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02-08-24

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Arundel Street, S73 Planning Submission - Acoustic Statement

A Section 73 (S73) planning application is due to be submitted for the previously consented Arundel Street residential development (previous planning application reference no.s 123261/FO/2019 and 134385/NMC/2022). The submission will include proposed design amendments to address new guidance published in relation to tall building design and updated Building Regulation requirements in the form of Approved Document O: Overheating (AD-O).

The purpose of this technical note is to confirm the validity of the previous acoustic assessment submitted to support planning applications 123261/FO/2019 and 134385/NMC/2022 to the new S73 planning application. The following note also provides high-level commentary on any additional acoustic implications resulting from the new AD-O requirements and how the design intends to address these.

All comments below are from an acoustic perspective only.

1. Background

An environmental noise assessment, in the form of a Noise and Vibration chapter within the overall Environmental Statement (ES) report (Chapter 11 of Arundel Street, Manchester Environmental Statement Volume 1 April 2019), was submitted in support of the consented planning applications for the site.

The ES noise assessment provided details of site acoustic surveys completed and the implication of the measured levels on the proposed development. Acoustic design strategy relating to building fabric acoustic specifications, plant noise emissions/limits and such like were also presented, as based on the relevant design guidance and best practice documents current at the time of the planning submissions.

Whilst the content and subsequent conclusions of the ES Noise and Vibration Chapter are still considered to be valid, there have been revisions to policy, legislative and guidance documents referenced within the original ES, as well as the introduction of new Building Regulation requirements in the form of AD-O, which may have implications upon the acoustic design strategy. The following sections provide an overview of these changes and how they will be implemented within the acoustic design strategy of the future development. In addition, information is provided to confirm the noise survey data collected during the original ES noise assessment can still be considered valid.

2. Policy, Legislative and Design Guidance Changes

Since the submission of the ES Noise and Vibration assessment, the following acoustic policy, legislative and guidance documents have been revised and/or published.

National Planning Policy Framework

Whilst there have been updates to the National Planning Policy Framework (NPPF) since the submission of the original noise assessment, there have been no significant updates which would change the acoustic assessment approach and conclusions/recommendations presented within the original ES noise assessment.

Greater Manchester Places for Everyone

Places for Everyone is a long-term plan of nine Greater Manchester districts (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan) for jobs, new homes and sustainable growth. It first began as the

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Greater Manchester Spatial Framework (GMSF) in 2014 and was subsequently adopted as Places for Everyone (PfE) in March 2024. Following review, it is confirmed that the PfE does not contain any new noise policies which would impact upon the assessment approach and conclusions/recommendations presented within the original ES noise assessment.

Manchester City Council Planning and Noise: Technical Guidance

The Manchester City Council (MCC) noise policy document referenced within the ES noise assessment has since been superseded by subsequent document revisions, with the current version of the guidance issued in October 2022.

The ES noise assessment referenced various guidance criteria contained within this document such as the noise limits for residential properties and noise emissions from building services plant. The MCC adopted noise limits for residential properties and noise emissions from building services plant contained within the current revision of the guidance has not altered since the submission of the ES and as such, it is considered the ES assessment criteria remains valid.

The current version of the MCC document does include new commentary on Building Regulations Approved Document O: 'Overheating' requirements, which has been introduced since the submission of the ES noise assessment. This includes commentary on the need to consider noise impacts which may occur when opening windows to avoid the overheating condition. The MCC guidance also makes reference to the Association of Noise Consultants Acoustics, Ventilation and Overheating Residential Design Guide (AVO) when considering overheating and noise impacts.

The Building Regulations 2010, Approved Document O 'Overheating'

Approved Document O 'Overheating' came into effect on 15th June 2022 which is after the original ES submission. It introduces requirements for various types of residential premises to limit unwanted solar gains and to provide an adequate means to remove heat from the indoor environment. Requirement O1(2)(a) of the regulations state that account must be taken of the safety of an occupant, and their reasonable enjoyment of the residence. The statutory guidance supporting Requirement O1(2)(a) contains, among other factors, requirements relating to noise at night as presented in the table below.

Approved Document O: Overheating, noise criteria

Room type	***Time period***	***Internal criteria***
Bedrooms	Daytime, 07:00 – 23:00 hours	No statutory requirements
	Night, 23:00 – 07:00 hours	40dB $L_{Aeq,8hr}$ 55dB L_{AFmax} (when more than 10 times a night)
Living Rooms	Daytime, 07:00 – 23:00 hours Night, 23:00 – 07:00 hours	No statutory requirements

The new requirements detailed above will be addressed by the proposed design and associated design amendments. Further details are included within the following sections.

3. Environmental Noise Survey Levels

The ES noise assessment submitted in support of the original planning application for the scheme included details of a baseline site survey. The survey identified that the major noise source impacting upon the site was road traffic noise associated with the adjacent A57(M), with contributions from other local roads such as the A56 Chester Road.

Due the age of the survey data presented within the ES noise assessment, further site measurements have been undertaken by BDPA to validate the ES measurements; this survey was conducted in March 2024. Additional data was also collected at this time to support the development of a 3D acoustic model of the site. A summary of the data collected is presented below, alongside the original ES data. The new survey data shows close correlation (largely within 1dB) to the ES data therefore it is concluded that the survey data presented within the ES can still be considered valid.

Comparison of ES summary survey data and March 2024 survey data

Location	Time period	ES Summary Data	March 2024 Summary Data	ES Summary Data	March 2024 Summary Data
		$L_{Aeq,\ T}$ dB	$L_{Aeq,10mins}$ dB	$L_{A90,T}$ dB	$L_{A90,10mins}$ dB
Ellesmere Street	Day	63	62 - 64	59	59
	Night	60	60	55	56
A57(M)	Day	73	72 - 74	70	71
	Night	71	74*	66	70*
Worsley Street	Day	63	63 – 64	60	61
	Night	63	62 – 63	57	59
Arundel Street	Day	63	62 - 63	59	58
	Night	59	59 – 62	56	56

** Night-time check measurements were completed during 06:00 – 07:00hrs which is likely to be the noisiest hour of the night period so will account for the slightly elevated noise levels monitored at this position when compared to the ES data which were collected during 23:00 – 01:30hrs.*

4. Indoor Ambient Noise Levels, Ventilation Strategy and External Building Facade

The proposed background ventilation strategy for apartments is via mechanical ventilation incorporating heat recovery (MVHR). This strategy, in tandem with appropriate acoustic specification of external building façade elements, has the capability to ensure that the MCC indoor ambient noise level limits provided within the most recent iteration of the guidance document will be satisfied.

Acoustic specifications for external building fabric elements such as glazing and walls have been provided to the design team. Acoustic rating recommendations for external glazing range from $R_w + C_{tr}$ 29dB to $R_w + C_{tr}$ 46dB depending on façade orientation, with the highest rating proposed to façades overlooking the A57(M).

The need to control night-time noise impacts when avoiding overheating conditions has been considered within the current design proposals. A review of predicted façade night-time noise levels, established via site measurements and acoustic 3D modelling, has been completed and indicative mark-ups provided to the design team to present, from an acoustic perspective, ventilation strategy recommendations to enable compliance with the AD-O night-time intrusive noise criteria

The MEP engineers have confirmed that the overheating control of apartments will be dealt with by a combination of measures, dependant on acoustic constraints, and will include measures such as:

- Cooling module located on the MVHR system to provide cooler tempered air in peak conditions.
- Acoustically attenuated façade vents on apartments where applicable.
- Sizing of MVHR units to allow for increased air flow rates over and above standard Approved Document Part F minimum rates to allow the tenants to increase the ventilation to assist in minimising the risk of overheating.

The AD-O provides limits for night-time hours only (23:00 – 07:00hrs); no statutory daytime noise limits for living rooms, or other occupied residential spaces are provided and as such additional measures and design strategies to reduce noise impacts during overheating events during daytime hours are not deemed to be required.

5. Conclusions

The summary information presented within this technical note provides the necessary validation that the referenced criteria, assessment strategy and subsequent recommendations and conclusions contained within the original ES remain valid for the purposes of the S73 planning submission.

Where there have been revisions to, and introduction of, new acoustic planning policy and legislative requirements since the original ES, these have been identified and addressed within this technical note.

The survey data used as the basis of the ES noise assessment has been reviewed with further site measurements undertaken in March 2024 to validate the data. The 2024 data shows close correlation (largely within 1dB) to the ES data therefore it is concluded that the survey data presented within the ES is still valid.

The need to control noise impacts during night-time overheating conditions (AD-O) have been considered within the S73 design amendments as presented within this technical note. No statutory daytime noise limits for living rooms, or other occupied residential spaces are included in AD-O and as such additional measures and design strategies to reduce noise impacts during overheating events during daytime hours in other occupied spaces are not deemed necessary.

Yours sincerely
For BDP



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cc As per email distribution list