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Technical Note...

7 – 9 Queensway, London. W2 4QJ.

KR06943

Version 1.2 – 18th October 2021

Report Conclusion...

A site visit on 13th October 2021 confirmed that the bulkhead (Point 1 of Condition 9) and the majority fixed seat and carpet with acoustic underlay (Point 2 of Condition 9) had been installed. The absorption panels are on backorder and are likely to be delivered in late November 2021 (Point 3 of Condition 9).

The resultant noise and vibration levels will comply in full with Part A, Part B and Part C of Condition 7 and Condition 8 of planning permission 21/1860/FULL.

Table of Contents....

1. Executive Summary.....	3
1.1. Introduction.....	3
1.2. Scope of Report	3
1.3. Planning Permission	3
2. Site Visit – Point 1 of Part B of Condition 9	4
2.1. Corner Bulkhead at Front of Store.....	4
2.2. Majority Fixed Seating	4
2.3. Carpet and Acoustic Underlay	4
2.4. Absorption Panels in Seating Area.	4
2.5. Significant and Appropriate Justification for Delay	4
2.6. Copy of Order for Absorption Panels	5
3. Point 2 of Part B of Condition 9.....	5
3.1. Vibration from Chairs and Tables	5
3.2. Vibration Measurement on Pret a Manger Floor	5
3.3. Photographs of Site	5
4. Point 3 of Part B of Condition 9.....	6
4.1. Reverberant Noise Levels	6
4.2. Internal Broadband Noise Relative to Background Noise Levels.....	6
4.3. Maximum Noise Levels within Pret a Manger	7
4.4. Vibration Levels within Residential Dwelling.....	7
5. Conclusions	7
5.1. Mitigation Measures	7
5.2. Resultant Noise and Vibration Levels	7
5.3. Significant and Appropriate Justification for Delay	7

Version History...

Reference	Version	Date	Author	Position	Document Status
KR06943	V1.2	18/10/21	R Scrivener	Consultant	Current document for issue
Details	Issue to client and Local Authority				

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1. Executive Summary...

1.1. Introduction

KR Associates (UK) Ltd have been instructed by Pret a Manger to provide a post mitigation noise report as required by condition 9 of planning permission 21/01860/FUL relating to the recent works undertaken at Pret a Manger at 7 – 9 Queensway.

1.2. Scope of Report

Pret a Manger have received complaints in the past from the residents above relating to the movement of table and chairs within the Pret a Manger. Following extensive investigation including consultation with Westminster City Council it was agreed to undertake the following works:

- Seal up the opening within the corner bulkhead at the front of the store.
- Installing majority fixed seats and carpet throughout the Pret a Manger.
- Installing absorption panels on the ceiling to further reduce the reverberation time and reverberant levels within the Pret a Manger.

1.3. Planning Permission

Westminster City Council granted planning permission for the above works on 12th July 2021 under application number 21/01860/FULL for “Use of ground floor for retail use (Class E) (retrospective)” which included condition 7 (Custom noise conditions Use Class E Café), condition 8 (Custom vibration condition – C48AB) and condition 9 (post mitigation acoustic report).

1.3.1 Condition 7 of Planning Permission 21/01860/FUL

“(a) General noise

Noise generated by the proposed new development (including noise from general operations, equipment, new plant and equipment, amplified sound, music etc.) in terms of LAeq,5mins should be demonstrated to be 10 dB below the existing background noise level measured in terms of LA90,5mins inside the existing residential dwellings. The background noise level used in the assessment should be representative of the most sensitive times (quietest) at which the new development is in operation (and generating noise).

(b) Maximum noise levels

Maximum noise levels generated by the proposed new development in terms of LFmax should be demonstrated not to exceed the NR 15 curve as defined in Annex B

of British Standard BS8233:2014 inside the existing residential dwellings. This includes noise from all sources (including amplified sound, music, impact noise from gym activities, activities in the retail unit). This is based on the assumption that existing background noise levels in the properties during the most sensitive periods are approximately NR 25.

(c) Music Noise

For music noise, the design of the separating structures should be such that the received music noise level in the residential habitable spaces, with music playing, should be demonstrated to be 10 dB below the existing ambient and maximum noise levels in the residential habitable spaces when music is not playing, at the quietest time of day and night, measured over a period of 5 minutes and in the indices of Leq and LFmax in the octave bands 63 Hz and 125 Hz; The overall music noise level in terms of LAeq,5mins should be at least 10 dB below the existing background noise level in terms of dB LA90,5mins.”

1.3.2 Condition 8 of Planning Permission 21/01860/FUL

“No vibration shall be transmitted to adjoining or other premises and structures through the building structure and fabric of this development as to cause a vibration dose value of greater than 0.2m/s (1.75) 16-hour day-time nor 0.1m/s (1.75) 8-hour night-time as defined by BS 6472 (2008) in any part of a residential and other noise sensitive property.”

1.3.3 Condition 9 of Planning Permission 21/01860/FUL

A. You must and within 10 weeks from the date of this permission implement the recommendations in Section 8 of the of the Technical note / acoustic report (KR Associates version 1.1 -27th October 2020) in full, which for the avoidance of doubt includes the following mitigation measures:

- o Upgrading corner bulkhead and cable entry point (Section 8.1)*
- o Installing fixed seating and carpet with acoustic underlay (section 8.2.)*
- o Installing absorption within the two seating areas (section 8.3.)*

B. You must and within 14 weeks of the date of this permission, submit to us a post completion acoustic report for approval, which shall include the following information:

- o Specific mitigation measures that have been implemented including specifications for materials that have been used.*
- o Measurements and calculations (source to receiver) to demonstrate that the noise criteria in conditions 7 and 8 have been met.*
- o The report should demonstrate that existing residents within the same building or in adjoining buildings will not be affected by noise and vibration from the development.*

The development must thereafter maintain the above mitigation measures and operate within the agreed noise criteria, unless otherwise agreed in writing by us.

This is unless significant and appropriate justification is provided for alternative timeframes, and these have been agreed as exceptional circumstances by the City Council and agreed prior to the expiry of the timeframes set out in this condition.”

2. Site Visit – Point 1 of Part B of Condition 9

KR Associates (UK) Ltd visited site on 13th October 2021 and inspected the recent works to determine if the mitigation measures had been installed.

2.1. Corner Bulkhead at Front of Store

An inspection of the bulkhead across the front of the store indicated that these works had been completed in line with point 1 of part A of condition 9 of planning permission 21/01860/FULL.

2.2. Majority Fixed Seating

An inspection indicated that the seating in the front part of the Pret a Manger along the side wall had been replaced with fixed seating bays. There was a few tables and chairs adjacent to these booths, but this did not exceed 25% of the overall seating in this area.

Within the rear part of the Pret a Manger a fixed bench has been installed around the outside of the area against each of the side walls. There are then larger tables and chairs making up the rest of the seating which does not exceed 50% of the seating in this area. Overall, the replacement seating complies with the first part of point 1 of Part A of condition 9 of planning permission 21/01860/FULL.

2.3. Carpet and Acoustic Underlay

An inspection indicated that the carpet and acoustic underlay has been installed to the left of the front area when you walk in and to the rear section of the Pret a Manger which complies with the second part of point 1 of Part A of condition 9 of planning permission 21/01860/FULL.

2.4. Absorption Panels in Seating Area.

An inspection indicated that the absorption panels have not been installed contrary to point 3 of Part A of condition 9 planning permission 21/01860/FULL.

2.5. Significant and Appropriate Justification for Delay


Pret A Manger have approved a specific absorption panel which has now been given design approval for installation within a Pret a Manger site which includes fixing safety, fire rating and brand compliance in terms of colour and design. The specific absorption panels are currently on backorder with an anticipated delivery date of late November 2021 due to

interruptions in the supply chain from the Far East and within the UK due to the ongoing Covid-19 Pandemic.

KR Associates (UK) Ltd are of the professional opinion that the Covid-19 pandemic is a *“significant and appropriate justification”* for Pret a Manger not installing the absorption panels as required by the last paragraph of condition 9 of planning permission 21/01860/FUL.

2.6. Copy of Order for Absorption Panels

The following is a copy of the original order placed by QSF Interiors to Resonics Ltd on 21st June 2021 for the Solo Baffle Absorption Panels. It should be noted that the order on the 21st June 2021 predates the decision notice of planning permission 21/01860/FULL and therefore Pret a Manger has not sort to delay matters. On the contrary, Pret a Manger was proactive on the matter and placed the order at risk in advance of the decision notice.

 INTERIORS		NEW SUB MINOR WORKS SUB-CONTRACT ORDER	
Contractor:	QSF Limited t/a QSF Interiors of Unit 2, Sarah Court, Piperell Way, Haverhill, CB9 8PA Company No. 05187163 VAT Reg No: 842 0720 53 Tel No: 01440 710014		Sub-Contractor: Resonics Ltd Address: Unit A 130 Gosterwood Street London SE8 5NY
Order Number:	QSF/	PAM708/	001
Sub-Contract Works:	Please carry out the following: - SOLO BAFFLE 1200 X 300mm Supply and install 'SOLO' acoustic ceiling baffles SURFACE FINISH: Akutex FT COLOUR: White Frost FIXING: Wire Hangers ABSORPTION CLASS: A To provide the following coverage area: 8m2 (20no. baffles) 12m2 (30no. baffles)		
Site:	7-9 Queensway, London, W2 4QJ		
Employer:	Pret A Manger		
Main Contract Works:	The above forms part of the ceiling works carried out by the Contractor under an agreement with the Employer		
Programme:	Commencement Date:	21.06.2021	
	Completion Date:	TBC	

3. Point 2 of Part B of Condition 9

3.1. Vibration from Chairs and Tables

It was previously agreed with the Westminster City Council EHO that the resultant noise levels experienced by the residents was due to the vibration energy of the movement of the table and chairs entering the structure of the Pret a Manger floor and travelling up into the residential dwellings resulting in audible airborne sound.

3.2. Vibration Measurement on Pret a Manger Floor

Vibration measurements were taken adjacent to the front of the store on the entrance area and a chair dropped from around 300mm on the adjacent section of carpet. Due to the carpet and acoustic underlay no vibration was detectable within the adjoining structure and the overall vibration dose value was well below the lower vibration criterion detailed in condition 8 of planning permission 21/01860/FULL i.e.: VDV 0.1 ms^{-1.75} as defined in BS 6472: 2008.

3.3. Photographs of Site

The following shows a chair on the carpet in the rear section of the Pret a Manger. It can be seen that the carpet and acoustic underlay will provide a 100% isolation from a single dropping or movement of the chair.



Typical Chair on Carpet



Close up of Chair Foot

4. Point 3 of Part B of Condition 9

4.1. Reverberant Noise Levels

The absorption panels have not yet been installed within the Pret a Manger, but the carpet has on its own reduced the reverberant noise levels within the Pret a Manger. It is the professional opinion of KR Associates (UK) that on the past experience of the site and the observations from the site visit on 13th October 2021 the following will be the resultant noise and vibration levels within the residential flat above.

4.2. Internal Broadband Noise Relative to Background Noise Levels

4.2.1 Background Noise Levels

Previous measurements have established the lowest background noise levels will be around $L_{A90,5 \text{ minutes}}$ 24 dB when the Pret a Manger will be operating as detailed in condition 3 of planning permission 21/01860/FULL i.e., 07:00 to 23:30 7-days per week. The following are the average L_{eq} broadband levels.

Ref	Measurement Location	Octave Centre Band Frequency (Hz)							
		NR	63	125	250	500	1K	2K	4K
Back	Average L_{eq} Background	25	45	33	33	27	23	20	18
$L_{A_{Max}}$ Sound Pressure Levels (dB) – reference level $2 \times 10^{-5} \text{ Nm}^{-2}$									

4.2.2 Airborne Sound Insulation

A previous airborne sound insulation test established the airborne sound insulation between the Pret a Manger as $D_{n'tw} + C_{Tr}$ 56 dB. The following table shows the octave band transmission loss of the airborne sound insulation between the Pret a Manger and the residential dwelling above.

Ref	Details	$L_{p(1m \text{ facade})}$ – Octave Band Centre Frequency (Hz)							
		$D_{n'tw} + C_{Tr}$	63	125	250	500	1K	2K	4K
TL	Pret to Residential	56	39	43	51	63	73	76	76
Transmission Loss (dB)									

4.2.3 Reduced Source Levels within Pret a Manger

The following are the source levels within the Pret a Manger which have been reduced by around 5 dB due to the carpet reducing the reverberant noise levels within the Pret a Manger.

Ref	Receiver Position	$L_{p(1m \text{ facade})}$ – Octave Band Centre Frequency (Hz)							
		A	63	125	250	500	1K	2K	4K
Pret	Average Internal Levels	69	65	67	67	65	62	62	61
$L_{eq, 5 \text{ minutes}}$ Sound Pressure Levels (dB) – reference level $2 \times 10^{-5} \text{ Nm}^{-2}$									

4.2.4 Calculated Resultant Average Noise Levels in Residential

The following are the resultant average operational noise levels within the Pret a Manger. It has been assumed there will be no contribution from the chairs and tables that are not fixed as the carpet and acoustic underlay has reduced the vibrational energy to around zero.

Ref	Receiver Position	$L_{p(1m \text{ facade})}$ – Octave Band Centre Frequency (Hz)							
		A	63	125	250	500	1K	2K	4K
Pret	Average Internal Levels	11	26	24	16	2	>0	<0	<0
$L_{F_{Max}}$ Sound Pressure Levels (dB) – reference level $2 \times 10^{-5} \text{ Nm}^{-2}$									

The above calculations indicate that the resultant average noise level within the residential dwellings above will be $L_{Aeq, 5 \text{ minutes}}$ 11 dB which is 13 dB below the minimum background noise level which therefore complies with Part A and Part C of condition 7 of planning permission 21/01860/FULL.

4.3. Maximum Noise Levels within Pret a Manger

The following are the maximum noise levels recorded within the refurbished Pret a Manger on 13th October 2021.

Ref	Receiver Position	L _{p(1m facade)} – Octave Band Centre Frequency (Hz)							
		A	63	125	250	500	1K	2K	4K
Pret	Average Internal Levels	77	74	72	72	74	75	75	72
L _{Max, fast} Sound Pressure Levels (dB) – reference level 2 x 10 ⁻⁵ Nm ⁻²									

4.3.1 Noise Rating Curve 15 dB (BS 8233)

Table B.1 within Annex B entitled “*Noise rating*” of British Standard 8233: 2014 entitled “*Guidance on sound insulation and noise reduction in buildings*” provides details of the two Rating Noise Curves (NR Curves).

Ref	Noise Rating Curve	L _{p(1m facade)} – Octave Band Centre Frequency (Hz)							
		A	63	125	250	500	1K	2K	4K
BS 8233 Annex B Table B.1	NR25	35	55.2	43.7	35.2	29.2	25	21.9	19.5
	NR15	26	47.3	35.0	25.9	19.4	15	11.7	9.3
Sound Pressure Levels (dB) Reference 2 x 10 ⁻⁵ Nm ⁻²									

4.3.2 Calculated Maximum Noise Levels in Residential

The calculations indicate the resultant maximum noise levels within the residential dwelling will result in an L_{Max} NR 10 dB which therefore complies with Part B of condition 9 of planning permission 21/01860/FULL.

4.4. Vibration Levels within Residential Dwelling

As detailed above the movement of chairs and tables on the carpet with acoustic underlay will result in vibration levels that will be well below and therefore comply with the vibration criterion within condition 8 of planning permission 21/01860/FULL.

5. Conclusions

5.1. Mitigation Measures

A site visit on 13th October 2021 confirmed that the bulkhead (Point 1 of Condition 9) and the majority fixed seat and carpet with acoustic underlay (Point 2 of Condition 9) had been installed. The absorption panels are on backorder and are likely to be delivered in late November 2021 and will be installed as soon as practical thereafter (Point 3 of Condition 9).

5.2. Resultant Noise and Vibration Levels

The resultant noise and vibration levels will comply in full with Part A, Part B and Part C of Condition 7 and Condition 8 of planning permission 21/1860/FULL.

5.3. Significant and Appropriate Justification for Delay

The absorption panels required by point 3 of Part A of Condition 9 of planning permission 21/01860/FULL are currently on backorder and are expected to be delivered in late November 2021. The delay is due to the current Covid-19 Pandemic and issues with the supply chain in the Far East and the UK. KR Associates (UK) Ltd consider this delay to be significant and appropriate justification for not meeting the timescales detailed within condition 9 of Planning Permission 21/01860/FULL.

END OF REPORT

