



Client: JNP Developments & Investments Ltd
Unit A3 Endeavour Business Park
Penner Road
Havant
Hampshire
PO9 1QN

Site: 5&7 East Street, Havant, Hampshire

Date: 7th September 2023

Project: *Desktop assessment to offer suitable mitigation measures to the building elements of the proposed plant room at 5&7 East Street, Havant.*

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Site Description:

5&7 East Street is located in the Centre of Havant, Hampshire. The proposal is for the erection of a 4-storey building comprising of 8 residential dwellings. This site neighbour's a newly constructed site comprising of 26no apartments.

As part of the proposal for the 8 x residential dwellings, there will be a single-storey plant room located to the rear (North) of 5&7 East Street.

The plant room will be built to the rear of the proposed block and thus these dwellings will be the closest dwellings to the plant room.

There are existing commercial buildings and outbuildings located nearby.

The purpose of this desktop assessment is to ensure that the noise associated with the plant room will not have an adverse impact on the residential dwellings.

There is no plant data available for this assessment so no onsite noise levels have been recorded or alternative plant rooms, but data has been received from a similar Noise Impact Assessment (by others) in order to try and establish an internal rating level of the proposed plant room.

Plant Room Noise Levels:

As the plant room is not yet built, or any other plant in operation at the site it is impossible to understand the rating levels of the room. It is the opinion of the author that such rooms would operate at circa 60dBA. This level is substantiated by a noise impact assessment that was undertaken in London (by others) in Victoria Way, London in December 2020.

This plant room consisted of a combined heat & power system (CHP) and boilers. The measured noise level taken inside the plant room was 59dBA $L_{Aeq,T}$ with fluctuations between 58-65dBA. The fluctuations were considered to be due to the pumps being switched on and off, but it must be reinforced that the average value was 59dBA.

Therefore, this desktop assessment will use an internal level of:

Measurement Location	Time Period, τ	$L_{Aeq}(T)$ - dB	$L_{A90}(T)$ - dB
Boiler Room (Internal)	5 minutes	59dBA	57dBA

Plant Room Construction Details:

The following has been taken from the construction drawings of the site and conformed by the project architect.

	Facade	Door	Ceiling/Roof	Floor
Construction Details	100mm brick 100mm cavity 100mm block	Fire Rated timber door FD30	Tiles on felt, pitched roof 150mm insulation placed above Ceiling joists 2 x 15mm plasterboard fixed to underside of joists Plaster/dry lined finish	Concrete floor

The above show the proposed construction details for the plant room. It must be stated that such systems should offer a suitable level of sound reduction as listed in Code of Practice BS8233: 2014, Page 60 – Table E.1B – Airborne sound insulation of walls and partitions’. & BS8233: 2014, page 41 - Table 8 - The sound insulation of roofs’

However, it is recommend that the following acoustic upgrades are applied to the building elements of the plant room. It must be stated that the door will face the bin store for the development. A fire rated timber door should offer a sound reduction of 25-30dB, this would lead to an external value of between 29-34dB based on the measured levels listed above.

Section 7.7.3.2 0 Design criteria for external noise recommends a guideline limit of 50dB $L_{Aeq,T}$ with an upper guidance value of 55dB $L_{Aeq,T}$. It is clear to see that the calculated values for the noise break out through the door are below the recommend values shown above.

As previously stated it is anticipated that the proposed construction details should offer an adequate level of protection for noise break out, however for robustness it is recommend that the following measures be implemented to the plant room.

	Facade	Door	Ceiling/Roof	Floor
Construction Details	100mm brick 100mm cavity 100mm block <i>Cavity Independent wall lining with rw3 rockwool mineral wool placed between studs 2 x 15mm acoustic/fire rated plasterboards fixed to studs Plaster Finish</i>	Fire Rated timber door FD30 with <i>intumescent strips applied to perimeter</i>	Tiles on felt, pitched roof 150mm insulation placed above Ceiling joists 2 x 15mm plasterboard fixed to underside of joists Plaster/dry lined finish <i>Place 150mm rockwool rw3 above ceiling joists Fix resilient bars to the underside of the joists Fix 2 x acoustic/fire rated plasterboards to bars – ensuring the screws do not penetrate the timber above</i>	Concrete floor <i>Ensure a suitable anti-vibration system is installed to any plant that is in contact with the floor. This will help to reduce the vibration through the floor element. Specialist M&E advice should be sought regarding the systems to be used</i>

*the proposed acoustic upgrades are shown in italic in the table above.

Conclusion:

It is anticipated that the noise associated with the plant room will not have an adverse impact on the residential dwellings located in close proximity to the plant room. However, robust and comprehensive mitigation measures have been included within this report to reduce the impact even more and therefore reduce the noise break out from the plant room to a negligible level.

It is understood that the plant room may share a construction element with the ground floor kitchen/living room of Unit 02, if this is the case then the independent wall lining is also recommended to the dwelling side of the party wall also. In addition, it may be prudent not to attach any plant to the wall of the plant room to reduce the transmission through this element. It is essential that mass and isolation are applied to the plant room to improve the overall sound attenuation.

Please see the following page for the site plan with the plant room included.



