

Design note.

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Comments on compliance with Planning Condition 71.

1. Summary.

This document provides comment on the proposed separating constructions between apartments in line with the requirements stipulated in Planning Condition 71 imposed upon the scheme. This states that a sound insulation performance 5 dB better than the minimum standards of the Building Regulations should be achieved where walls/floors separate different types of rooms/uses in adjoining dwellings (eg, a bedroom adjacent to a living room).

A dry separating wall construction and concrete floor construction are proposed, both of which are capable of achieving the performance requirements stipulated in Planning Condition 71.

2. Criteria.

Planning Condition 71 states the following:

'Prior to commencement of the development of this plot, details shall be submitted to and approved in writing by the Council, of an enhanced sound insulation value $D_{nT,w}$ and $L'_{nT,w}$ of at least 5dB above the Building Regulations value, for the floor/ceiling/wall structures separating different types of rooms/uses in adjoining dwellings, namely eg. living room and kitchen above bedroom of separate dwelling. Approved details shall be implemented prior to occupation of the development and thereafter be permanently retained.

Reason: To ensure that the amenity of occupiers of the development site is not adversely affected by noise.'

Table 1 summarises the minimums sound insulation performances to be achieved in line with Condition 71 where walls/floors separate different types of rooms/uses in adjoining dwellings.



Table 1 Minimum sound insulation performance where walls/floors separate different types of rooms/uses in adjoining dwellings

Separating element	Airborne Sound Insulation	Impact sound insulation
Walls between apartments	$D_{nT,w} + C_{tr} \geq 50$ dB	N/A
Floors between apartments	$D_{nT,w} + C_{tr} \geq 50$ dB	$L'_{nT,w} \leq 57$ dB
Floor between apartments and commercial unit	$D_{nT,w} + C_{tr} \geq 50$ dB	N/A

3. Proposed constructions.

3.1 Apartment separating walls.

It is understood that the following drywall construction is proposed between apartments with an overall zone of 250 mm (ie, British Gypsum system reference A216007):

- 2x 15 mm Soundbloc to both sides supported on independent 'I' studs
- 190 mm cavity with 100 mm mineral fibre insulation within the cavity.

This construction achieves a laboratory sound insulation performance of $R_w + C_{tr}$ 62 dB. Assuming a typical lab-to-site tolerance of 9 dB and suitable flanking detailing, the construction is expected to achieve an in-situ sound insulation performance of $D_{nT,w} + C_{tr}$ 53 dB. This is compliant with Planning Condition 71.

3.2 Floors between apartments.

The following floor construction is understood to be proposed between apartments:

- 90mm zone incorporating engineered timber flooring over a dry underfloor heating system set within an insulation layer
- Resilient layer
- 200 mm flat pre-stressed concrete slab
- Suspended plasterboard ceiling with a 160 - 400 mm services void above.

This construction is capable of achieving the vertical sound insulation requirement on the basis that the resilient layer is selected to achieve a minimum performance of ΔL_w 17 dB.

3.3 Floor between apartments and commercial unit.

The same floor construction is understood to be proposed between the Level 1 apartments and commercial unit below. The shell and core construction therefore complies with the $D_{nT,w} + C_{tr} \geq 50$ dB requirements as per the comments in Section 3.2.

Should noisy activities be proposed within the commercial unit (eg, amplified music), enhancements would be required as part of the tenant fit-out. These would typically include the installation of a mass barrier ceiling and independent linings installed to walls/columns.