	50	67	76.7	70.2	64.3	56.7
17/11/2022 16:00:24	00:15:00	75.8	50.2	65	72.2	69.1	62.1	56.2
17/11/2022 16:15:24	00:15:00	76.5	50.4	65.3	72.6	69	63.1	55.2
17/11/2022 16:30:24	00:15:00	74.4	49.6	64.4	71.8	68.5	61.3	54.2
17/11/2022 16:45:24	00:15:00	86.6	54.4	65	72.4	68.4	62.2	58.2
17/11/2022 17:00:24	00:15:00	77.9	50.3	65.5	73	69.5	62.9	55.9
17/11/2022 17:15:24	00:15:00	89.7	50.1	67.6	79.3	69.2	63.6	56.3
17/11/2022 17:30:24	00:15:00	77	50.4	64	71.9	67.8	61.5	56.2
17/11/2022 17:45:24	00:15:00	93.4	52.1	69.4	78.6	69.5	62.9	56.6
17/11/2022 18:00:24	00:15:00	76.3	50.7	63.8	71.5	67.5	61.1	56.1
17/11/2022 18:15:24	00:15:00	76.6	52.5	64.8	72.3	68.6	62.2	57.9
17/11/2022 18:30:24	00:15:00	74.6	51.7	63.9	70.6	67.3	62.2	58.2
17/11/2022 18:45:24	00:15:00	81.7	53.7	65.7	74	69	62.6	57.7
17/11/2022 19:00:24	00:15:00	80.8	55.2	65.6	72.4	69	63.6	59.5
17/11/2022 19:15:24	00:15:00	82.3	52.8	65.4	72.9	69	62.8	58.3
17/11/2022 19:30:24	00:15:00	78.2	54.6	64.4	71.8	67.6	62.3	58.8
17/11/2022 19:45:24	00:15:00	84.1	54.4	65.6	74.6	68.8	62.8	58.3
17/11/2022 20:00:24	00:15:00	77.7	53.7	65	73	68.8	62.2	57.4
17/11/2022 20:15:24	00:15:00	78	54.8	65.2	72.9	68.6	63.1	58.7
17/11/2022 20:30:24	00:15:00	76.1	53.8	65	72.9	68.7	62.4	58.3
17/11/2022 20:45:24	00:15:00	79.8	54.5	66	74	69.4	63.8	59.4
17/11/2022 21:00:24	00:15:00	77	55.2	65.6	72.7	68.9	63.8	59.6
17/11/2022 21:15:24	00:15:00	76.9	54	65.6	74	69.3	62.8	58.3
17/11/2022 21:30:24	00:15:00	78.1	53.6	65.8	73.4	69.5	63.5	58.8
17/11/2022 21:45:24	00:15:00	77.3	52.9	65.6	73.7	69.6	62.4	57.8
17/11/2022 22:00:24	00:15:00	76.5	51.4	65	72.8	68.9	62.2	56.6
17/11/2022 22:15:24	00:15:00	76	49.5	64.6	73.3	68.7	61.1	55.3
17/11/2022 22:30:24	00:15:00	84.4	50.1	65.5	73.7	69.3	61.3	55.6

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17/11/2022 22:45:24	00:15:00	79.5	48.5	64.3	73.7	68.4	59.3	53.1
17/11/2022 23:00:24	00:15:00	80.2	49.1	64.8	74.4	69	58.9	53
17/11/2022 23:15:24	00:15:00	77.4	45.3	64.6	73.9	69.3	57.9	51
17/11/2022 23:30:24	00:15:00	76.4	43.6	63.7	73.8	68.4	55.7	48.9
17/11/2022 23:45:24	00:15:00	77.8	44.5	64.3	73.9	69	56.9	50
18/11/2022 00:00:24	00:15:00	77	43	62.4	73.2	67.3	53.3	47.8
18/11/2022 00:15:24	00:15:00	79.3	42.8	62.1	73.3	66.5	52.5	47
18/11/2022 00:30:24	00:15:00	80.2	40.6	62.5	73.8	67.3	51.8	45.7
18/11/2022 00:45:24	00:15:00	76.1	42.1	60.8	72.3	64.9	52	45.7
18/11/2022 01:00:24	00:15:00	78.4	41.1	60.4	72.1	64	50.1	44.7
18/11/2022 01:15:24	00:15:00	77.4	39.6	59.3	71.6	62.2	50.2	43.9
18/11/2022 01:30:24	00:15:00	78.5	38.6	60.3	73.5	61.8	47	42
18/11/2022 01:45:24	00:15:00	83	38	59.7	73	59.9	46.8	39.8
18/11/2022 02:00:24	00:15:00	82.1	39.2	58.6	71.3	58.4	46.4	41.5
18/11/2022 02:15:24	00:15:00	82.6	38.2	59	71.7	59	44.9	39.7
18/11/2022 02:30:24	00:15:00	74.9	39.2	59	71.5	62	47.1	41.7
18/11/2022 02:45:24	00:15:00	76.1	38.9	56.4	70.4	55.7	44.8	40.9
18/11/2022 03:00:24	00:15:00	76.5	38.4	56.2	71.6	52	44.2	40
18/11/2022 03:15:24	00:15:00	77.7	39.2	57.9	72	57.1	44.6	41
18/11/2022 03:30:24	00:15:00	76.3	38.7	57.9	71.6	57.7	44.4	40.2
18/11/2022 03:45:24	00:15:00	81.7	39.1	59.3	72.4	58.7	44.9	41.2
18/11/2022 04:00:24	00:15:00	75.7	39.6	56.4	70	55.6	44.4	41
18/11/2022 04:15:24	00:15:00	78	39.1	58.4	71.1	59.2	45.2	40.8
18/11/2022 04:30:24	00:15:00	98.4	40.3	69	73.2	69.9	54.5	44.7
18/11/2022 04:45:24	00:15:00	76.8	39.9	63.3	74.2	68.8	48.2	42.6
18/11/2022 05:00:24	00:15:00	79.5	40.5	59.2	72.1	58.8	46.6	42.5
18/11/2022 05:15:24	00:15:00	79.1	41.4	60.3	73.5	61.8	48.3	44.3
18/11/2022 05:30:24	00:15:00	79.9	41.3	58.8	72.1	59.1	47.7	43.8
18/11/2022 05:45:24	00:15:00	76.8	43.9	62.2	74	66.9	52.6	46
18/11/2022 06:00:24	00:15:00	80.7	45.2	62.5	73.2	67.4	53	47.7
18/11/2022 06:15:24	00:15:00	87.2	44.9	62.2	73	65	53.5	47.7
18/11/2022 06:30:24	00:15:00	82	48.9	67.2	75.8	72	62	53.3
18/11/2022 06:45:24	00:15:00	77.5	47.5	63.9	74.5	68.5	56.6	50.5
18/11/2022 07:00:24	00:15:00	79.3	48.1	66.3	76.1	71.1	60.2	53.5
18/11/2022 07:15:24	00:15:00	81.7	49.2	65.4	74.8	69.9	58.8	52.4
18/11/2022 07:30:24	00:15:00	78.3	49.9	66.5	74.8	70.9	62.1	55.5
18/11/2022 07:45:24	00:15:00	78.9	51.9	66.2	74.5	70.6	62.7	56.7
18/11/2022 08:00:24	00:15:00	80.4	50.8	65.8	74.4	70.4	60.6	56.7
18/11/2022 08:15:24	00:15:00	74.9	51.3	65.9	73.1	70.3	62.2	56.2
18/11/2022 08:30:24	00:15:00	81.5	49.7	65.9	73.9	70	62.5	56.3
18/11/2022 08:45:24	00:15:00	76	51.8	65.6	72.9	69.6	62.5	56.7
18/11/2022 09:00:24	00:15:00	81.8	50.8	66.6	75.4	70.4	62.9	56.4
18/11/2022 09:15:24	00:15:00	77.2	51.1	65.1	73.3	68.8	62.3	56.2
18/11/2022 09:30:24	00:15:00	78	49.7	64.6	72.7	68.2	62.2	53.5
18/11/2022 09:45:24	00:15:00	76.5	49.4	65.6	72.8	69.6	63	55.5
18/11/2022 10:00:24	00:15:00	82.6	50.2	64.8	71.9	68.6	62	55.4
18/11/2022 10:15:24	00:15:00	77.9	51.3	64.7	72.8	68.5	62	56.1
18/11/2022 10:30:24	00:15:00	87	54.6	68.1	78.1	70.7	64.4	58.8

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18/11/2022 10:45:24	00:15:00	79.6	54.1	65.6	72.9	69.2	63.1	58.8
18/11/2022 11:00:24	00:15:00	77	53.4	65.9	73.1	69.5	63.9	59
18/11/2022 11:15:24	00:15:00	87	55.9	68.4	79.2	70.4	64.5	59.6
18/11/2022 11:30:24	00:15:00	80.4	55.8	65.2	71.9	68.3	63.8	59.9
18/11/2022 11:45:24	00:15:00	78.2	53.8	65.2	72.1	68.4	63.5	59.5
18/11/2022 12:15:26	00:15:00	78.3	54	64	72.7	66.8	61.6	57.8
18/11/2022 12:30:26	00:15:00	86.2	52.9	64.4	72.1	67.5	61.1	57.2
18/11/2022 12:45:26	00:15:00	77.6	51.2	65.1	72.6	68.7	62.9	56.2
18/11/2022 13:00:26	00:15:00	76.3	50.2	64.2	71.9	68	61.7	56.3
18/11/2022 13:15:26	00:15:00	80.8	51.9	64.8	73	68.2	61.9	56.3
18/11/2022 13:30:26	00:15:00	96	51.1	71.4	80.8	69	61.5	57.6
18/11/2022 13:45:26	00:15:00	80.7	53.4	65.1	72.5	68.6	62.6	58
18/11/2022 14:00:26	00:15:00	75.5	51.8	64.6	71.3	68.3	62.9	56.5
18/11/2022 14:15:26	00:15:00	74.2	49.9	64	71.2	67.6	61.8	55.3
18/11/2022 14:30:26	00:15:00	76.9	51.3	63.2	71	66.6	60.8	56.6
18/11/2022 14:45:26	00:15:00	76.8	51.4	64.3	72.5	68.2	61.3	55.6
18/11/2022 15:00:26	00:15:00	88.2	51.7	64	70.9	67	61.8	56.5
18/11/2022 15:15:26	00:15:00	78.1	50.5	64.6	72.4	68.3	62.1	56
18/11/2022 15:30:26	00:15:00	84.2	53.9	64.8	72.3	68	62.6	57.4
18/11/2022 15:45:26	00:15:00	81.1	52.3	63.8	71	66.8	61.9	56.5
18/11/2022 16:00:26	00:15:00	83.5	50.6	64.1	71.9	67.1	60.6	56
18/11/2022 16:15:26	00:15:00	82.4	50.4	64.8	72.9	68.3	61.3	56.9
18/11/2022 16:30:26	00:15:00	87.9	52.4	64.8	71.6	68.3	62.3	57
18/11/2022 16:45:26	00:15:00	95.9	52.3	65.9	71.3	68.3	62.6	58
18/11/2022 17:00:26	00:15:00	76.1	51.3	64.7	71.7	68.4	62.6	57.3
18/11/2022 17:15:26	00:15:00	76.3	54	64.4	71.6	67.8	62.4	57.9
18/11/2022 17:30:26	00:15:00	74.6	54.4	64.6	71.7	68	62.5	58.3
18/11/2022 17:45:26	00:15:00	85.4	52	65.4	72.7	68.2	61.8	57.3
18/11/2022 18:00:26	00:15:00	81.8	54.7	65.1	74.9	67.6	62.5	58.2
18/11/2022 18:15:26	00:15:00	74.4	52.7	63.5	70.4	67.1	61.2	57.5
18/11/2022 18:30:26	00:15:00	76.7	53.3	64.3	72.5	67.4	62.3	58.5
18/11/2022 18:45:26	00:15:00	77.2	54.3	64.2	71.1	67.3	62.5	58.7
18/11/2022 19:00:26	00:15:00	72.2	55.9	63.8	69.6	66.8	62.6	58.8
18/11/2022 19:15:26	00:15:00	77.3	55.3	64.5	71.5	67.5	62.9	59.4
18/11/2022 19:30:26	00:15:00	77.9	55.9	64.7	70.8	68	63	59.3
18/11/2022 19:45:26	00:15:00	82	55.9	65.4	72.4	68.2	63.8	59.9
18/11/2022 20:00:26	00:15:00	81.9	54.7	65.6	72.5	68.3	64.1	60.4
18/11/2022 20:15:26	00:15:00	85.8	55.8	64.9	70.8	67.4	63.6	60.1
18/11/2022 20:30:26	00:15:00	93.4	54.7	66.5	72.6	68.5	64	60.2
18/11/2022 20:45:26	00:15:00	74.4	55	65	72.4	68.5	63.1	59
18/11/2022 21:00:26	00:15:00	81.2	54.8	65.4	72.4	68.6	63.7	59.1
18/11/2022 21:15:26	00:15:00	78.2	55.5	65.3	73.1	68.3	63.6	59.6
18/11/2022 21:30:26	00:15:00	76.6	56	65.1	72.6	68.5	63	58.8
18/11/2022 21:45:26	00:15:00	79.6	52.7	65.6	74.4	68.7	63.2	58.6
18/11/2022 22:00:26	00:15:00	76.5	52.9	65.7	73.2	69.9	63	57.2
18/11/2022 22:15:26	00:15:00	77	52.4	64.3	72.6	67.8	61.5	56.5
18/11/2022 22:30:26	00:15:00	82.3	51.2	65.5	75.2	68.8	61.2	55.3
18/11/2022 22:45:26	00:15:00	76.5	50.1	64.2	72.8	68.4	60.2	54

18/11/2022 23:00:26	00:15:00	83.5	50.3	63.7	72.2	67.2	59.1	54.5
18/11/2022 23:15:26	00:15:00	83.1	49.9	65.1	74.8	68.8	59.2	53.6
18/11/2022 23:30:26	00:15:00	83.8	49.7	64.6	73.5	69	59.6	52.9
18/11/2022 23:45:26	00:15:00	82.6	50.7	64	73.6	68.2	57.6	53.4
19/11/2022 00:00:26	00:15:00	76.6	51.4	64.2	73	69.1	57.8	53.4
19/11/2022 00:15:26	00:15:00	78.5	50.3	63.8	73.2	68.6	56.8	53
19/11/2022 00:30:26	00:15:00	76.2	50.3	62.6	73	66.9	56.1	52.4
19/11/2022 00:45:26	00:15:00	79.4	49.4	64.5	74.3	68.7	58.7	53.4
19/11/2022 01:00:26	00:15:00	78	48.2	64.3	73.8	68.6	59.4	54.9
19/11/2022 01:15:26	00:15:00	79.8	45.1	63.6	74.2	68.3	55.6	49.7
19/11/2022 01:30:26	00:15:00	75.3	44.1	61.9	72.9	66.5	53.6	48.2
19/11/2022 01:45:26	00:15:00	81.3	44.3	62.9	73.6	67.4	53.5	48.1
19/11/2022 02:00:26	00:15:00	77.5	41.3	61.8	73.8	65.6	51.9	46.4
19/11/2022 02:15:26	00:15:00	79.7	39.8	59.6	72	62	48.6	43.3
19/11/2022 02:30:26	00:15:00	76.6	39.3	60.3	72.8	63.5	48.6	42.4
19/11/2022 02:45:26	00:15:00	87.2	39.6	63.3	74	65.8	50.5	44
19/11/2022 03:00:26	00:15:00	75.9	39.9	60.5	72.3	64.9	50.5	44.4
19/11/2022 03:15:26	00:15:00	75.8	39.8	58.9	70.9	62.1	48.7	43
19/11/2022 03:30:26	00:15:00	74.9	38.8	59.2	71.3	63	48.6	42.4
19/11/2022 03:45:26	00:15:00	77	37.9	59.7	73.2	60.7	46.6	40.2
19/11/2022 04:00:26	00:15:00	76.9	38.7	59.3	72.5	60.9	47.2	42.5
19/11/2022 04:15:26	00:15:00	77.6	38.4	59	72.6	58.8	47.7	42.1
19/11/2022 04:30:26	00:15:00	78.4	38.1	58.6	72.4	58.4	45	40.6
19/11/2022 04:45:26	00:15:00	75.4	38.2	58.7	71.7	59.9	46.7	41.3
19/11/2022 05:00:26	00:15:00	80.5	38.7	59.4	72.4	60.9	46.5	42.2
19/11/2022 05:15:26	00:15:00	77.4	38.6	58.9	71.9	60.6	45.9	40.4
19/11/2022 05:30:26	00:15:00	81.6	38.3	60.3	73.9	59.9	46.8	40.5
19/11/2022 05:45:26	00:15:00	79.4	40.3	61.1	72.8	64.5	49.5	43.8
19/11/2022 06:00:26	00:15:00	82.4	40.6	62.3	74.4	64.6	48.7	42.7
19/11/2022 06:15:26	00:15:00	84.7	38.9	61.1	72.3	62.8	48.8	42.4
19/11/2022 06:30:26	00:15:00	80.6	40.3	61.4	73	65.8	50.5	44.1
19/11/2022 06:45:26	00:15:00	79.2	40.6	62.1	74.5	65.4	50.8	42.9
19/11/2022 07:00:26	00:15:00	84.3	40.1	61.6	72.4	66	51.1	45.4
19/11/2022 07:15:26	00:15:00	82.8	44.3	64	74.6	68.6	55.7	50.1
19/11/2022 07:30:26	00:15:00	78.1	43.6	63.4	74.5	68	54.6	49.1
19/11/2022 07:45:26	00:15:00	82.7	42.1	64	73.7	68.4	56.7	49.1
19/11/2022 08:00:26	00:15:00	87.8	43.8	66.2	76.1	70.4	59.1	50.4
19/11/2022 08:15:26	00:15:00	78	44.2	65.5	74.4	70.3	59.8	49.8
19/11/2022 08:30:26	00:15:00	79.1	46.4	65.2	74.3	70.2	58	51.2
19/11/2022 08:45:26	00:15:00	76.3	44.8	65.4	73.5	70	61.2	51.2
19/11/2022 09:00:26	00:15:00	76.8	43.3	64.4	72.8	69.1	59.5	51.1
19/11/2022 09:15:26	00:15:00	78.1	45.4	65.3	74.4	70.1	59.1	50.4
19/11/2022 09:30:26	00:15:00	81.1	48.1	65.6	74.2	69.7	61.9	53.8
19/11/2022 09:45:26	00:15:00	85.4	46.3	66.1	75.1	70	61.3	54
19/11/2022 10:00:26	00:15:00	81.4	47	65.5	73.3	69.3	62.6	54.7
19/11/2022 10:15:26	00:15:00	77.7	45.3	64.9	72.9	68.8	62.2	53.2
19/11/2022 10:30:26	00:15:00	77.2	46.9	65.4	73.6	69.2	62.9	54.2
19/11/2022 10:45:26	00:15:00	77.9	47.3	64.4	72.8	68.3	61.2	52.8

19/11/2022 11:00:26	00:15:00	74.7	47.5	64.5	71.8	68.6	61.5	53.2
19/11/2022 11:15:26	00:15:00	78.2	46.5	63.6	71.6	67.5	60.7	54.3
19/11/2022 11:30:26	00:15:00	74.9	44.9	64.3	72.6	68.3	61	51.5
19/11/2022 11:45:26	00:15:00	78.4	43.8	64.8	72.8	69	61.3	52.4
19/11/2022 12:15:30	00:15:00	75.5	45.6	63.6	71.9	67.4	60.6	53.3
19/11/2022 12:30:30	00:15:00	75.1	45.9	63.9	71.6	67.7	61.6	53.8
19/11/2022 12:45:30	00:15:00	78.5	45.2	64.3	72.8	68.3	60.7	52.6
19/11/2022 13:00:30	00:15:00	76.6	46.5	64.6	72.7	68.6	61.6	54.4
19/11/2022 13:15:30	00:15:00	76.6	48.5	64.1	72.8	68	60.9	53.9
19/11/2022 13:30:30	00:15:00	80.4	48.6	64	72.4	67.8	60.5	53.8
19/11/2022 13:45:30	00:15:00	81.2	49.6	64.6	72.9	68	62	55.2
19/11/2022 14:00:30	00:15:00	79.7	47.6	64.6	71.9	68.4	62.4	56
19/11/2022 14:15:30	00:15:00	74.4	49.9	64.3	72	68.1	61.7	56
19/11/2022 14:30:30	00:15:00	78.5	52	65.1	72.5	69.1	62.7	56.8
19/11/2022 14:45:30	00:15:00	78.7	49.5	64.9	73.4	68.8	61.6	56
19/11/2022 15:00:30	00:15:00	78.3	49.9	64.7	71.9	68.2	62.6	56.2
19/11/2022 15:15:30	00:15:00	86.8	49.8	65.7	73.6	68.5	61.8	54.8
19/11/2022 15:30:30	00:15:00	84.3	48.8	64	71.1	67.4	61.9	55.7
19/11/2022 15:45:30	00:15:00	80.8	49.6	64.8	73.7	68.5	61.6	55.5
19/11/2022 16:00:30	00:15:00	74.7	49.5	64	70.7	67.6	62.2	56.7
19/11/2022 16:15:30	00:15:00	83	49.3	63.9	72.3	67	61.5	56.9
19/11/2022 16:30:30	00:15:00	73.7	48.7	63.7	71.3	67.5	61.3	55.5
19/11/2022 16:45:30	00:15:00	73	51.3	63.2	69.7	66.7	61.6	57
19/11/2022 17:00:30	00:15:00	76.4	50.2	63.4	71.2	66.9	61.2	56.3
19/11/2022 17:15:30	00:15:00	82.3	51.7	64	71.6	66.9	61.9	56.9
19/11/2022 17:30:30	00:15:00	80.5	52.5	64.1	71.9	67.3	61.9	57.2
19/11/2022 17:45:30	00:15:00	77.7	50.6	64.5	72.6	68.1	62	56
19/11/2022 18:00:30	00:15:00	86.5	52	65.8	75.3	68.1	63.2	57.3
19/11/2022 18:15:30	00:15:00	76.2	51.8	64.3	71.6	67.4	62.5	58.4
19/11/2022 18:30:30	00:15:00	74.9	50.3	64.9	71.7	68.2	63.4	58.8
19/11/2022 18:45:30	00:15:00	79.4	55.6	65.1	71.8	67.9	63.5	59.7
19/11/2022 19:00:30	00:15:00	89.5	52.9	65.7	72.8	68.2	63.7	59.4
19/11/2022 19:15:30	00:15:00	85	56	65.6	73.8	67.7	63.5	59.9
19/11/2022 19:30:30	00:15:00	81.5	53.1	64.8	71.4	67.3	63.1	59.4
19/11/2022 19:45:30	00:15:00	81.5	53.9	64.9	72.6	68.2	62.4	58.1
19/11/2022 20:00:30	00:15:00	84.5	55.2	65	72.2	67.8	63.2	59
19/11/2022 20:15:30	00:15:00	81.8	54.8	66	73.8	68.8	64.3	60
19/11/2022 20:30:30	00:15:00	76	54.3	65	71.8	67.9	63.9	60.1
19/11/2022 20:45:30	00:15:00	84.9	56.4	66.2	74.2	69	64.2	60.1
19/11/2022 21:00:30	00:15:00	76.1	54.6	65.4	71.9	68.7	63.9	59.3
19/11/2022 21:15:30	00:15:00	77.2	55.2	65.1	72	68.3	63.3	59.1
19/11/2022 21:30:30	00:15:00	85.7	54.1	65.7	73.4	68.7	63.5	59
19/11/2022 21:45:30	00:15:00	83.4	53.7	65	73.2	68.2	62.3	58
19/11/2022 22:00:30	00:15:00	75.8	51.2	64	71.8	67.9	60.9	56.3
19/11/2022 22:15:30	00:15:00	75.4	50.1	63.5	71.3	67.4	60.5	55.3
19/11/2022 22:30:30	00:15:00	86.1	49.9	65.1	72.7	68.1	61	54.6
19/11/2022 22:45:30	00:15:00	91.4	49.2	66	74.7	67.7	60.4	53.4
19/11/2022 23:00:30	00:15:00	79.5	48.7	64.2	73.7	68.4	59	52.7

19/11/2022 23:15:30	00:15:00	84.8	48.4	64.8	74.6	68.6	58.2	52
19/11/2022 23:30:30	00:15:00	76.2	47.8	63.3	72.8	67.9	56.9	51.3
19/11/2022 23:45:30	00:15:00	77.1	46.5	63.9	73.3	68.7	57	51.2
20/11/2022 00:00:30	00:15:00	83.3	45.9	64.7	74.7	68.7	56.6	50.7
20/11/2022 00:15:30	00:15:00	78.5	45.4	64.2	73.6	69.2	56.3	50
20/11/2022 00:30:30	00:15:00	82.3	44.2	63.3	72.9	67.9	55.3	49.7
20/11/2022 00:45:30	00:15:00	80.6	46.4	63.9	73.9	68.5	55.9	50.4
20/11/2022 01:00:30	00:15:00	78.7	45.2	63	73	67.7	55.3	49.4
20/11/2022 01:15:30	00:15:00	82.8	47	65.2	74.9	69.8	57.8	52
20/11/2022 01:30:30	00:15:00	80.4	46.2	64	75.2	68.9	54.6	50.2
20/11/2022 01:45:30	00:15:00	76.6	44.3	63.3	73	68.5	55.5	50.2
20/11/2022 02:00:30	00:15:00	75.4	43.6	63.2	72.8	68.4	55.4	47.6
20/11/2022 02:15:30	00:15:00	88.7	44.3	66.3	78	68.1	53.7	48.3
20/11/2022 02:30:30	00:15:00	80.8	41.7	63.2	74.1	67.8	54.6	47.7
20/11/2022 02:45:30	00:15:00	82.2	40.6	62	73.2	65.3	52.1	44.5
20/11/2022 03:00:30	00:15:00	74.8	38.5	58.5	71.3	60.7	49.6	42.3
20/11/2022 03:15:30	00:15:00	79.7	46.8	63.1	74	67.6	55.7	51.9
20/11/2022 03:30:30	00:15:00	80.5	44.7	61.7	74.4	63.7	52.8	48.8
20/11/2022 03:45:30	00:15:00	81.8	43	63.1	74.7	66.7	53.4	47.8
20/11/2022 04:00:30	00:15:00	77.8	41.9	60.4	72.5	63.4	50.9	46.3
20/11/2022 04:15:30	00:15:00	76	43.4	60.8	72.9	64.3	50.7	46.3
20/11/2022 04:30:30	00:15:00	75.1	40.8	60.8	72.7	64.9	50	44.2
20/11/2022 04:45:30	00:15:00	84.1	38.8	61.8	74	64.7	48	42.4
20/11/2022 05:00:30	00:15:00	77.8	39.1	59.7	73.5	59.4	46.8	42.4
20/11/2022 05:15:30	00:15:00	79.6	40.6	59.5	73.6	58	47.1	42.7
20/11/2022 05:30:30	00:15:00	77.7	42.5	60.9	73.5	63.6	48.9	45
20/11/2022 05:45:30	00:15:00	76.7	42.3	59.8	73.2	61	48.2	44.4
20/11/2022 06:00:30	00:15:00	77.6	41	60.5	73.2	63.2	48.3	43.6
20/11/2022 06:15:30	00:15:00	76	41.5	59.7	72.8	60.8	49.1	44.3
20/11/2022 06:30:30	00:15:00	77.9	43.3	60.4	72.7	62.8	49.2	45.3
20/11/2022 06:45:30	00:15:00	77.3	43.3	59.8	73.1	61.2	49.8	46.2
20/11/2022 07:00:30	00:15:00	77.6	44.8	61.4	73.1	65.4	51.8	47.2
20/11/2022 07:15:30	00:15:00	79.7	45.5	63.1	74.7	67.7	53.1	47.9
20/11/2022 07:30:30	00:15:00	75.5	44.7	61	72.9	64.9	52.6	47.6
20/11/2022 07:45:30	00:15:00	78.1	44.1	61.6	73.4	65.4	52.1	46.8
20/11/2022 08:00:30	00:15:00	76.9	44.9	62.4	74	66.9	53.1	48.5
20/11/2022 08:15:30	00:15:00	81.2	45.9	64.1	74.9	68.5	55.5	50
20/11/2022 08:30:30	00:15:00	78.4	46.6	63.3	73.9	68.1	54.3	48.8
20/11/2022 08:45:30	00:15:00	77.6	46.7	62	72.9	66.4	54.1	49.2
20/11/2022 09:00:30	00:15:00	82.1	47.5	65.8	76.5	70.3	58.5	51.2
20/11/2022 09:15:30	00:15:00	77.3	49.8	65.2	74.3	69.9	59.6	53.1
20/11/2022 09:30:30	00:15:00	77.9	48.6	65.2	73.9	70	59.6	53.1
20/11/2022 09:45:30	00:15:00	76.7	49.8	65.5	73.9	70.2	60.1	53.9
20/11/2022 10:00:30	00:15:00	75.2	48.8	64.5	73.3	69.4	58.7	52.2
20/11/2022 10:15:30	00:15:00	79.2	48.6	66.7	75.8	71.3	60.7	53.2
20/11/2022 10:30:30	00:15:00	77.2	49.2	65.2	73.7	69.6	61.1	53.8
20/11/2022 10:45:30	00:15:00	75.3	48.1	64.9	73.4	69.6	60.7	51.5
20/11/2022 11:00:30	00:15:00	76.2	48.4	65.6	73.6	70.1	62.1	52.8

20/11/2022 11:15:30	00:15:00	75.1	47.5	65.1	72.7	69.7	61.2	53.2
20/11/2022 11:30:30	00:15:00	76.2	47.6	65.1	73.3	69.3	61.6	53.3
20/11/2022 11:45:30	00:15:00	75.5	47	64.5	72.3	68.7	61.3	53
20/11/2022 12:15:26	00:15:00	78.1	48.7	64.6	72.8	68.7	61.5	53.9
20/11/2022 12:30:26	00:15:00	84.1	49.5	64.8	73.1	68.4	60.7	55.1
20/11/2022 12:45:26	00:15:00	80.4	49.3	65	73.8	68.7	61.5	55.5
20/11/2022 13:00:26	00:15:00	76.8	49.8	64.1	71.6	68.1	61.2	55.6
20/11/2022 13:15:26	00:15:00	79.5	50.2	64.8	72	68.7	62.2	56.9
20/11/2022 13:30:26	00:15:00	75.9	50.1	64.9	72	68.6	62.6	57
20/11/2022 13:45:26	00:15:00	76.6	50.8	64.4	72.8	68.2	61.6	56.3
20/11/2022 14:00:26	00:15:00	76	51.7	64.8	72.1	68.7	62.4	57
20/11/2022 14:15:26	00:15:00	74.1	50.6	64.5	71.5	68.5	61.6	56.4
20/11/2022 14:30:26	00:15:00	77.1	51.4	64.3	71.6	68.3	61.7	55.9
20/11/2022 14:45:26	00:15:00	81	49.7	64.5	72.5	68.1	61.6	55.8
20/11/2022 15:00:26	00:15:00	80.9	50.2	64.7	72.4	68.5	61.7	56.5
20/11/2022 15:15:26	00:15:00	77.5	54.4	66.5	72.9	70.1	64.7	58.7
20/11/2022 15:30:26	00:15:00	74.5	55.6	66.2	72.7	69.8	64.5	60
20/11/2022 15:45:26	00:15:00	78.1	54.1	66	73.4	69.5	63.5	59.7
20/11/2022 16:00:26	00:15:00	92.6	50.5	69.9	83.5	69.5	62.7	56.9
20/11/2022 16:15:26	00:15:00	82.5	49	65.7	73.3	69.6	62.9	55.2
20/11/2022 16:30:26	00:15:00	75.4	51.1	64	71	67.7	61.7	56.3
20/11/2022 16:45:26	00:15:00	77.8	49.4	64.8	73	68.8	61.2	55.5
20/11/2022 17:00:26	00:15:00	74.5	50	64.6	72	68.6	62	56.2
20/11/2022 17:15:26	00:15:00	76.7	52.4	65.6	72.8	69.5	63	58
20/11/2022 17:30:26	00:15:00	86.8	52.5	64.9	72.4	68.7	62	57.2
20/11/2022 17:45:26	00:15:00	79.4	50.4	65.1	72.4	68.9	62.9	56.5
20/11/2022 18:00:26	00:15:00	90.9	51	65.4	71.8	68.5	62.2	56
20/11/2022 18:15:26	00:15:00	79.1	52.9	64.7	72.5	68.1	62.8	57.4
20/11/2022 18:30:26	00:15:00	76.8	51.9	63.9	71.3	67.7	61.3	56.1
20/11/2022 18:45:26	00:15:00	82.4	53.8	65.7	73.3	69.1	63.7	58.6
20/11/2022 19:00:26	00:15:00	76.3	52.5	65.4	72.9	69.3	62.9	57.4
20/11/2022 19:15:26	00:15:00	81	52.2	65.7	72.5	69.3	63.6	58
20/11/2022 19:30:26	00:15:00	87.8	52.3	66.2	73.9	69.4	63.2	57.5
20/11/2022 19:45:26	00:15:00	82	51.9	65.1	72.8	68.4	62.8	58
20/11/2022 20:00:26	00:15:00	91.8	54.8	67.7	73.5	69.9	63.4	58.7
20/11/2022 20:15:26	00:15:00	77.2	52	65.5	73.4	69.2	63	58.3
20/11/2022 20:30:26	00:15:00	77	52.6	65	72.8	68.9	62.3	57.2
20/11/2022 20:45:26	00:15:00	76.9	51.2	64.9	72.5	68.7	62.1	56.4
20/11/2022 21:00:26	00:15:00	87.8	50.5	65.3	75.1	69.1	60.4	55.4
20/11/2022 21:15:26	00:15:00	82.2	49.7	64.9	73.7	68.8	60.8	55.2
20/11/2022 21:30:26	00:15:00	84.3	48.4	65	73.9	69.1	59.5	53.9
20/11/2022 21:45:26	00:15:00	75	47	63.9	72.1	68.3	60	53.7
20/11/2022 22:00:26	00:15:00	81.3	49.5	65.4	75.3	69.8	59.2	53.6
20/11/2022 22:15:26	00:15:00	77.5	48.9	64.1	72.9	68.5	58.5	52.5
20/11/2022 22:30:26	00:15:00	76.9	48.1	64.9	73.6	69.7	59.3	53
20/11/2022 22:45:26	00:15:00	74.9	47.2	63.4	72.1	68.1	57.5	51.5
20/11/2022 23:00:26	00:15:00	79.1	47.4	64.4	74.8	69.4	55.5	50.2
20/11/2022 23:15:26	00:15:00	99.2	48.4	68.9	76.8	68.5	56.6	51

20/11/2022 23:30:26	00:15:00	76.2	46.1	62.7	72.5	67.5	55.3	50.1
20/11/2022 23:45:26	00:15:00	78.7	45.6	62.2	73	67	54.3	48.7
21/11/2022 00:00:26	00:15:00	83.2	46.1	63.4	74.5	67.7	53.4	48.6
21/11/2022 00:15:26	00:15:00	79.5	43.5	62.4	73.7	67.1	52.8	47.9
21/11/2022 00:30:26	00:15:00	79.7	42.1	61.5	74.1	64.3	51	45.8
21/11/2022 00:45:26	00:15:00	77.6	42.8	61	73.8	63.1	49.2	45
21/11/2022 01:00:26	00:15:00	77.3	39.3	58.8	72.6	57.2	47.4	42.8
21/11/2022 01:15:26	00:15:00	76.2	38.9	58.3	72.1	57.8	47.7	42.7
21/11/2022 01:30:26	00:15:00	77.6	39.5	59.5	72.4	61.2	47.4	43.6
21/11/2022 01:45:26	00:15:00	78.7	39.8	58.1	71.7	58.4	47.8	44.2
21/11/2022 02:00:26	00:15:00	78	40.9	59.4	72.7	58.9	47.2	44.3
21/11/2022 02:15:26	00:15:00	77.3	40.4	56.9	71.2	53.4	45.9	43.3
21/11/2022 02:30:26	00:15:00	82.3	41.2	58.5	71.3	56.4	47.1	44
21/11/2022 02:45:26	00:15:00	79.5	40	57.9	71.3	56.5	45.5	42
21/11/2022 03:00:26	00:15:00	75	42.9	55.3	69.6	53	46.5	44.3
21/11/2022 03:15:26	00:15:00	80.3	40.9	58.8	72.8	54.8	45.7	43.4
21/11/2022 03:30:26	00:15:00	74.2	41.5	50.9	59.9	50.6	46.3	44.3
21/11/2022 03:45:26	00:15:00	81.3	41.7	59.5	74.3	56	46.1	43.6
21/11/2022 04:00:26	00:15:00	74.5	40.9	57.5	71.8	56.5	45.7	43
21/11/2022 04:15:26	00:15:00	77.5	37	57.3	71.6	53.6	43.3	38.4
21/11/2022 04:30:26	00:15:00	79.1	39.6	60.9	74	61.6	44.8	42.3
21/11/2022 04:45:26	00:15:00	79.3	41.4	58.7	70.9	59.3	47.5	45.2
21/11/2022 05:00:26	00:15:00	82.1	42.4	59.5	72.7	59.6	45.5	43.3
21/11/2022 05:15:26	00:15:00	80.7	38.7	63.9	74.8	66.7	52	42.2
21/11/2022 05:30:26	00:15:00	83.1	41.4	60.9	72.1	63.6	49.5	44.4
21/11/2022 05:45:26	00:15:00	78.6	44.6	62.9	75.4	66.2	52.4	47.2
21/11/2022 06:00:26	00:15:00	80.4	43.8	62.1	73.9	66.2	51.7	46.7
21/11/2022 06:15:26	00:15:00	80.6	44.1	63.4	74.9	67.4	53.5	47.6
21/11/2022 06:30:26	00:15:00	79.3	44.9	64.5	75.4	69.3	55.3	48.4
21/11/2022 06:45:26	00:15:00	77.5	47.2	64.5	75	69.6	55.2	49.6
21/11/2022 07:00:26	00:15:00	78.3	48.2	66.3	75	71.2	59.5	51.8
21/11/2022 07:15:26	00:15:00	78.3	50.5	66.3	74.9	70.8	61.5	53.3
21/11/2022 07:30:26	00:15:00	79	48.5	67	76.3	71.6	60.7	54.3
21/11/2022 07:45:26	00:15:00	77.5	49.3	65.8	73.8	70.1	62.3	55.4
21/11/2022 08:00:26	00:15:00	76.8	48.5	66	74.2	70.9	60.1	55
21/11/2022 08:15:26	00:15:00	79	48.3	66.6	74.7	71	62.9	55.2
21/11/2022 08:30:26	00:15:00	75.8	52.8	66.5	73.8	70.9	63.3	57.5
21/11/2022 08:45:26	00:15:00	78.8	51.1	66.7	74.7	71.1	61.8	56.6
21/11/2022 09:00:26	00:15:00	85.8	51.5	66	74.2	70.2	62	56.7
21/11/2022 09:15:26	00:15:00	76.2	50.1	66.1	73.8	70.5	62.2	56
21/11/2022 09:30:26	00:15:00	80	49.7	65.8	73.9	69.8	62.7	56.2
21/11/2022 09:45:26	00:15:00	87	48.7	66.8	74	69.9	64.2	57
21/11/2022 10:00:26	00:15:00	86.3	48.4	64.9	73.5	68.8	60.6	53.8
21/11/2022 10:15:26	00:15:00	76.8	48.6	65	73.7	69.3	61.3	53.8
21/11/2022 10:30:26	00:15:00	78.8	49.3	64.7	72.6	68.3	62.2	54.3
21/11/2022 10:45:26	00:15:00	77.7	49.5	65.5	73.6	69.5	62.1	54.6
21/11/2022 11:00:26	00:15:00	76.8	48.3	64.2	72.2	68.6	60.9	54.4
21/11/2022 11:15:26	00:15:00	83.7	49.6	64.5	73.2	68.3	61.3	54.8

21/11/2022 11:30:26	00:15:00	83.3	50	65.8	75.3	68.8	61.9	55.2
21/11/2022 11:45:26	00:15:00	95.8	50.1	70.5	83.2	70.7	63.1	56
21/11/2022 12:15:26	00:15:00	81	50.2	66.2	74.7	69.6	63.4	56.7
21/11/2022 12:30:26	00:15:00	92.3	50.8	66.1	73.4	69.6	62.7	56
21/11/2022 12:45:26	00:15:00	80.3	52.4	65.7	74.6	69.5	62.1	56.7
21/11/2022 13:00:26	00:15:00	96.2	50	70.5	81.5	69.8	62.1	56.4
21/11/2022 13:15:26	00:15:00	81.3	52.1	64.8	72.9	68.9	61.1	55.7
21/11/2022 13:30:26	00:15:00	83.3	51.6	66.1	74.1	69.9	61.6	55.8
21/11/2022 13:45:26	00:15:00	76.9	51.9	65.8	72.9	69.8	62.7	56.6
21/11/2022 14:00:26	00:15:00	78.7	50.5	65.4	73.2	69.2	62.6	56.3
21/11/2022 14:15:26	00:15:00	81.2	50.2	66.8	74.3	70.4	64.8	58
21/11/2022 14:30:26	00:15:00	77.5	49.7	65	73.3	69	61.3	55.7
21/11/2022 14:45:26	00:15:00	87.2	50.9	66.3	73.5	69.4	64	58.2
21/11/2022 15:00:26	00:15:00	80.1	51.8	65.7	72.9	69.3	63.5	57.2
21/11/2022 15:15:26	00:15:00	76.5	52.2	66.1	73.4	70.2	63.2	58.2
21/11/2022 15:30:26	00:15:00	78.2	53.1	66.5	73.6	70.4	64.2	58.6
21/11/2022 15:45:26	00:15:00	79.2	51	66.2	73.3	69.9	64.1	57.4
21/11/2022 16:00:26	00:15:00	86.1	51.4	66.9	75.2	70.2	63	56.9
21/11/2022 16:15:26	00:15:00	81.2	52.1	65.5	72.6	69.3	63.2	57.4
21/11/2022 16:30:26	00:15:00	75	52.9	64.9	72.2	69.1	61.2	57
21/11/2022 16:45:26	00:15:00	78.3	52.9	66.2	73.9	69.9	63.7	57.4
21/11/2022 17:00:26	00:15:00	78.7	53.4	65.6	73.2	69.5	63.2	56.7
21/11/2022 17:15:26	00:15:00	79	52.3	65.2	72.9	68.8	62.4	57.7
21/11/2022 17:30:26	00:15:00	80.4	54.2	65.6	73.4	69.4	62.9	57.8
21/11/2022 17:45:26	00:15:00	76.1	54.4	66.1	72.7	70	64	58.2
21/11/2022 18:00:26	00:15:00	76.7	51.4	65.7	72.7	69.6	63.5	57.9
21/11/2022 18:15:26	00:15:00	78.9	51.6	65.1	72.9	68.9	62.1	56.5
21/11/2022 18:30:26	00:15:00	76	54.4	65.8	72.7	69.5	63.5	59
21/11/2022 18:45:26	00:15:00	83.2	53.8	65.5	72.7	68.8	63	58
21/11/2022 19:00:26	00:15:00	77.1	54.6	65.5	72.7	69.1	63.3	58.4
21/11/2022 19:15:26	00:15:00	76.3	52.7	65.7	72.2	69.3	63.8	58.1
21/11/2022 19:30:26	00:15:00	74.9	50.9	65.3	72.4	69.2	62.8	56.8
21/11/2022 19:45:26	00:15:00	77.6	50.9	65.5	72.7	69.2	63.6	57.4
21/11/2022 20:00:26	00:15:00	75.6	51.1	65.4	72.8	69.7	62.2	55.5
21/11/2022 20:15:26	00:15:00	76.5	50.9	65.1	72.4	69.5	61.3	55
21/11/2022 20:30:26	00:15:00	76.2	50.9	65.6	73.7	69.9	61.7	55.6
21/11/2022 20:45:26	00:15:00	79.3	51.2	65.4	73.6	69.7	61.5	56
21/11/2022 21:00:26	00:15:00	79.1	49.3	65.1	73.9	69.5	60.6	54
21/11/2022 21:15:26	00:15:00	78.7	48.6	65.3	73.8	70	60.4	54.1
21/11/2022 21:30:26	00:15:00	78.2	49	65	73.7	69.6	59.9	53.7
21/11/2022 21:45:26	00:15:00	81	43.5	64.6	74.1	69.5	57.5	50.7
21/11/2022 22:00:26	00:15:00	78.8	47	64.3	74.3	69.2	57.5	51.8
21/11/2022 22:15:26	00:15:00	77.4	45.8	64.2	73.7	68.8	58.3	50.8
21/11/2022 22:30:26	00:15:00	79.1	42.5	64.9	73.9	70.1	57.3	49.5
21/11/2022 22:45:26	00:15:00	77.6	41.3	64	74	68.9	56.6	50
21/11/2022 23:00:26	00:15:00	79.3	43.8	63.4	73.1	68.5	55.4	48.1
21/11/2022 23:15:26	00:15:00	80.3	44.5	65	73.9	69.9	57	49.3
21/11/2022 23:30:26	00:15:00	81	39.9	64.9	75.1	69.9	56.4	48.2

21/11/2022 23:45:26	00:15:00	77.6	41.8	63.8	73.8	69.3	55.1	48
22/11/2022 00:00:26	00:15:00	77.4	43.6	63.1	73.6	68.3	53.1	47.8
22/11/2022 00:15:26	00:15:00	78.6	39.8	61.7	74.1	64.9	51.7	45.5
22/11/2022 00:30:26	00:15:00	79.8	39.1	62.3	74.4	66.4	50.8	44.4
22/11/2022 00:45:26	00:15:00	76.5	39.7	59.5	72	62.5	49.4	44.6
22/11/2022 01:00:26	00:15:00	77.8	37.8	59.9	73.3	61.2	48	41.9
22/11/2022 01:15:26	00:15:00	77.8	37.8	59	73.2	58.7	47	42.2
22/11/2022 01:30:26	00:15:00	77.1	37.8	57	69.7	59.1	46.4	41.2
22/11/2022 01:45:26	00:15:00	74.7	37.1	56.5	70.6	55.1	44.8	42.2
22/11/2022 02:00:26	00:15:00	74.3	36.3	52.8	66.6	51	43.5	37.3
22/11/2022 02:15:26	00:15:00	80.1	36.1	59.5	73.5	56.2	43.7	38.4
22/11/2022 02:30:26	00:15:00	76	37.6	57	71.2	53.9	43.9	39.3
22/11/2022 02:45:26	00:15:00	75.9	35.9	54.2	68	49.6	42.8	37.5
22/11/2022 03:00:26	00:15:00	75	36.3	54.2	68.3	52.6	44	38.1
22/11/2022 03:15:26	00:15:00	76.1	37.1	55.4	69.6	54.8	44.3	38.6
22/11/2022 03:30:26	00:15:00	75	36.9	53.3	67.1	48.6	43.2	38.5
22/11/2022 03:45:26	00:15:00	82.8	37.6	58.3	71.4	53.4	43.8	40.9
22/11/2022 04:00:26	00:15:00	76.2	38	57.2	70.7	56.2	45.5	40.7
22/11/2022 04:15:26	00:15:00	84.4	37.2	60.6	73.3	58.3	43.8	39.3
22/11/2022 04:30:26	00:15:00	76.7	38.3	59.5	72.7	61	45.9	41
22/11/2022 04:45:26	00:15:00	78.3	38.2	58.1	70.9	59.8	46.6	43
22/11/2022 05:00:26	00:15:00	76.9	38.5	59	72.6	57.8	46.7	42
22/11/2022 05:15:26	00:15:00	75.8	39.3	58.5	71.6	59.5	45.6	41.8
22/11/2022 05:30:26	00:15:00	83.7	40.3	59	71.9	58.9	46.7	42.9
22/11/2022 05:45:26	00:15:00	78	41.7	60.9	73.3	64.2	51.1	45.8
22/11/2022 06:00:26	00:15:00	77.2	43.4	61.4	72.6	65.8	52.1	46.4
22/11/2022 06:15:26	00:15:00	83.3	43.8	63.5	74.5	68.2	53.6	47.5
22/11/2022 06:30:26	00:15:00	82.5	44.7	63.9	74.4	68.1	55.2	48.2
22/11/2022 06:45:26	00:15:00	78.3	44.8	64.3	74.3	69.2	57.5	50
22/11/2022 07:00:26	00:15:00	78.8	45.1	66.9	76.6	71.9	60.2	52.1
22/11/2022 07:15:26	00:15:00	75.9	46.4	65.9	74.2	70.6	61	53.5
22/11/2022 07:30:26	00:15:00	89.2	48.4	66.5	74.8	70.1	62.1	55.5
22/11/2022 07:45:26	00:15:00	85.1	50	66.4	74.6	70.7	62.6	56.3
22/11/2022 08:00:26	00:15:00	79.7	51.3	67	74.9	71.7	61.9	56.8
22/11/2022 08:15:26	00:15:00	77.4	50	66.3	74.6	71.1	61.4	55.5
22/11/2022 08:30:26	00:15:00	85.1	49.5	67.4	75.8	71.8	62.6	56.4
22/11/2022 08:45:26	00:15:00	77.4	53.3	65.7	73	69.6	62.5	56.6
22/11/2022 09:00:26	00:15:00	77.2	51.2	66.1	73.9	70.3	63.2	56.9
22/11/2022 09:15:26	00:15:00	80.8	48.7	65.6	73.1	69.7	62.1	55.3
22/11/2022 09:30:26	00:15:00	81.7	51.2	65.6	74.5	69.4	62	55.2
22/11/2022 09:45:26	00:15:00	79.6	48.8	65.2	73.9	69.2	60.5	55
22/11/2022 10:00:26	00:15:00	77.8	49.9	65	72.9	68.9	61.7	56
22/11/2022 10:15:26	00:15:00	78.5	51.6	64.8	73.2	69	60.9	54.4
22/11/2022 10:30:26	00:15:00	88.1	49.3	65.4	73.8	69.1	61.9	55.1
22/11/2022 10:45:26	00:15:00	78.1	49.1	65.1	74.3	69.2	61.3	55.9
22/11/2022 11:00:26	00:15:00	78.7	48.2	65	73.3	69.2	61.5	54.7
22/11/2022 11:15:26	00:15:00	94.7	47.2	67.8	74.6	69.5	61.1	52.6
22/11/2022 11:30:26	00:15:00	76.9	47.3	64	71.9	67.9	61	53.4

22/11/2022 11:45:26	00:15:00	79.9	47.8	64.6	72.9	68.6	61.2	54.5
22/11/2022 12:15:26	00:15:00	79.9	49.7	64.5	72.8	68.7	60.5	54.4
22/11/2022 12:30:26	00:15:00	98	48.3	70.7	80.8	69.1	62	54.2
22/11/2022 12:45:26	00:15:00	82.3	50.7	63.5	70.7	67.1	61.3	55.2
22/11/2022 13:00:26	00:15:00	75.9	48.5	63.7	71.2	67.5	61	55.6
22/11/2022 13:15:26	00:15:00	74.8	50.3	64.4	71.4	68.5	61.7	55
22/11/2022 13:30:26	00:15:00	84.7	50.2	65.6	74.7	68.3	62.3	57.8
22/11/2022 13:45:26	00:15:00	79	50.1	64.5	72.9	68.6	60.5	55
22/11/2022 14:00:26	00:15:00	79.7	48.8	64.5	72.7	68.4	61.3	55.3
22/11/2022 14:15:26	00:15:00	76.2	49.3	64.4	72.7	68.4	60.8	55
22/11/2022 14:30:26	00:15:00	81.8	49.3	64.9	72.4	68.5	62.6	57.1
22/11/2022 14:45:26	00:15:00	77.2	49.5	64.6	72.2	68.6	61.8	54.9
22/11/2022 15:00:26	00:15:00	77.7	48.6	64.7	72.6	68.7	61.9	54.4
22/11/2022 15:15:26	00:15:00	82.9	48	64.1	72.7	68.2	60.9	54.3
22/11/2022 15:30:26	00:15:00	78.6	51.9	64.5	72.6	68.3	61.4	56.3
22/11/2022 15:45:26	00:15:00	78.9	48.6	64.7	73.1	69.1	61.1	54.8
22/11/2022 16:00:26	00:15:00	76.5	51.1	63.2	70.8	66.9	60.1	55.3
22/11/2022 16:15:26	00:15:00	77.2	47.8	64.6	72.8	68.9	61	53.8
22/11/2022 16:30:26	00:15:00	77.8	48.8	64.3	72.6	68.3	61.4	54.5
22/11/2022 16:45:26	00:15:00	81.1	49.5	64.2	72.6	67.4	61.8	56.4
22/11/2022 17:00:26	00:15:00	76.4	48.9	63.6	71.4	67.7	60.6	54.4

A4.2 Internal Noise Levels [dBA reverberant]

Date & End time	Duration	L _{Amax,F}	L _{Amin}	L _{Aeq}	LA01	LA10	LA50	LA90
17/11/2022 19:00:52	01:00:00	55.2	30.8	40.7	47.4	43.7	39	35.1
17/11/2022 20:00:52	01:00:00	59.2	30.5	40.7	48.1	43.9	38.7	35.3
17/11/2022 21:00:52	01:00:00	55.1	31.9	41.2	47.9	44.3	39.6	36.2
17/11/2022 22:00:52	01:00:00	54.5	29.1	41.4	48.4	44.8	39.5	35.6
17/11/2022 23:00:52	01:00:00	57.7	24.7	40.5	48.7	44.3	37.1	31.5
18/11/2022 00:00:52	01:00:00	53.2	20	39.5	49.1	44.4	32.9	26
18/11/2022 01:00:52	01:00:00	55.3	18.8	37.1	48	41.9	27.5	22
18/11/2022 02:00:52	01:00:00	58.7	18.3	35.1	47.8	37.1	23.8	19.9
18/11/2022 03:00:52	01:00:00	57.3	18.1	33.4	46.3	34.3	21.6	19.3
18/11/2022 04:00:52	01:00:00	57.7	18.4	33.7	46.9	34.2	21.2	19.3
18/11/2022 05:00:52	01:00:00	69.1	18.6	37	47.8	38.7	24	20.1
18/11/2022 06:00:52	01:00:00	54.3	19.1	37	48.6	41	26.8	21.2
18/11/2022 19:00:52	01:00:00	64.5	31.1	40.8	47.2	43.4	39.4	36
18/11/2022 20:00:52	01:00:00	59.9	32.1	41.6	48	44.2	40.3	37
18/11/2022 21:00:52	01:00:00	63.3	33.3	42.2	48.2	44.7	41	37.8
18/11/2022 22:00:52	01:00:00	57.5	32.4	42.4	49.6	45.5	40.7	36.7
18/11/2022 23:00:52	01:00:00	60.4	29.9	41.7	48.9	44.8	39.2	34.8
19/11/2022 00:00:52	01:00:00	59.6	27.6	41.3	49.6	45.3	37.1	31.3
19/11/2022 01:00:52	01:00:00	57.7	25.3	40.7	50.2	45.1	34.8	29.9
19/11/2022 02:00:52	01:00:00	58.1	20.4	39.5	49.9	44	31	25.9
19/11/2022 03:00:52	01:00:00	63.4	21.8	38.2	49.2	41.5	27.9	24.3
19/11/2022 04:00:52	01:00:00	53.3	21.2	36.4	48.5	39.6	26.4	23.2

19/11/2022 05:00:52	01:00:00	56.6	20.5	36.1	48.9	37	25.5	23.3
19/11/2022 06:00:52	01:00:00	59.8	21.6	37.9	50	40.6	26.3	23.4
19/11/2022 19:00:52	01:00:00	61	31.3	42.1	48.3	44.8	40.8	37.4
19/11/2022 20:00:52	01:00:00	58.8	32.3	42.4	48.8	44.8	41.2	38.1
19/11/2022 21:00:52	01:00:00	58.5	35.3	43.2	49.7	45.7	42.1	38.8
19/11/2022 22:00:52	01:00:00	56.3	32.2	43	49.6	45.8	41.7	37.7
19/11/2022 23:00:52	01:00:00	73.5	27.4	43.5	50.7	45.3	39.3	33.8
20/11/2022 00:00:52	01:00:00	60.7	24.4	41.6	50.6	45.8	36.5	30.5
20/11/2022 01:00:52	01:00:00	59.8	24	40.7	50.3	45.3	33.7	27.8
20/11/2022 02:00:52	01:00:00	58.1	19.9	40.8	50.8	45.6	32.8	26.5
20/11/2022 03:00:52	01:00:00	65	21.2	39.8	50.4	43.2	29.1	23.9
20/11/2022 04:00:52	01:00:00	56.2	20.7	38.3	50	42.2	28.5	24
20/11/2022 05:00:52	01:00:00	59.2	20.1	37.1	48.9	40.5	25.9	22.4
20/11/2022 06:00:52	01:00:00	55.3	21	36.8	49.5	39.3	25.5	22.6
20/11/2022 19:00:48	01:00:00	54.6	28.1	41.4	48.4	44.8	39.5	34.7
20/11/2022 20:00:48	01:00:00	69.8	29.8	42.5	48.9	45.3	39.8	35.2
20/11/2022 21:00:48	01:00:00	58.4	28.3	41.5	49.4	45.1	39	34.7
20/11/2022 22:00:48	01:00:00	62	26.7	41.8	50	45.4	38.3	33.4
20/11/2022 23:00:48	01:00:00	56	23.1	41	49.9	45.4	36.2	29.4
21/11/2022 00:00:48	01:00:00	71.1	22.7	41.5	50	44.6	32.2	26.1
21/11/2022 01:00:48	01:00:00	57.9	21.3	38.3	50.5	41.8	27.5	23.3
21/11/2022 02:00:48	01:00:00	57.4	21	36	49.2	37.3	25	23.1
21/11/2022 03:00:48	01:00:00	57.4	18.5	34.5	48	32.4	23.7	21.1
21/11/2022 04:00:48	01:00:00	56.7	20.7	34.6	48.8	31.8	24.4	22.8
21/11/2022 05:00:48	01:00:00	56.2	20.5	36.5	49.6	37.9	24.8	22.6
21/11/2022 06:00:48	01:00:00	65.9	22	39.5	51.4	42.6	29.5	24.3
21/11/2022 19:00:48	01:00:00	58.6	28.3	41.4	48.6	44.8	39.2	34
21/11/2022 20:00:48	01:00:00	53.4	27.6	41.5	48.3	45.2	39.7	33.5
21/11/2022 21:00:48	01:00:00	54.5	27.1	41.5	49.2	45.5	38.1	32.3
21/11/2022 22:00:48	01:00:00	58.5	24.8	41.2	49.9	45.6	36.2	30.4
21/11/2022 23:00:48	01:00:00	56.4	23.7	40.5	49.5	45.3	34.4	27.7
22/11/2022 00:00:48	01:00:00	57.8	20.9	40.6	50.3	45.7	32.6	26.1
22/11/2022 01:00:48	01:00:00	57.4	20.6	37.7	49.7	41.2	27.4	23.1
22/11/2022 02:00:48	01:00:00	53.2	20.3	33	46.5	33.2	24.4	22.7
22/11/2022 03:00:48	01:00:00	56.5	18.3	33.6	47.6	31	23.7	20.8
22/11/2022 04:00:48	01:00:00	57.2	20.9	33	46.6	31.9	24.7	23
22/11/2022 05:00:48	01:00:00	60.6	20.4	36.2	48.7	37.4	24.9	22.6
22/11/2022 06:00:48	01:00:00	60.4	21.5	36.7	48.6	39.7	27	23.5

APPENDIX 5
GLASS SPECIFICATION PROVIDED BY CLIENT

Glass specification.pdf

Done

UltraN

1.1 Neutral LowE

The advantages at a glance

Exemplary colour neutrality

- more freedom in the aesthetic design of glazing in modern buildings
- attractive look
- natural colour reproduction
- high light transmission
- strongly reduced mirror effect

Low k-value 1.1 W/m²K

- less power consumption
- more comfort
- lower CO₂ and nitrogen monoxide emission

Optimised g-value

- use of solar radiation for additional heat recovery

Technical Data: System3 Neutral LowE

Light transmission ratio	79%
Outside light reflection	11.5%
Degree of radiation transmission	54 (acc. to DIN EN 410)
g-value	63 (acc. to DIN EN 410)
Colour reproduction index	99%
k-value	acc. to DIN EN 673
Air conduction (1/16"/4)	1.4
Argon conduction (14/16"/4)	1.1
Argon/Krypton conduction 50%/50% (14/16"/4)	1.0
3-way Krypton conduction 97/3 (16/16"/4) (K42/16)	0.9
Xenon conduction 95% (16/16"/4)	1.0
Xenon conduction 100% (16/16"/4)	0.9

U-Values for various glass & spacer combinations

Double Glazing	cavity widths in mm							
	6	8	10	12	14	16	18	20
Clear Float/air/Clear Float	3.20	3.00	2.85	2.80	2.70	2.65	2.70	2.70
Clear Float/argon/Clear Float	2.95	2.80	2.70	2.60	2.55	2.55	2.55	2.55
Clear Float/air/4 Glass	2.60	2.30	2.05	1.90	1.80	1.70	1.70	1.70
Clear Float/argon/4 Glass	2.20	1.90	1.75	1.60	1.50	1.50	1.50	1.50
Clear Float/air/ES Neutral LowE	2.50	2.10	1.80	1.60	1.50	1.40	1.40	1.40
Clear Float/argon/ES Neutral LowE	2.00	1.70	1.50	1.30	1.20	1.10	1.10	1.10

SYSTEM3

System 3 Ltd., Denton Hall Farm Road, Denton, Manchester M34 2SY Tel: 0161 337 3000 Fax: 0161 337 0222
www.system3.ltd.uk Email: sales@system3.ltd.uk

APPENDIX 6
CORRESPONDENCE REGARDING FLOOR

Subject: [9201] 577 Barlow Moor Rd
Date: Fri, 9 Dec 2022 08:31:16 +0000
From: Mel Kenyon <message@martecenviro.co.uk>
Reply-To: message@martecenviro.co.uk
Organisation: Martec Environmental Consultants Ltd
To: Rob Stuart <rob@c-bc.co.uk>, 'Sacarello, Ben'
<Benedict.Sacarello@wsp.com>

Rob

Many thanks for your email. In order to answer that question it would really help to have a sketch of what you are proposing, showing the junction of the new wall with the floors.

However it is worth noting that gaps in the floor are more likely to have an effect on mid to high frequencies [people talking in the restaurant], than on low frequency sounds; unfortunately Building Regs requirements depend on the low-frequency to a significant extent.

I will be back in the office on Monday and can discuss it then.

Mel Kenyon MSc BSc MIOA
Martec Environmental Consultants
www.martecenviro.co.uk
01524 222000

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Please note that I no longer work on Fridays

On 08/12/2022 16:39, Rob Stuart wrote:

Mel/Ben

In an attempt to solve the problem of the noise transfer I have lifted the floorboards to the perimeter of the floor to the raised area and attach the pictures of the findings. There is significant gaps to the perimeter and the noise from the restaurant could be heard. Whilst the 2 layers of sound board to the ceiling were noted as well as a further boarded ceiling below with the gaps infilled with mineral wool, there is a weak point to the perimeter.

I'm proposing to infill the voids with rockwool as some of the gaps are significant and then infill the remaining areas with acoustic foam. We will then construct a timber wall independent from the steel beam and overboard with 2 layers of sound board. This will effectively extend the acoustic layer installed to the ceiling and will reduce the sound transfer

We will inspect again the works are complete.

Thoughts?

Robert Stuart MRICS
CBC

Mobile: 07710 631 456

www.c-bc.co.uk

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