

99 Gloucester Avenue,
NW1 8LB

A/C Noise Assessment

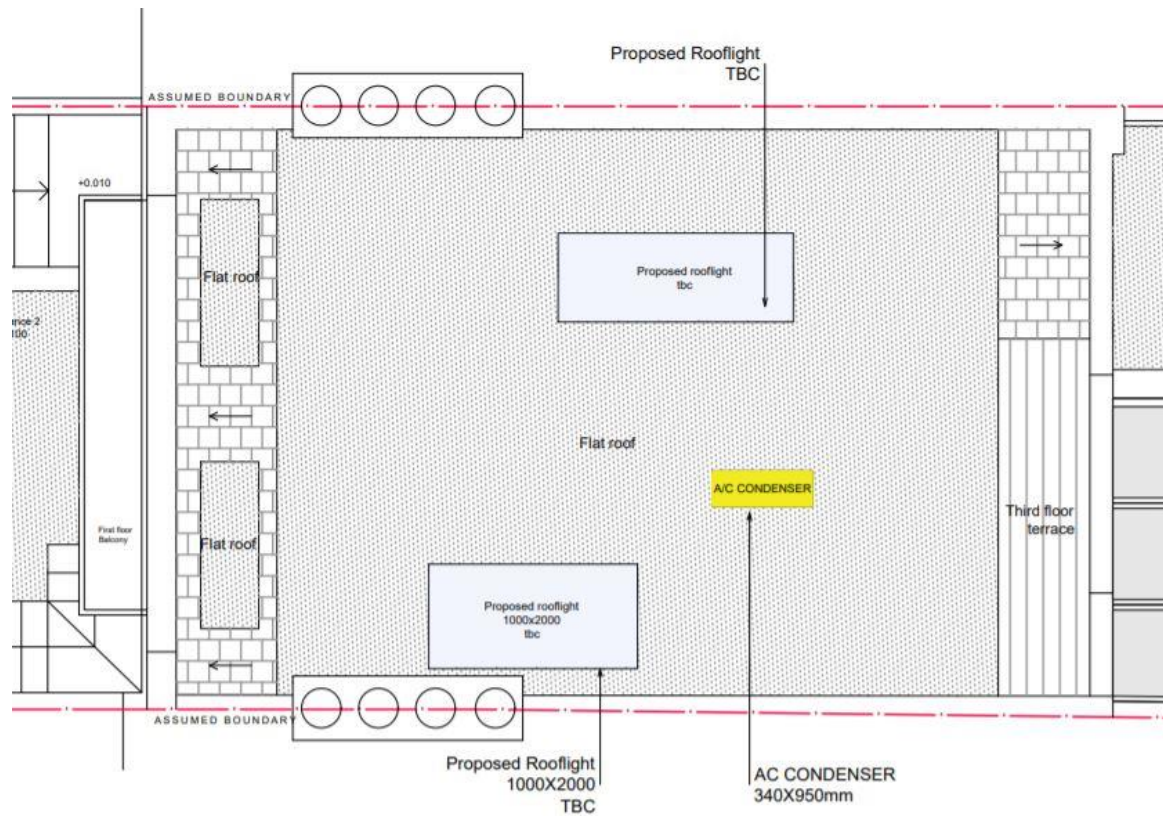
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This document has been written to support the Planning Application for proposed works to 99 Gloucester Avenue, NW1 8LB.

It is proposed to add an air conditioning system in the ground floor study, first floor master bedroom, second floor and third floor rooms, including the addition of an outdoor condensing unit located on the third floor flat roof at the rear of the property.

The unit will be located in the balcony, in order to avoid noise issues for the neighbouring properties, case of this document.

The outdoor unit to be used is the Daikin 5MXM90N and all the specifications are indicated in the attached document "R32 Multi Brochure".



Location of A/C unit AT the third floor flat roof.

NOISE GUIDELINES

The WHO's 'Guidelines for Community Noise' gives the following relevant noise criteria: Guideline values for community noise, from Guidelines for Community Noise (WHO, 1999).

Specific Environment	LAeq, T dB	Time Base (hours)	LAmx, fast dB
Outdoor living area (serious annoyance, daytime and evening)	55	16	n/a
Outdoor living area (moderate annoyance, daytime and evening)	50	16	n/a
Dwelling, indoors	35	16	n/a
Inside bedrooms	30	8	45
Outside bedrooms	45	8	60

The WHO's 'Guidelines for Community Noise' also gives the following general guidance on the expected sound insulation performance of a façade with a partly open window, it states that: "At night-time, outside sound levels about 1 metre from facades of living spaces should not exceed 45 dB LAeq and 60 dB LAmx, so that people may sleep with bedroom windows open. These values have been obtained by assuming that the noise reduction from outside to inside with the window partly open is 15 dB."

This demonstrates the need for a unit cooling function of less than 55dB for use in outdoor living areas to provide adequate and minimal sound away from living areas of a property. (NB please see overleaf the specification of the intended unit).

PROPOSED

CONDENSERS

PERFORMANCE

Air Conditioning Technical Data - DAIKIN 5MXM90N

Outdoor units are fitted with a swing compressor, renowned for its low noise and high energy efficiency.

Outdoor unit				2MXS40H	2MXS50H	3MXS40K	3MXS52E	3MXS68G	4MXS68F	4MXS80E	5MXS90E
Dimensions	Unit	HeightxWidthxDepth	mm	550x765x285				735x936x300		770x900x320	
Weight	Unit		kg	38	42	49		58		72	73
Sound power level	Cooling		dBA	62	63	59		61		62	66
	Heating		dBA			60					
Sound pressure level	Cooling	Nom.	dBA	47	48	46		48			52
	Heating	Nom.	dBA	48	50	47		49			52
Operation range	Cooling	Ambient	Min.~Max. °CDB	10~46		-10~46					
	Heating	Ambient	Min.~Max. °CWB			-15~18					
Refrigerant	Type			R-410A							
	Charge		kg	1.20	1.60	2.0		2.59	2.6	2.99	
			TCO ₂ eq	2.5	3.3	4.2		5.4		6.2	
Piping connections	GWP			2,087.5							
	Liquid	OD	mm					6.35			
	Gas	OD	mm	9.5				9.52			
	Piping length	OU - IU	Max. m	20				25			
	Additional refrigerant charge		kg/m	0.02 (for piping length exceeding 20m)				0.02 (for piping length exceeding 30m)			
	Level difference	IU - OU	Max. m	15							
Power supply	Phase / Frequency / Voltage		Hz / V	1~ / 50 / 220-240				1~ / 50 / 230			
Current - 50Hz	Maximum fuse amps (MFA)		A	16				20			

Sound			pressure			levels:
Cooling	—	52	dBA	<	55	dBA
Heating	—	52	dBA	<	55	dBA

The chosen product demonstrates the ability to produce cooling at the required level, with a typical sound pressure level of max 52dB. This meets requirements for outdoor living areas.