

Noise Impact and Mitigation Report

Site Address: 130 South Street, Lancing, BN15 8AU

Prepared by: Nie Associates Ltd

Date: November 2025

Prepared as a stand-alone report in support of the proposed conversion and partial retention at 130 South Street.

1. Introduction

This Noise Impact and Mitigation Report has been prepared to assess potential noise impacts arising from the retained commercial unit located on the ground floor of 130 South Street, Lancing, and to describe the proposed measures that will protect residential amenity in the new flats above and to the rear. The proposed development includes the retention of approximately 40 m² of commercial space on the ground floor, with the creation of one one-bedroom flat to the rear and one two-bedroom flat on the first floor.

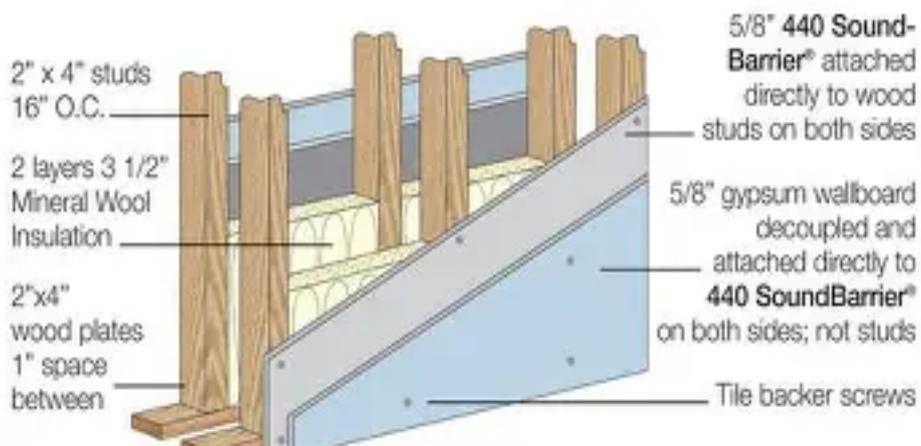
2. Noise Sources and Potential Impacts

Potential sources of noise include activity within the retained commercial space, such as customer interaction, office equipment, or light machinery, as well as general environmental noise from South Street. Without mitigation, airborne and impact noise from the commercial premises could affect the amenity of future residents in the new flats.

3. Wall Noise Mitigation

To prevent transmission of airborne noise between the commercial and residential spaces, a high-performance wall construction will be installed as illustrated below. The separating wall system will comprise: Two separate 2 x 4 inch timber stud frames spaced approximately 1 inch apart. Two layers of 3½ inch (90 mm) mineral wool insulation within the cavity. 5/8 inch (15 mm) gypsum wallboard fixed to 440 Sound-Barrier boards on both sides. Joints staggered and sealed to prevent flanking sound transmission. This system exceeds the requirements of **Approved Document E** by providing airborne sound insulation performance of at least $D_{nT,w} + C_{tr} \geq 45 \text{ dB}$ between commercial and residential occupancies.

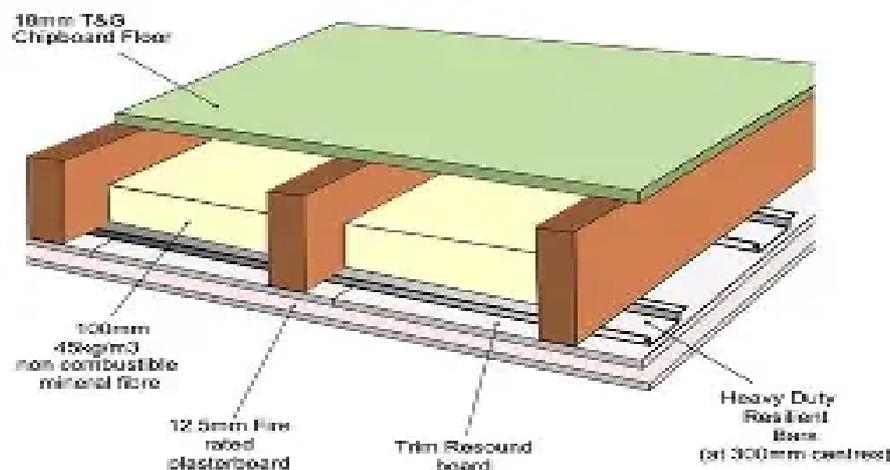
Figure 1: Typical sound-insulated separating wall construction



4. Floor Noise Mitigation

To reduce airborne and impact noise from the commercial unit to the residential flats above, the separating floor will be constructed to the following specification: 18 mm tongue-and-groove chipboard floor, glued and screwed. Trim Resound acoustic board or similar resilient underlay. 100 mm (45 kg/m³) acoustic mineral wool between timber joists. Heavy-duty resilient bars at 300 mm centres to decouple the ceiling structure. Two layers of 12.5 mm fire-rated plasterboard with staggered joints and acoustic sealant. This specification achieves an airborne sound insulation of **DnT,w + Ctr ≥ 50 dB** and an impact sound level of **L'nT,w ≤ 55 dB**, in line with Building Regulations **Approved Document E** and **BS 8233:2014** guidance.

Figure 2: Typical sound-insulated floor construction between commercial and residential areas



5. Standards and Compliance

All proposed acoustic constructions comply with the performance requirements of **Approved Document E: Resistance to the Passage of Sound** and meet internal noise level targets set out in **BS 8233:2014 – Guidance on Sound Insulation and Noise Reduction for Buildings**. Internal noise levels will be maintained within recommended limits: Living rooms: ≤ 35 dB LAeq (16-hour daytime period) Bedrooms: ≤ 30 dB LAeq (8-hour night period)

6. Conclusion

With the installation of the specified wall and floor constructions, the proposed development at 130 South Street will achieve excellent acoustic separation between the ground-floor commercial use and the residential flats above and behind. The mitigation measures will ensure a comfortable internal acoustic environment and full compliance with national standards. Therefore, the development will not result in any adverse noise impact on the intended occupiers of the new dwellings.

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