Technical Memorandum

To: Russell Adams (Adams PD)

From: Mike Potts (Echo Acoustics)

CC:

Date: 23 September 2025

Re: 87 Piccadilly, Manchester; Great British Doner_Noise

Introduction

This technical memorandum has been prepared by Mike Potts of Echo Acoustics; Mr Potts is a Member of the Institute of Acoustics (MIOA) and is an acoustic Consultant with over 24 years' experience in environmental noise assessment, within both regulatory and private industry roles at a senior level, and including experience in the provision of Expert Witness evidence at Public Inquiry.

This document provides an assessment of potential noise arising from the proposed use of the above premises as a fast food restaurant; specifically, the assessment examines potential levels of noise arising from operation of the kitchen extraction system, this being the principal source of noise associated with the proposals, in so far as affects office space at first floor of the building and above.

Proposals

The proposals involve the installation of a mechanical kitchen extraction system within the building, with the outlet to atmosphere being at ground floor level to the rear of the building, as indicated in Figures 1 and 2. The outlet grille will be located beneath an overhanging structure such that the windows on the rear façade of the building, at first floor level and above, will have no direct line of sight of the outlet grille.

Figure 1: proposed layout showing location of mechanical extraction system for restaurant

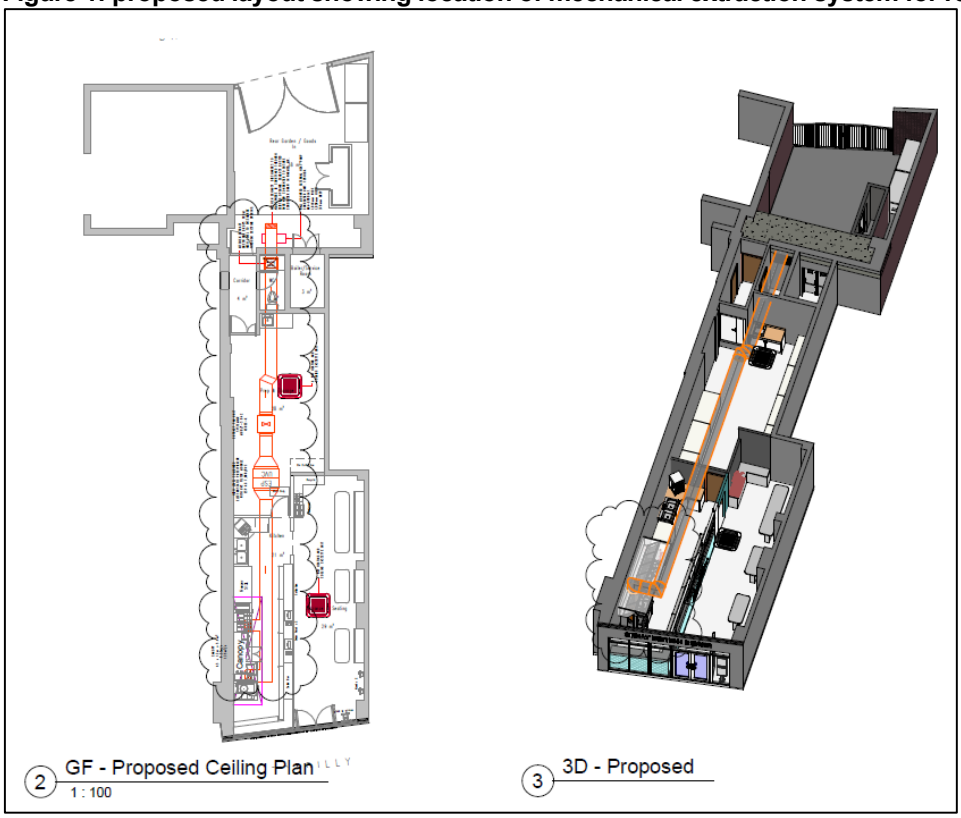


Figure 2: Image of rear facade showing position of proposed extract grille, overhanging structure and office windows above



There are no sources of noise emission from the front building which opens onto Piccadilly (Figure 3), a city centre road used by a significant number of buses, delivery vehicles, taxis and cars i.e. characterised by a very noisy day and night time ambient noise situation.

Figure 3: Premises location



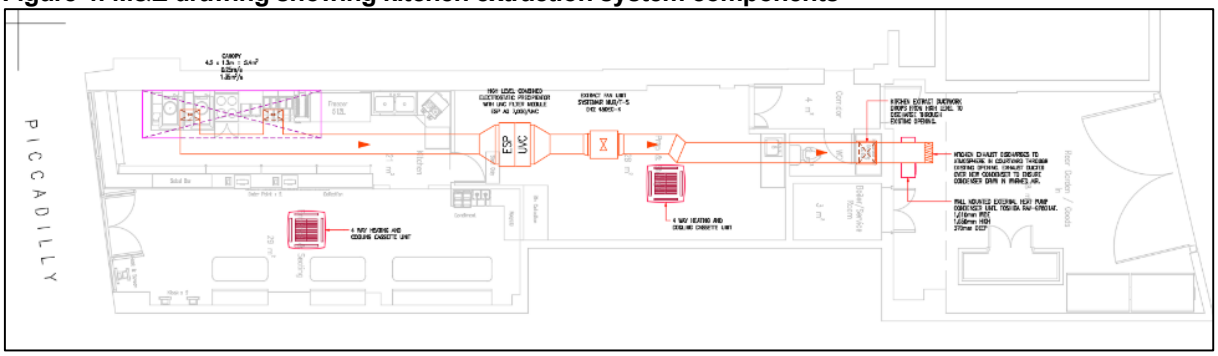
Above the restaurant is existing office space, operating during normal office hours.

Noise aspects

The design drawings show that the extraction system will consist of an electrostatic precipitator beyond which will be a Systemair MUB/T-S 042 450EC-K in-line insulated duct fan, as indicated in Figure 4. The fan unit is the principal source of noise associated with this installation. The sound emission data for the extraction unit is contained within the Odour Assessment Document[1].

[1] Beechfield Consulting Engineers (11/8/2025) "*Great British Doner, 87 Piccadilly, Manchester M1 2DA: Commercial Kitchen Odour Abatement Strategy*"

Figure 4: M&E drawing showing kitchen extraction system components



There will also be Toshiba heat pump condenser unit mounted on the rear wall which will be used for front of house cooling and heating (Figure 5); this is likely to operate intermittently and the data sheet for this equipment shows that it operates with a maximum sound emission, at 1 metre, of 65 dB L_{Aeq} in high-power heating mode. These units typically operate without any 'tonal' or other characteristic noise.

Figure 5: Rear elevation showing relative positions of kitchen extract and condenser unit

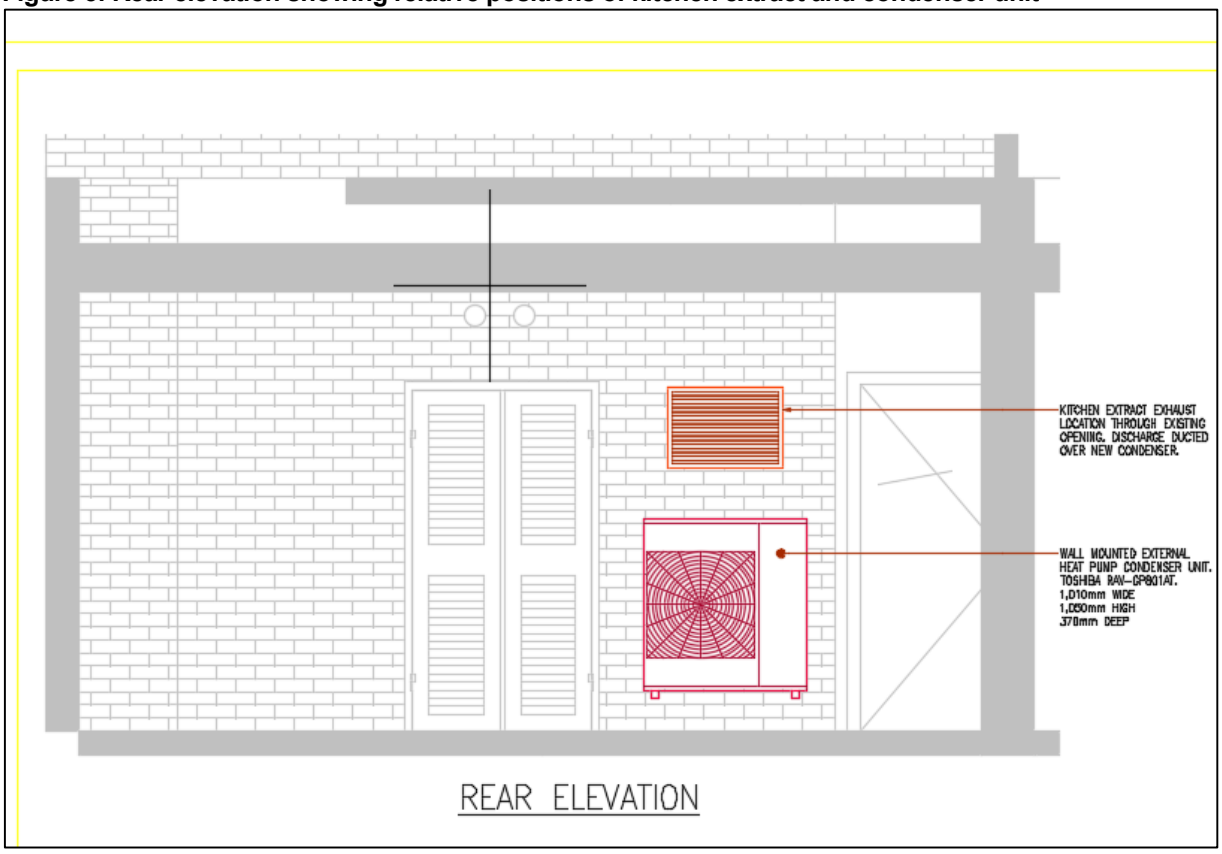


Table 1 at Appendix 1 presents the calculated sound pressure level (dB L_{Aeq}) inside the first floor offices at first floor level, assuming both the kitchen extraction system and Toshiba condenser unit operating simultaneously, and allowing for attenuation of the sound from the equipment due to distance and screening by the structural overhang.

The calculated level was compared to the recommended guideline level presented in Table 2 of **British Standard (BS) 8233:2014 Guidance on sound insulation and noise reduction for buildings**; these are 45 to 50 dB L_{Aeq}.

The assessment in Table 1, which assumed 13 dB of sound attenuation through a partially open window and 30 dB R_W of sound attenuation through a closed window, shows that the equipment sound pressure levels, when operating continuously, will be significantly below the BS 8233 guideline values, even with windows open.

Given that the office space would not be considered a particularly noise sensitive use, operates during the day time only and is likely subject to relatively elevated levels of city centre noise currently, it is reasonable to conclude that the operation of the take away restaurant equipment is unlikely to cause any disturbance for the office staff located above the restaurant.

The internal activities within the proposed restaurant will not generate levels of noise likely to cause a disturbance to the office workers above.

Conclusion

The assessment has calculated noise arising from the principal sources of noise associated with the proposed take away restaurant at 87 Piccadilly, namely the kitchen extraction system and refrigeration heat condenser unit, both located on the rear wall of the building at ground floor level.

The assessment shows that the combined operational noise levels of these items of equipment will be below guideline levels within the offices above.

Internal activities within the restaurant are unlikely to generate significant levels of noise which might adversely affect the office uses above.

In light of the existing city centre ambient noise situation, the assessment concludes that the operation of the restaurant, particularly the fixed plant equipment at the rear of the building, will not cause any disturbance for the office staff above.

Appendix A: Calculations

Table 1: Plant equipment sound emission calculations

Octave band (Hz)	63	125	250	500	1000	2000	4000	Broadband
SWL at fan (dBA)	52	73	76	79	79	75	70	
Att/m (dB)	0.82	0.66	0.33	0.16	0.16	0.16	0.16	
Duct length (m)	8.152	8.152	8.152	8.152	8.152	8.152	8.152	
Duct att (dB) [700 x 350 rectangular - tbc]	0.82	0.66	0.33	0.16	0.16	0.16	0.16	
SWL at termination (dB)	51.2	72.3	75.7	78.8	78.8	74.8	69.8	
End reflection attenuation (dB)	-9	-5	-2	0	0	0	0	
Resultant SWL (dBA)	**42.2**	**67.3**	**73.7**	**78.8**	**78.8**	**74.8**	**69.8**	
Distance to window (m)	4	4	4	4	4	4	4	
Screening (dB)	10	10	10	10	10	10	10	
SPL at window (dBA) (inc +3 dB reflectivity)	12.1	37.3	43.6	48.8	48.8	44.8	39.8	53
Toshiba Unit SPL at 1m (dBA)								*56*
Toshiba Unit SPL at window (dBA) (inc +3 dB reflectivity)								*34*
Combined SPL at window (dBA)								**56**
Office internal w open window (dBA) [-13 dB]								40
Office internal w closed window (dBA) [-30 dB]								23
BS 8233 level for offices (dBA) (Table 2 BS 8233:2014)								**45**
Difference (dB) - open								**-5**
Difference (dB) - closed								**-22**