From: Michael Lavender <michael.lavender@adur-worthing.gov.uk> on behalf of Michael Lavender
Sent: 17 May 2022 14:42
To: Peter Barnett
Subject: AWDM/0384/22

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Hi Peter,

My apologies for the delay in responding to this application.

There would appear to be contradictions in the application that would impinge on the final acoustic design of this development.

The Energy and Sustainability Document,

3.3.7 Passive ventilation has been designed for by including openable windows to all rooms. These measures mean that it is anticipated that the proposed dwellings would not be specified with active cooling.

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High Standards of Energy Efficiency

3.3.8 Estimations of the development's energy demand and CO_2 emissions after energy efficiency measures have been based on the construction specification proposed in Table 3. The second column in this table sets out L1A limiting fabric parameters in order to show the elements of the specification that provide an improvement over what is required by Building Regulations. The specification incorporates low U-values, a low air leakage, good thermal detailing, and low energy lighting.

Table 3: Proposed construction specification

	L1A limiting fabric parameters	Proposed construction specification
U-value of external wall	0.30 W/m^{2}K	0.24 W/m^{2}K
U-value of floor	0.25 W/m^{2}K	0.15 to 0.16 W/m^{2}K
U-value of roof	0.20 W/m^{2}K	0.11 W/m^{2}K to 0.20 W/m^{2}K
U-value of windows	2.00 W/m^{2}K	1.40 W/m^{2}K
Air permeability	10 m^3/h.m^2 at 50 Pa	5 m^3/h.m^2 at 50 Pa
Thermal bridging	Default y-value of 0.15	The use of calculated details to provide a y-value of circa 0.059 to 0.070
Ventilation	System 1 - intermittent extracts	System 3 – centralised mechanical extract
Lighting	75% low energy lighting	100% low energy lighting

3.3.9 Tables 4 and 5 detail the predicted energy demand and CO_2 emissions of the development after energy efficiency measures have been accounted for. A SAP calculation for Plot 1 for the 'baseline' and 'be lean' scenarios is provided in appendix A so that the method for calculating CO_2 emissions can be validated.

The continuous mechanical extract ventilation system relies on passive background ventilation, i.e if you are continuously extracting air from the building that air needs to be replaced.

The acoustic report specifies the glazing to meet the good internal noise standards but does not cover ventilation or overheating.

6.13 Internal noise levels should be considered in the context of room ventilation and overheating requirements. As the sound reduction performance requirements are greater than 10dB, the windows will need to be closed to achieve the internal noise criteria.

6.14 Therefore, an alternative form of ventilation and/or cooling will be required so that occupants can retain access to fresh air and retain thermal comfort without compromising their noise climate. The ventilation and/or cooling system chosen should be designed so that it does not compromise the sound insulation performance of the building fabric. In our discussions, ADC stated that they require 'whole dwelling' ventilation to be installed.

It is unclear how the proposed ventilation strategy for the development will impact on the internal noise objectives. Furthermore I would suggest that we need to see an overheating assessment based on the proposed noise mitigation and ventilation requirements to meet the internal noise criteria.

Also the living spaces only have large folding doors, so noise ingress will be high when these are opened. The acoustic report will need to do the rigorous noise calculations on all the rooms to show they can meet the relevant noise standards.

Finally, the acoustic report refers to a 1.8 m wall, but the external boundary wall is described as a retaining wall and the 1.8m wall box is pointing to the patio area? Please can this be clarified.

Thank you.

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