

10/06/2021

Mr Daniel Causer
Tyson Construction Ltd
102 Heaton Moor Road,
Stockport
SK4 4NZ

Dear Daniel,

102519 The Curve, Kingsway, Manchester – Discharge of Condition 34

This technical letter provides evidence to discharge Condition 34 of planning reference 126231/JO/2020. The condition is stated below:

“Condition 34

NOISE ATTENUATION OF PLANT. Before the occupation of the authorised apartments, a scheme shall be submitted to and approved by the City Council as local planning authority, detailing the type and specification electrical plant and water pumping equipment to be located within rooms ground floor level, as shown on drawing ref. Ground, First and Second Floor Plans 17-068/2013 Rev H, alongside the arrangements for noise insulation and attenuation to prevent undue noise outbreak from the specified rooms to neighbouring apartments and the external areas surrounding the building. The approved scheme shall be fully implemented prior to the first occupation of the apartments and maintained at all times thereafter.”

A visit was made to the site on Saturday 5th June 2021, and measurements were made within the water plant room and its residential adjacencies. The pump plant in operation was subjectively inaudible within the residential dwellings, and the measurements demonstrated that the plant did not affect noise levels within the residential dwellings. At the time of the visit, the development was nearing completion.

Details of the measurements are contained within this letter.

Noise Measurements

The plans show two plant rooms on the ground floor. One is marked 'electrical plant' and was observed on-site to contain the electricity meters. Since the room did not contain any noisy plant/systems the impact of this room was considered to be insignificant.

Within the room marked 'Plant' the water pumping system is located. The background noise within the room when the plant is not operational was observed to be limited to the sound of water dripping periodically. Two water pumps are located within the room which operate when the residential dwellings draw water (e.g. by turning on a shower, or running a tap). We understand that only one pump is required, and that the second pump serves as a backup. To address a worst-case scenario, both pumps were simultaneously in operation during the measurements.

Noise measurements were taken within the plant room, the bedroom of Apartment 4 on the ground floor, and the Bedroom 1 of Apartment 10 on the first floor. The equipment used is detailed below.

Equipment Description	Type Number	Manufacturer	Serial No.	Date Calibrated	Calibration Certification Number
Class 1 Integrating Real Time 1/3 Octave Sound Analyser	NOR 140	Norsonic	1407510	13/12/2019	473910536
Microphone	NOR 1225	Norsonic	384687	15/01/2021	N/a*
Class 1 Calibrator ¹	NOR 1251	Norsonic	34123	20/07/2020	04743/2

Measurements were taken using the sweep method in order to achieve representative average measurements within the rooms. The results are detailed below:

¹ IEC 60942 (2003) Electroacoustics – Sound calibrators

Description	Duration (mm:ss)	L_{Aeq} (dB)	L_{AF90} (dB)
Sweep in plant room, pumps off (background measurement)	00:31	35	22
Sweep in GF Apt 4 Bedroom, pumps off (background measurement)	01:00	29	21
Sweep in 1F Apt 10 Bedroom, pumps off (background measurement)	01:00	31	24
Sweep in plant room, both pumps operational	01:00	63	63
Sweep in GF Apt 4 Bedroom, both pumps operational	01:00	26	21
Sweep in 1F Apt 10 Bedroom, both pumps operational	01:00	25	20

The pumps were subjectively inaudible within the bedrooms where measurements were taken. A quick listening test was also conducted outside the building, where the pumps were also inaudible.

In the above measurements the noise levels in the rooms when the pumps were not in operation were higher than the measurements while the pumps were in operation. This demonstrates that the pumps do not contribute to noise levels within the room when in operation. The noise levels within the room were driven by road traffic within the surrounding area (please also note that windows and trickle vents were closed for the duration of all measurements, and no construction work was ongoing during the measurements due to the site being closed). The difference in the measurements above, therefore would have been due to short-term differences in road traffic noise emissions from outside the building. The L_{AF90} levels in the bedrooms were either 1 dB lower while the pumps were on (in 1F Apt 10), or at the same level (GF Apt 4), demonstrating that the pumps also do not contribute to the L_{AF90} Background Sound Levels within the bedrooms (e.g. the L_{AF90} Background Sound Levels are also driven by road traffic noise).

The site visit also coincided with the pre-completion testing to demonstrate compliance with Approved Document E to Building Control. We understand that the party floors throughout the development are constructed in the same manner (concrete plank floor with plasterboard ceiling below and insulation within the ceiling void, e.g. Approved Document E Type 1). The airborne results throughout the building ranged from 59 dB $D_{nT,w}+C_{tr}$ to 61 dB $D_{nT,w}+C_{tr}$. The measured $L_{Aeq,1min}$ level within the pump room was 63 dB. The results support the conclusions

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above by demonstrating that the L_{Aeq} level from the pump room would be reduced to around 5 dB L_{Aeq} in the flat above based on the lowest measured party floor result, which is well below the measured background level in the room with no plant operating and subjectively inaudible.

We understand that the construction of the party walls on the ground floor are the same (twin stud plasterboard wall consisting 2no. layers soundbloc both sides with insulation in the cavity, e.g. Approved Document E Type 4). Two airborne wall tests were conducted on the ground floor and the results were 63 dB $D_{nT,W}+C_{tr}$ and 65 dB $D_{nT,W}+C_{tr}$. The same conclusions made for the party floor are also applicable for the party wall between the plant rooms and adjacent residential dwelling.

Conclusion

After conducting an on-site investigation, we conclude that noise levels within the residential dwellings are driven by road traffic noise, and noise from the plant room is subjectively inaudible within the rooms and does not contribute to noise levels within the rooms.

We therefore recommend that Condition 34 is discharged.

Yours Sincerely,



Reid Malster AMIOA
Acoustic Consultant