



Ref: P4017/L03/PJK

15 November 2021

To:	Steve West	of:	Studio Neo
Cc:	Distribution List	of:	

Dear Steve,

45-47 Newton Street, Manchester – Plant Noise Assessment

Acoustic & Engineering Consultants Ltd (AEC) has been appointed by Studio Neo, on behalf of Pugh Davies (Northern Quarter) Ltd, to demonstrate compliance with the planning conditions placed on the newly installed mechanical services plant serving the office development at 45-47 Newton Street, Manchester.

Introduction and Site Description

AEC prepared a plant noise assessment, AEC ref. P4017/L02/PJK dated 10 September 2021, in relation to new building services plant to be installed in the ginnel between the enclosed rear courtyard and Newton Street at 45-47 Newton Street, Manchester, as indicated on the attached Figure 1.

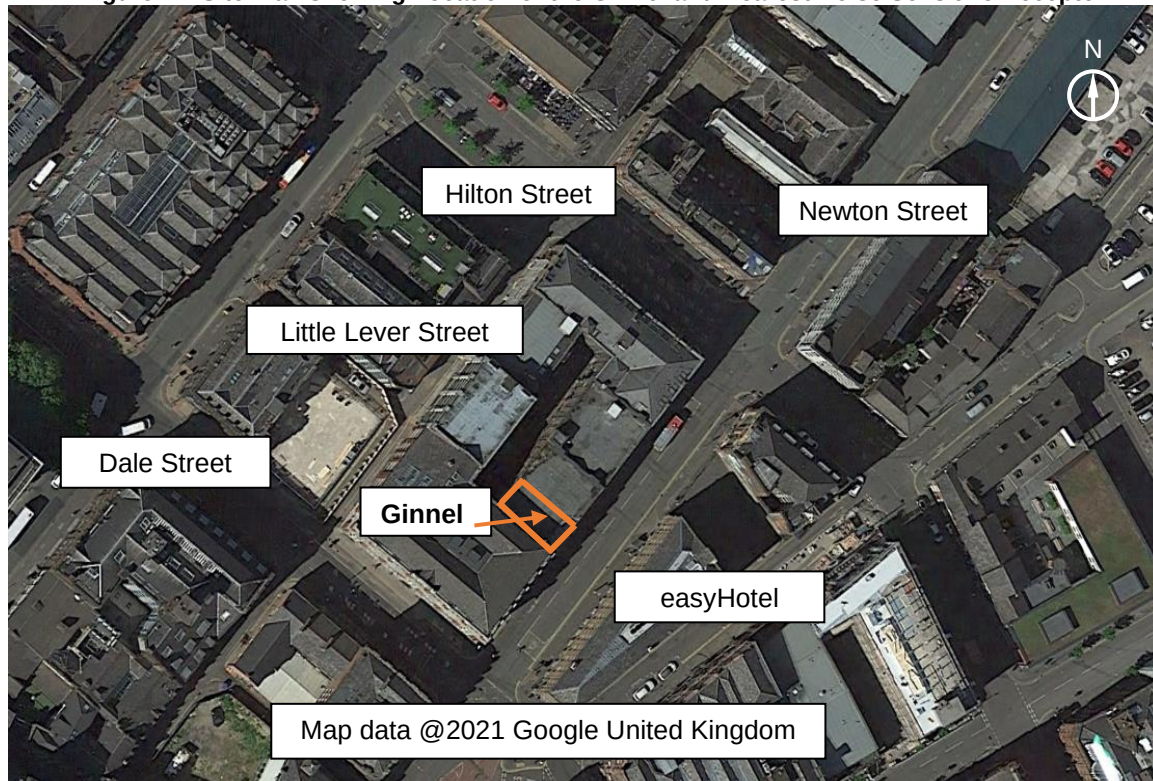
Manchester City Council granted planning permission for the mechanical services plant with the following conditions relating to noise:

“3) (a) The approved plant and equipment shall be installed and managed in accordance with the noise limits as detailed in AEC Plant Noise Assessment Ref P4017/L02/PJK 10 September 2021.

(b) Prior to the units being brought into use a verification report shall be submitted to and approved in writing by the City Council as local planning authority to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic report. The report shall also undertake post completion testing to confirm that the noise criteria have been met and any non compliance suitably mitigated in accordance with an agreed scheme prior to the units becoming operational. The approved scheme shall remain operational thereafter.”

AEC understand that the plant has been installed in accordance with our report and this letter forms the validation report to demonstrate that noise from the plant complies with the proposed noise level limits at the nearest noise sensitive receptors. The nearest noise sensitive receptors include the easyHotel, which is opposite the site on Newton Street, and the offices overlooking the courtyard. The location of this hotel is also attached on Figure 1, below.

Figure 1 – Site Plan showing Location of the Ginnel and Nearest Noise Sensitive Receptor



Basis of Assessment

As presented in AECs September 2021 report, a noise survey was carried out to determine the existing background noise levels at the receptors. Based on these noise levels, a noise level limit was set for each receptor and these are presented in Table 1, below.

Table 1 – Noise Level Limits

Location	Background Noise Level, dB @ Octave Band Centre Frequency, Hz						
	63	125	250	500	1k	2k	4k
easyHotel	55	46	46	44	41	38	31
Courtyard	52	48	47	45	43	36	29

Assessment of Proposed Mechanical Services Plant

It was noted on-site that a Daikin REYQ10 VRV condenser (floor standing/top fan) and a server room condenser Daikin RXM50 (wall mounted/ front fan) have been installed within the ginnel.

Sound pressure levels were measured 1m away from each condenser whilst they were operating at their typical speeds and these noise levels are presented in Table 2, below. The combined noise level measured from these units is also presented.

Noise levels were also measured external to the nearest noise sensitive receptors, however, it was noted that noise breakout from the condensers was inaudible against the prevailing noise climate and, therefore, the noise level breaking out from each unit has been calculated to demonstrate compliance with the planning condition

It should be noted that during the measurements of the plant there were contributions from other sources and the sound pressure level from the plant only would be lower. Therefore, this should be considered worst-case.

Table 2 – Measured Sound Pressure Level of each Condenser

Mechanical Services Plant	Noise Level, dB @ Octave Band Centre Frequency, Hz						
	63	125	250	500	1k	2k	4k
REYQ10 VRV	63	63	60	56	55	47	44
RXM50	58	55	54	52	49	44	38
Combined noise level @1m	65	64	61	57	56	49	45

Based on the measured noise levels presented in Table 2, the combined noise level external to the nearest noise sensitive receptors operating simultaneously has been determined and is presented in Tables 3 and 4, below, for the easyHotel and offices, respectively. This assessment takes into account appropriate distance attenuation to each receptor.

Table 3 – Calculated Noise Level External to easyHotel

Daikin Condenser	Noise Level, dB @ Octave Band Centre Frequency, Hz						
	63	125	250	500	1k	2k	4k
Combined noise level @1m	65	64	61	57	56	49	45
Distance attenuation (20m)	-26	-26	-26	-26	-26	-26	-26
Noise Level External to easyHotel	39	38	35	31	29	23	19
Noise Level Limit	55	46	46	44	41	38	31
Exceedances*	-16	-8	-10	-12	-12	-15	-12

*Rounding error during calculations

Table 4 – Calculated Noise Level External to Courtyard

Daikin Condenser	Noise Level, dB @ Octave Band Centre Frequency, Hz						
	63	125	250	500	1k	2k	4k
Combined noise level @1m	65	64	61	57	56	49	45
Distance attenuation (15m)	-24	-24	-24	-24	-24	-24	-24
Noise Level External to Courtyard	41	41	38	34	32	25	21
Noise Level Limit	52	48	47	45	43	36	29
Exceedances*	-11	-8	-9	-11	-11	-11	-7

*Rounding error during calculations

Tables 3 and 4 demonstrate that the noise level limits presented in AEC report P4017/L02/PJK have not been exceeded. Therefore, noise from the mechanical services plant has complied with Planning Condition 3.

I trust the above is clear and of assistance at this stage, if you require further information, please get in contact.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Paul Knowles', with a stylized flourish extending from the end.

Paul Knowles

Checked by: RDC