24074-R01-BT

Broadgrove Planning & Development

Regent House

Heaton Lane

Stockport

SK4 1BS

25/09/2024

Dear Micheal,

303 CHEETHAM HILL ROAD

Introduction

Planning consent for this development was sought under Manchester City Council planning application reference 112282/FO/2016/N1. Condition 6 requires a scheme of sound insulation to protect residents from noise from Cheetham Hill Road.

Planning condition 6 was not discharged for the reason detailed in the Decision Notice dated 1 November 2023, reproduced below;

> ***"Part 2 – Particulars of decision (b)***
>
> *Manchester City Council gives notice that the following detail(s) referred to in Part 1 are* ***refused*** *in accordance with the information set out below.*
>
> ***6 (noise),***
>
> *There is insufficient information to fully discharge the condition, details of the mechanical ventilation system installed to ensure that windows do not need to be opened for ventilation and then a verification report which includes measurements inside the bedroom and living room to confirm the day time and night time internal noise criteria has been met whilst the mechanical ventilation system is in use. Therefore, condition 6 noise is not discharged."*

Criteria

Manchester City Council's standard noise conditions at the time the planning application was submitted were detailed in their document '*Planning & Noise Technical Guidance*'.

This document sets out Manchester City Council's requirements with regard to current guidance and policy, and refers to the WHO Guidelines for Community Noise 1999, BS 8233:2014, BS 4142:2014, NPPF and NPSE.

MCC has adopted the following internal noise limits for residential properties:

- Bedrooms (night time 23:00-07:00) 30 dB L_{Aeq} (individual noise events should not normally exceed 45 dB L_{Amax} more than 15 times);
- Living Rooms (daytime – 07:00-23:00) 35 dB $L_{Aeq,16h}$.

It should be noted that these criteria do not apply to the kitchen, circulation spaces etc.

dBx Acoustics report ref *20050-R01A 303 Cheetham Hill Road*, dated 29 September 2020, details a noise survey and noise impact assessment carried out at the site. The report details the acoustic requirements for glazing and ventilation in order to comply with MCC criteria. It should be noted that although ventilation by means of open windows is not acoustically suitable, performance requirements for passive ventilators were presented as an alternative to mechanical ventilation.

Since issue of this report, dBx Acoustics has had no further involvement in the scheme, and on this basis, have no information on the glazing and ventilation provision which were installed. We contacted the original developer in August 2024 to try to obtain these details, but they were unable to be provided.

On this basis, it was agreed that the best way to discharge planning condition 6 would be to attend side to undertake a noise survey and site inspection, to assess the current noise ingress levels and ventilation strategy. The data from measurements on site can then be used to establish the glazing and ventilator acoustic performance as installed, and any required mitigation measures.

A summary of the measurements made, and conclusions drawn are provided in this letter report.

Site Visit

Joseph Tony of dBx Acoustics attended site on Thursday 19th September 2024 between 13:00h and 16:00h.

The property comprises a 3-storey house. The front of the house faces Cheetham Hill Road, a busy thoroughfare, whereas the rear faces onto a pedestrian alley.

Observations indicate that there are no trickle vents in any of the windows in the noise sensitive rooms, and hence background ventilation needs to be provided by opening windows.

External noise levels were measured continuously at the front and rear facades. Internal noise levels were then measured in a number of rooms, with windows both open and closed. This data has been used to determine the noise levels in the rooms and the sound insulation performance of the glazing, and hence estimate the construction(s) used.

Noise Survey Results

The noise levels measured outside the property were around 70dB$L_{A10,3hour}$ at the front, and 54dB$L_{A10,3hour}$ at the rear, in accordance with the shortened measurement procedure detailed in the Calculation of Road Traffic Noise (CRTN) document (Department of Transport (Welsh Office), 1988). Measurements were made over a 3 hour period, in 5 minute intervals.

Based on the CRTN methodology, this data measured can be used to determine the 16-hour daytime ambient noise levels.

The mean of the dBL_{A10} values provides the 3-hour average, dB$L_{A10,3hour}$. This is converted to the 18-hour dB$L_{A10,18hour}$ value by subtracting 1dB. This is then converted to the 16-hour ambient noise level, dB$L_{Aeq,16hour}$, by subtracting a further 2dB.

This results in a daytime average noise level of 67dB$L_{Aeq,16hour}$ at the front of the building, and 51dB$L_{Aeq,16hour}$ at the rear. These are lower than the values measured in 2020 (73dB$L_{Aeq,16hr}$ at the front of the building and 62dB$L_{Aeq,T}$ at the rear).

Night-time noise levels were not measured in 2024, due to access constraints. However, in 2020, night-time noise levels were around 3dB lower than daytime noise levels, and hence this correction has been applied to the 2024 measured noise levels.

In terms of maximum noise levels, these are generated by one off events, and hence are generally similar at all times of day or night. Typical maximum noise levels measured in 2024 were almost identical to those measured in 2020.

A summary of the noise levels measured is detailed in Table 1, below.

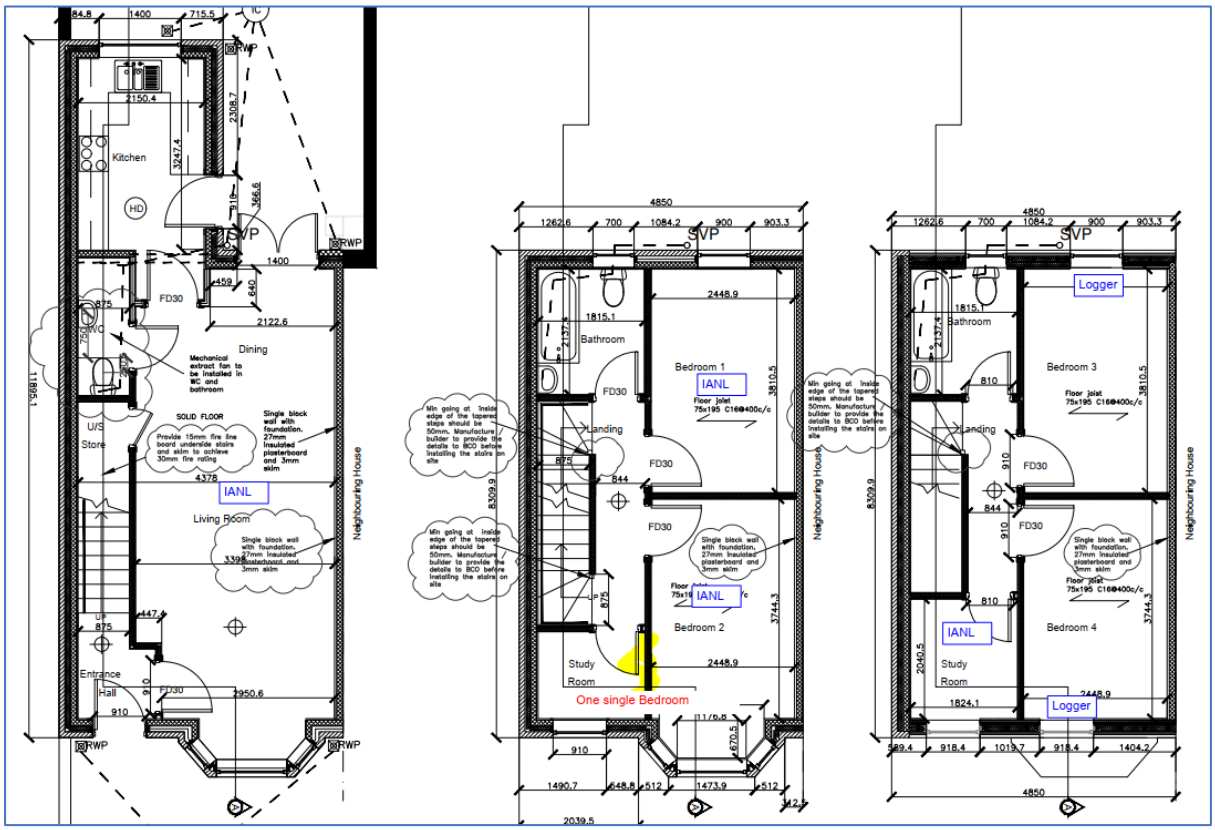
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Table 1 – Summary of External Noise Levels Measured

Location	Day Ambient, $dBL_{Aeq,16hour}$	Night Ambient, $dBL_{Aeq,8hour}$	Typical Maximum, $dBL_{Amax,F}$
2020			
Front	73	70	84
Rear	62	56	71
2024			
Front	67	64	83
Rear	51	45	70

Indoor ambient noise levels (IANL) were measured within a number of rooms, with windows closed and open, in the locations identified in Figure 1, below. Measurements were made in 5 minute periods, to correlate to the external noise levels measured.

Figure 1 – Measurement Locations



A summary of these measurements is provided in Table 2, below.

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Table 2 – Internal Noise Level Measurements

Time, h	Facade	Location	Windows Open/Closed	Noise Level, $dBL_{Aeq,5min}$	External Noise Level, $dBL_{Aeq,5min}$	Level Difference, dB
13:40	Front	Living Room GF	Closed	31	69	38
13:50	Front	Bedroom 2 FF	Closed	33	69	36
14:00	Front	Bedroom 2 FF	Closed	32	68	36
14:10	Rear	Bedroom 1 FF	Closed	27	54	27
14:25	Front	Study Room SF	Closed	32	68	36
14:40	Rear	Bedroom 1 FF	Open – 200mm	39	54	15
14:50	Front	Living Room GF	Open -200mm	52	68	16
15:10	Front	Living Room GF	Open -150 mm	52	67	15
15:25	Front	Bedroom 2 FF	Closed	33	68	36
15:40	Front	Bedroom 2 FF	Open -200mm	53	67	14
15:50	Front	Bedroom 2 FF	Open -150 mm	50	66	16

It can be seen that, with windows open for background ventilation, Manchester City Council's requirements are exceeded in all locations. Ventilation will therefore be required to be provided by alternative means.

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Assessment

Based on the measured noise levels, and the room and window sizes, it has been possible to determine the sound insulation performance of the glazing installed, and hence the glass types likely used. It should be noted that we are not surveyors, and hence the type of glass etc used may vary; however, this is not critical for this assessment- it is the acoustic performance which is of relevance.

A summary of these calculations is provided in Table 3, below.

Table 3 – Estimated Installed Glazing

Location	Glazing Sound Insulation Perfomance, dBR_w	Estimated construction, mm
Living Rooms, front	31	4/12/4
Bedrooms, front	38	10/12/6
Bedrooms, rear	31	4/12/4

Using this data, and the noise levels measured in 2024 and confirmed in Table 1, above, calculations have been undertaken to calculate the required sound insulation performance of the glazing and suitable ventilators for each room type, as detailed in Table 4, below.

Table 4 – Required Glazing and Ventilator Specifications

Location	Glazing Sound Insulation Performance, dBR_w	Ventilator Sound Insulation Performance, $dBD_{n,e,w}$.
Living Rooms, front	31*	38
Bedrooms, front	47	44
Bedrooms, rear	31*	38

* No change from installed

Recommendations

Living Room and Rear Bedrooms

It can be seen that the glazing in the living rooms at the front of the building, and the bedrooms at the rear, are acoustically acceptable if closed, and hence only an additional ventilator needs to be provided. The sound insulation performance of the ventilator should achieve at least $38dBD_{n,e,w}$ when open. Examples of units capable of achieving this performance include;

- Simon Acoustics EHAS - https://www.carlfgroupco.co.uk/ventilation/simon-acoustic-ventilators
- Rytons TAL4H&M - https://rts.vents.co.uk/blog/product-details/tal4hm-rytons-9x3-acoustic-airliner-set-hit-miss/
- Titon A5223 (V50) + TA5005 (SF 418) 2500EA - https://www.titon.com/uk/products/window-door-hardware/window-vents-window-door-hardware/sf-xtra-sound-attenuator-vent/

There are many products which will achieve this acoustic performance, and the mechanical services engineer should check that the required ventilation rate is achieved. This performance can be achieved with both through-the-wall and through-the frame ventilators, and the preferred option should be discussed with the client/installers.

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Front Bedrooms

The requirements are far more onerous for bedrooms overlooking Cheetham Hill Road. The glazing will need to be improved, and a high-performance ventilator will need to be provided.

In terms of the glazing, either the windows could be replaced with units achieving the sound insulation performance detailed in Table 4, above; or secondary glazing could be installed to the existing glazing. Calculations indicate that secondary glazing comprising at least 10mm thick glass, with a cavity of at least 100mm, would achieve the required performance in conjunction with the existing glazing. The thicker the secondary glazing, and/or the wider the cavity, the higher the performance, and this should therefore be discussed with potential suppliers based on the requirement of $47dBR_w$, and the assumed existing construction of 10/12/6mm glass.

Selectaglaze (https://www.selectaglaze.co.uk) is a company which specialises in acoustic secondary glazing. Other suppliers may be able to confirm this performance. The reveals should be lined with an absorptive material to achieve the best performance.

The ventilator should achieve a performance of $44dBD_{n,e,w}$ when open. This is a very high performance, and will require through-the-wall ventilators. Frame mounted ventilators are unlikely to be compatible with secondary glazing. Examples of suitable ventilators include;

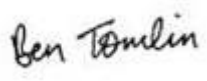
- Titon AAH125HP - https://www.titon.com/uk/products/ventilation-systems/wall-vents/aircore/
- Ryton AAC125HPCWL - https://rts.vents.co.uk/blog/product-details/aac125hpcw-rytons-cowled-super-acoustic-controllable-lookryt-aircore/

Other products may also be available which meet this performance. Again, this will need to be checked for suitability by the M&E consultant.

Should the above mitigation measures be correctly installed, then Manchester City Council's noise criteria will be achieved in all noise sensitive spaces. This is likely to need to be verified after installation.

If you have any queries or comments, please do not hesitate to contact me.

Yours Sincerely,



Ben Tomlin

Associate, dBx Acoustics Ltd

Checked by:

Susan Witterick

Director, dBx Acoustics Ltd

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