

Acoustic Upgrade and Residential Insulation Report

Commercial Building Improvements and Residential Acoustic Protection Measures

Site Address:

The Royal Arms
Main Street
Sutton Cheney
Leicestershire

This report outlines proposed acoustic upgrade works to the existing commercial property together with acoustic protection measures proposed for the new residential dwellings. The purpose of the works is to minimise airborne sound transmission, improve residential amenity, and reduce the impact of commercial activity and external environmental noise.

1. Existing Commercial Property Acoustic Upgrades

The existing commercial property will undergo a programme of acoustic improvement works to reduce sound breakout from commercial activities into adjoining and nearby residential areas.

2. Wall Acoustic Upgrades

Existing walls within the commercial premises will be upgraded through the installation of additional acoustic lining systems. Works are expected to include independent metal stud framing, acoustic mineral wool insulation, resilient bars where required, and multiple layers of acoustic plasterboard.

3. Ceiling Acoustic Upgrades

Existing ceilings will be upgraded using suspended acoustic ceiling systems designed to improve sound insulation performance. Works may include resilient suspension systems, acoustic insulation quilt, acoustic boarding, and additional ceiling mass.

4. Acoustic Sealing and Flanking Control

Junctions, service penetrations, and gaps within the building fabric will be acoustically sealed to minimise flanking sound transmission.

5. Proposed Residential Dwelling Acoustic Measures

The proposed new dwellings will incorporate enhanced acoustic design measures to improve internal residential amenity and reduce the impact of external commercial and road noise.

6. External Wall Insulation

External walls of the proposed dwellings will be insulated using acoustic insulation materials positioned within cavity wall construction or independent lining systems.

7. Acoustic Wall Boarding

Internal surfaces of external walls exposed to higher noise levels will incorporate acoustic plasterboard systems with resilient bars and acoustic insulation layers where required.

8. Double Glazing Installation

Double glazed window units with enhanced acoustic performance will be installed within the proposed dwellings.

9. Ventilation Strategy

Where higher external noise levels are present, acoustically attenuated ventilation systems may be installed to allow windows to remain closed whilst maintaining adequate ventilation.

10. Expected Acoustic Benefits

The proposed upgrade and insulation works are expected to significantly reduce airborne sound transmission and improve overall residential living conditions.

Summary of Proposed Acoustic Measures

Acoustic Measure	Purpose
Acoustic wall lining	Reduce airborne sound transmission
Acoustic ceiling upgrades	Improve separation between spaces
Acoustic mineral wool	Absorb airborne sound within cavities
Acoustic plasterboard	Increase wall mass and sound insulation
Double glazing	Reduce external noise ingress
Acoustic sealing	Prevent flanking sound transmission

11. Conclusion

Subject to the implementation of the acoustic upgrade works and residential mitigation measures outlined within this report, the development is expected to achieve improved acoustic separation and an enhanced level of residential amenity.