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PROJECT TECHNICAL MEMORANDUM

JOB TITLE : Slate Wharf
REF : HT: 28795/PTM2
DATE : 28 July 2023
FROM : George Grenfell
ISSUED TO : Matthew Fisher

RE: SLATE WHARF NOISE IMPACT ASSESSMENT - ADDENDUM

1.0 Introduction

We are writing to acknowledge the comments provided by Environmental Health regarding our Noise Impact Assessment (NIA) referenced as 29795/NIA1, issued on 16th December 2022. The comments are addressed separately herein.

While considering the aforementioned comments, it is worth noting that the construction of the building is currently in its final stages. In light of this, we believe it is appropriate to address the Local Planning Authority's (LPA) concerns with empirical evidence. Therefore, we conducted on-site measurements of the internal noise levels to validate the performance of critical façade elements and building services.

The results of the measurements are presented in this memorandum, and they aim to address any potential concerns related to the impact of critical façade elements and building services on the internal noise environment.

2.0 Glazing Specification

The first comment from the LPA pertains specifically to the glazing units on the south-side bedrooms and is as follows:



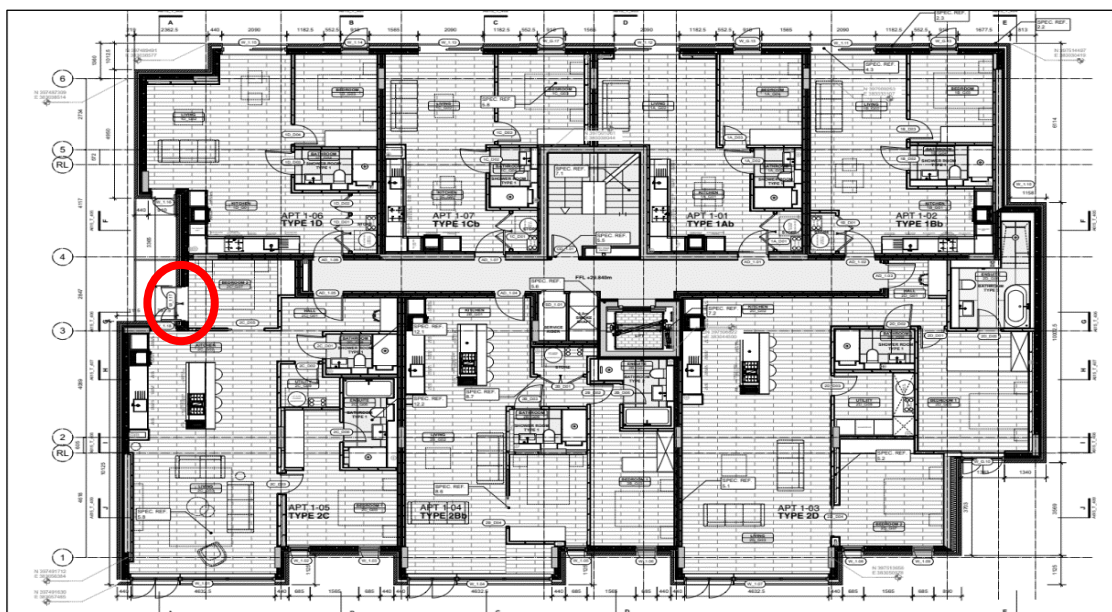
1) "The proposed glazing selected does not meet the performance criteria in the South façade bedrooms. These will need be upgraded to meet the require specification of a minimum of 35dB R_w) Examples of the glazing system that will meet the requirement for this location will need to be provided by the consultant. Suggestion has been made that secondary glazing may be installed. If this is the case (although not preferred) then performance and examples of the secondary glazing system needs to be recommended along with construction / fitting recommendations to ensure the secondary glazing is sufficient to meet the performance requirements."

2.1 Initial Specification Guidance

In order to mitigate noise ingress from external sources into the proposed development, a carefully selected glazing specification was incorporated as part of the Noise Impact Assessment (NIA) previously issued under reference 28795-NIA1-GLG-R2. The specific glazing specification is detailed in the table provided overleaf:

Glazing Location	Minimum Sound Reduction Index (dB) at Octave Band Centre Frequency (Hz)						Overall (dB) $R_w + C_{tr}$
	125	250	500	1000	2000	4000	
South Façade (Bedroom)	27	29	33	43	38	32	35
All Other Facades	19	26	35	38	41	41	31

As indicated above, the south side bedroom window was given an uplift in specification to 35dB $R_w + C_{tr}$, to directly mitigate extract fan noise from the adjacent Public House 'The Wharf'. This south side window is highlighted red in the plan below:



Typical floor plan highlighting the south-side bedroom windows subject to fan noise from 'The Wharf'



2.2 Specification (as built)

We understand that the development is built with the following glazing specifications:

Location	Product	Minimum Sound Reduction Index (dB) at Octave Band Centre Frequency (Hz)						Overall (dB) $R_w + C_{tr}$
		125	250	500	1k	2k	4k	
South side bedroom	Futura +/- Futura+I	19	26	35	38	41	41	31
All other facades	Futura+/- Futura+I	21	27	36	39	49	47	33
	Frame IC	24	26	32	40	42	44	33

As noted in MCC's comment 1, it has been observed that the glazing selected for the south-side bedrooms does not fully align with the recommendations outlined in the previously issued Noise Impact Assessment.

MCC's second comment is intended to ensure that the glazing system is proven to be capable of maintaining suitable internal noise levels, and is as presented below:

2. *The applicant will need to confirm that either the uprated glazing system or the secondary glazing system recommended (once provided) will be complied with. This will need to form part of the validation process and we will require evidence to satisfy this to address part b) of the condition.*

To address comment 2, a sample of internal noise level measurements was conducted during daytime periods, specifically when The Wharf fan is operational. The objective of these measurements was to assess and confirm the effectiveness of the as-built façade in adequately mitigating noise ingress from all external sources.

2.3 On-Site Measurements

Hann Tucker attended site on 22nd June 2023 to undertake a range of internal ambient noise level measurements to validate the sound insulation performance of critical façade elements. L_{Aeq} measurements were taken over 1-minute periods in each of the 4no. south-side bedrooms to assess the performance of the installed glazing. The results are presented in the table below:



Location	Internal Ambient Noise Level L _{Aeq,1min} (dB)	BS8233 Daytime Criteria L _{Aeq,8hr} (dB)
Apartment 303 south side bedroom	30	35
	30	
	30	
Apartment 205 south side bedroom	33	
	34	
	34	
Apartment 105 south side bedroom	30	
	29	
	30	
Apartment G05 south side bedroom	30	
	30	
	30	

As presented in the preceding table, it is evident that all south-side bedrooms, which represent the worst-case scenarios in terms of external noise ingress, have demonstrated compliance with the BS8233 criteria for internal ambient noise levels during daytime periods. Consequently, each of these bedrooms meets the requirements set forth by the Local Planning Authority (LPA).

In conclusion, the installed glazing has proven to be effective in efficiently mitigating noise intrusion, successfully maintaining internal noise levels below the statutory limits.

3.0 Internal Building Services Noise

3.1 Initial Specification Guidance

The initial assessment of internal building services noise provided in our Stage 4 Design report (28795-ADR1-GLG-R0) indicated that selected MVHR units were anticipated to result in the internal noise criteria being exceeded in several rooms where the supply fan is directly ducted into living spaces. MCC responded to this in their third comment, as provided below:

3. *It has been predicted that the ventilation system will lead to an exceedance of the internal noise criteria in certain rooms, specifically Living rooms 2C and 2D and rooms where the supply fan is ducted directly into living spaces. These will require additional attenuation and it has been recommended that additional silencers are installed for these units. The performance / specification of the silencer will need to be included in the report and provided to the applicant. The applicant will need to confirm compliance with this requirement and the details of the silencer and location providing to the consultant for review and assessment...*



...We will then require an updated memo providing to confirm the proposed silencer and location will be sufficient to allow these supply ventilation sources to operate within the noise criteria when in full boost function. This will need to form part of the validation process and we will require evidence to satisfy this to address part b) of the condition.

3.2 On-Site Measurements

To address this comment from MCC, Hann Tucker attended site on 22nd June 2023 to undertake a range of internal building services noise level measurements to validate the performance of the installed ventilation system.

It is our understanding that the ventilation system has been installed as advised. We understand that MVHR units were running at maximum design duty at the time of the measurements, which was confirmed to be 60% boost, as shown in the photograph below of one of the units in operation:



Photo taken on-site of one of the MVHR units in operation.

Noise Rating (NR) measurements were taken over 30-second periods in a sample of habitable rooms to assess the building services noise levels. The results are presented in the table below:



Location	Internal Building Services Noise Level NR (Boost)	Internal Building Services Noise Level Criteria NR (Boost)
Apartment 303 Bedroom 1 (Type 3A)	27	35
	27	
	27	
Apartment 303 Bedroom 2 (Type 3A)	32	
	32	
	34	
Apartment 303 Livingroom (Type 3A)	28	
	30	
	29	
Apartment 205 Livingroom (Type 2C)	29	
	29	
	28	
Apartment 205 Bedroom 1 (Type 2C)	33	
	32	
	33	
Apartment 204 Livingroom (Type BA)	29	
	30	
	31	
Apartment 204 Bedroom 1 (Type BA)	25	
	26	
	26	

As indicated above, all the measured spaces were shown to be compliant with the internal building services noise level criteria when running at 60%. It was confirmed on-site that the duty of 60% was the maximum boost duty. In this light, the M&E engineer should be able to confirm this with MCC and address their fourth comment, which is provided below:

4. *The assessment of the ventilation system has been based on 60% boost function as a worst-case scenario. Confirmation will be required to confirm that the MVHR boost duty (60%) can achieve the necessary ventilation requirements. If this is not possible, then further assessment and attenuation measures will need to be recommended.*

4.0 Summary

Our assessment focused on the glazing specification and MVHR (Mechanical Ventilation with Heat Recovery) systems as currently installed. On-site measurements confirmed that the installed glazing effectively mitigates noise ingress from 'The Wharf' extract fan and other external sources, ensuring compliance with internal noise level criteria.



The MVHR system's noise emissions were also evaluated during boosted operation. The results demonstrate compliance with internal building services noise level criteria, contributing to a comfortable acoustic environment.

Concerns expressed by the Local Planning Authority have been addressed, through on-site measurements, demonstrating scheme's compliance with relevant criteria. `

Yours sincerely

George Grenfell
for HANN TUCKER ASSOCIATES