

ACOUSTICAL DESIGN SPECIFICATIONS

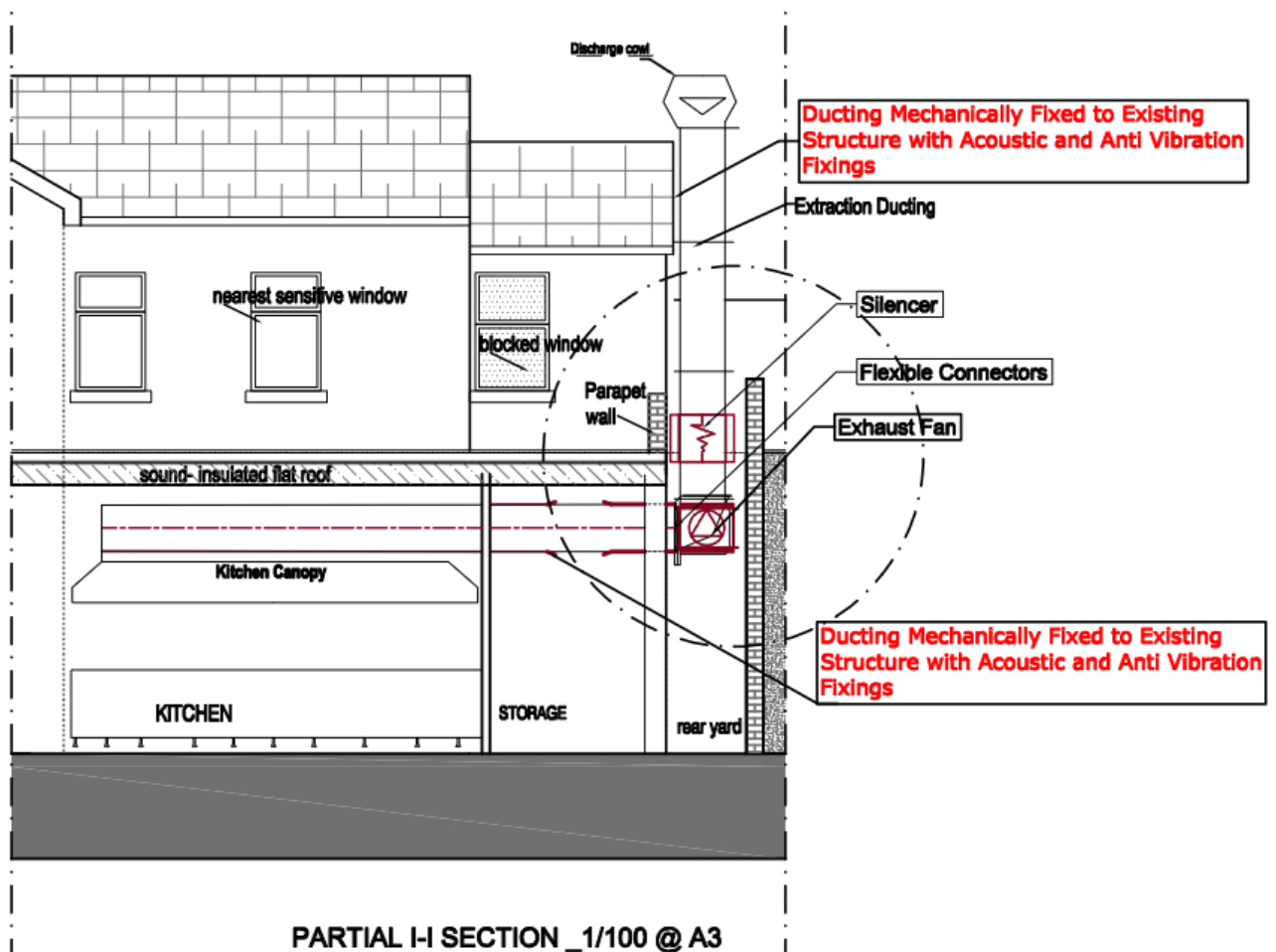
Supporting Technical Document – May 2026

1. Introduction

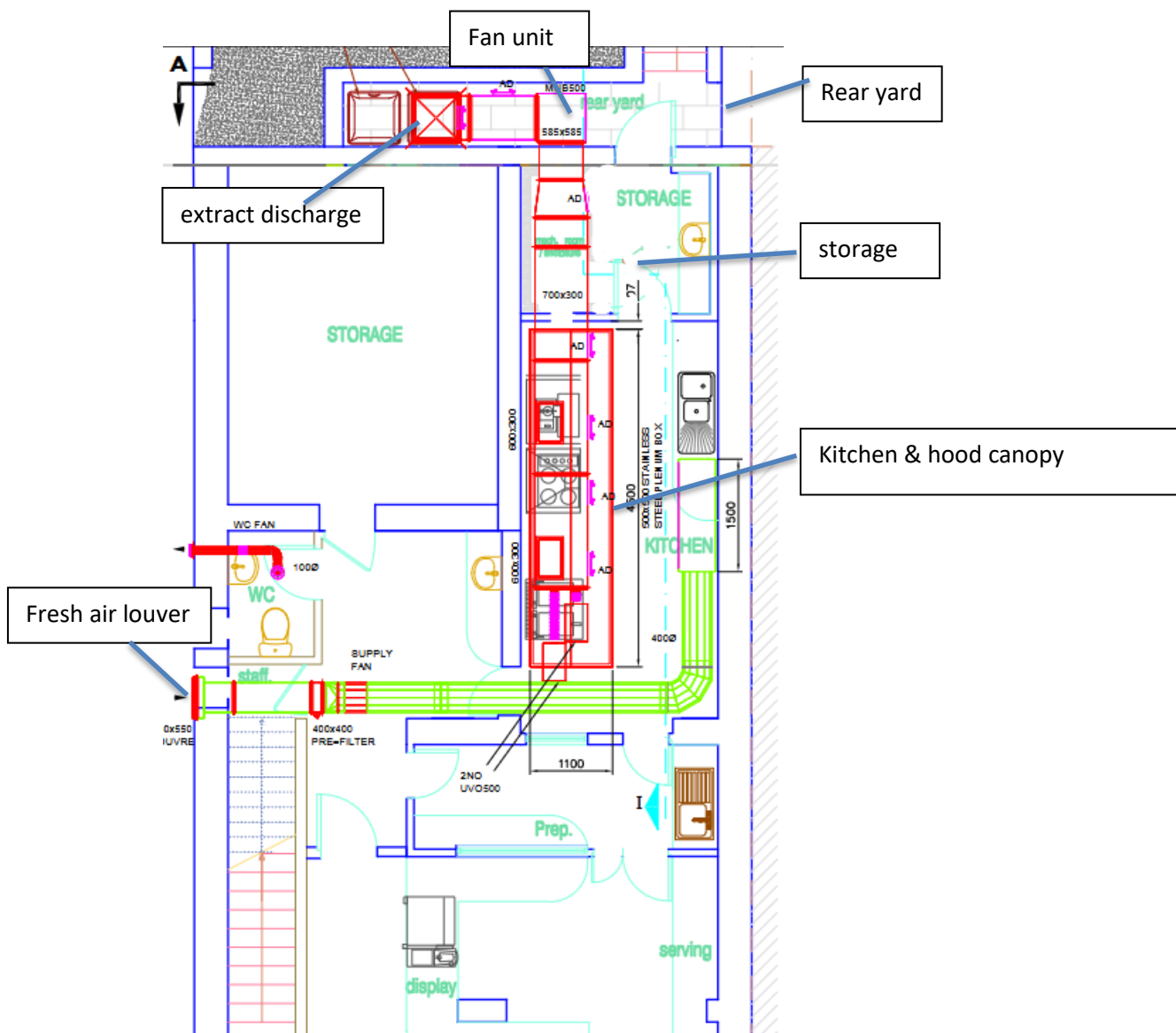
This supporting technical document has been prepared in conjunction with the Design Statement and accompanying Noise and Odour Assessment Report in order to illustrate the acoustic design principles, construction details, and mitigation measures incorporated within the revised scheme.

The document outlines the coordinated architectural and mechanical strategy developed to minimise potential noise impacts associated with the commercial kitchen extract system, mechanical equipment, and airflow distribution.

The acoustic approach has been developed in accordance with established acoustic assessment principles, including source control, transmission path reduction, vibration isolation, and protection of sensitive receptors.

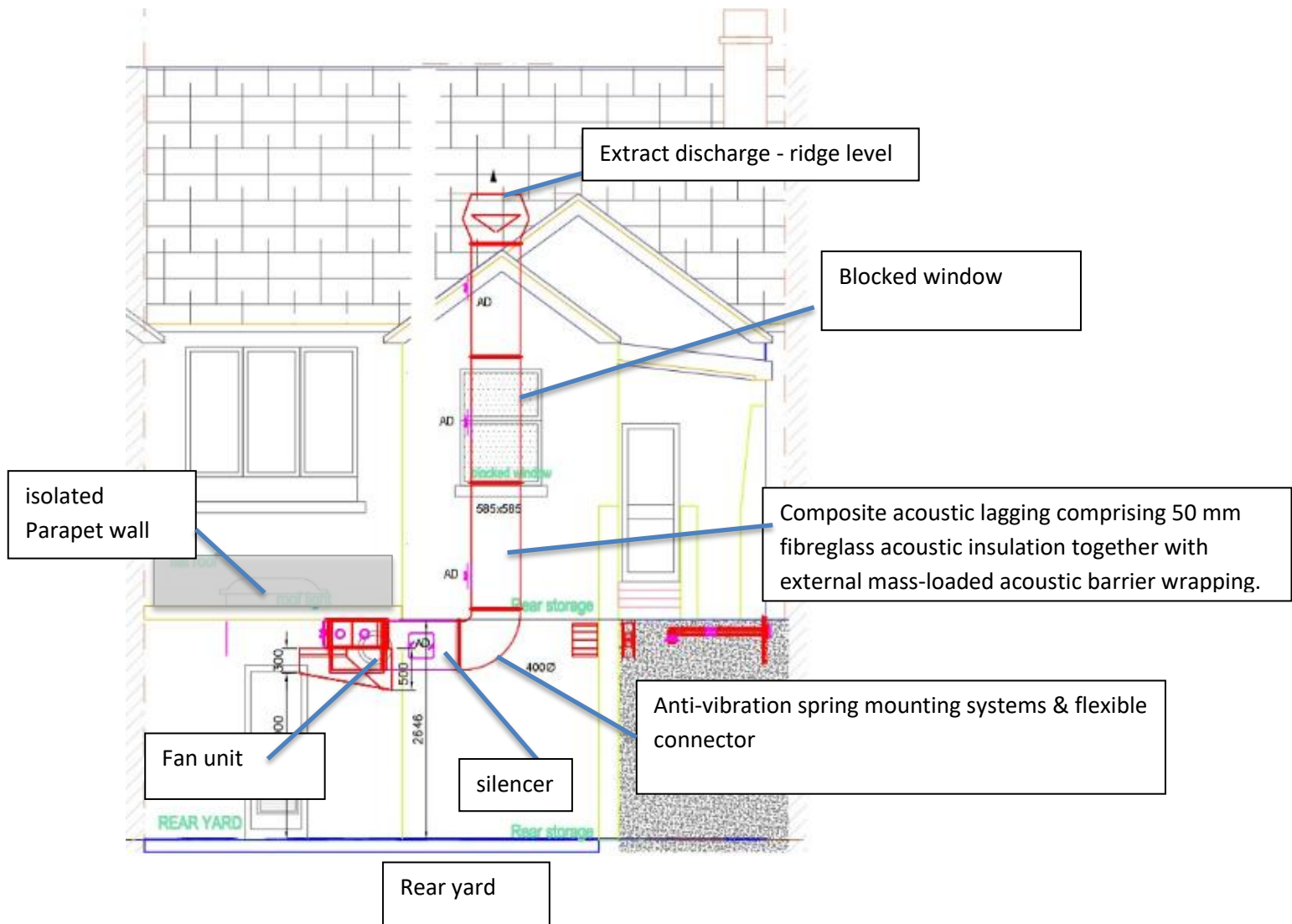


- Relocation of the kitchen and extract system to the rear section of the building
- Enhanced acoustic build-up applied to roof and ceiling constructions
- Reconfiguration of rear areas as storage spaces
- Vertical routing of extract ductwork
- Extract discharge terminating above ridge level
- Fan and extract duct installation mounted using anti-vibration systems
- Integration of acoustic silencers within the extract route
- Roof-level parapet wall providing acoustic screening in front of nearby residential receptors
- Application of acoustic treatment layers to surfaces where sound reflection may occur
- Acoustic sealing to all penetrations and junctions
- Fresh air intake and extract discharge positioned on separate elevations



3. Ventilation and Ducting Strategy

- Reduced duct lengths to minimise turbulence and regenerated noise
- Vertical extract routing along the rear façade
- Avoidance of ductwork passing through or above residential accommodation
- High-level discharge arrangement to improve dispersion performance
- Fresh air intake relocated to the side elevation
- Flexible duct connections and anti-vibration mounting systems
- Acoustic sealing at all penetrations and junctions



4. Fan Mounting and Vibration Isolation

The fan and associated ductwork shall be isolated from the building structure using neoprene or spring anti-vibration isolators and flexible duct connectors to minimise structure-borne vibration transmission.

A composite acoustic lagging system shall be applied to the ductwork, comprising approximately 50 mm (2") fibreglass acoustic blanket insulation as the inner absorptive layer together with an external mass barrier layer such as mass loaded vinyl (MLV) or equivalent acoustic membrane.

- Anti-vibration spring mounting systems
- Acoustically isolated wall brackets
- Flexible duct connections
- Acoustic silencer / attenuator installation
- No rigid connections between ductwork and building structure
- Acoustic sealant applied to all penetrations and junctions

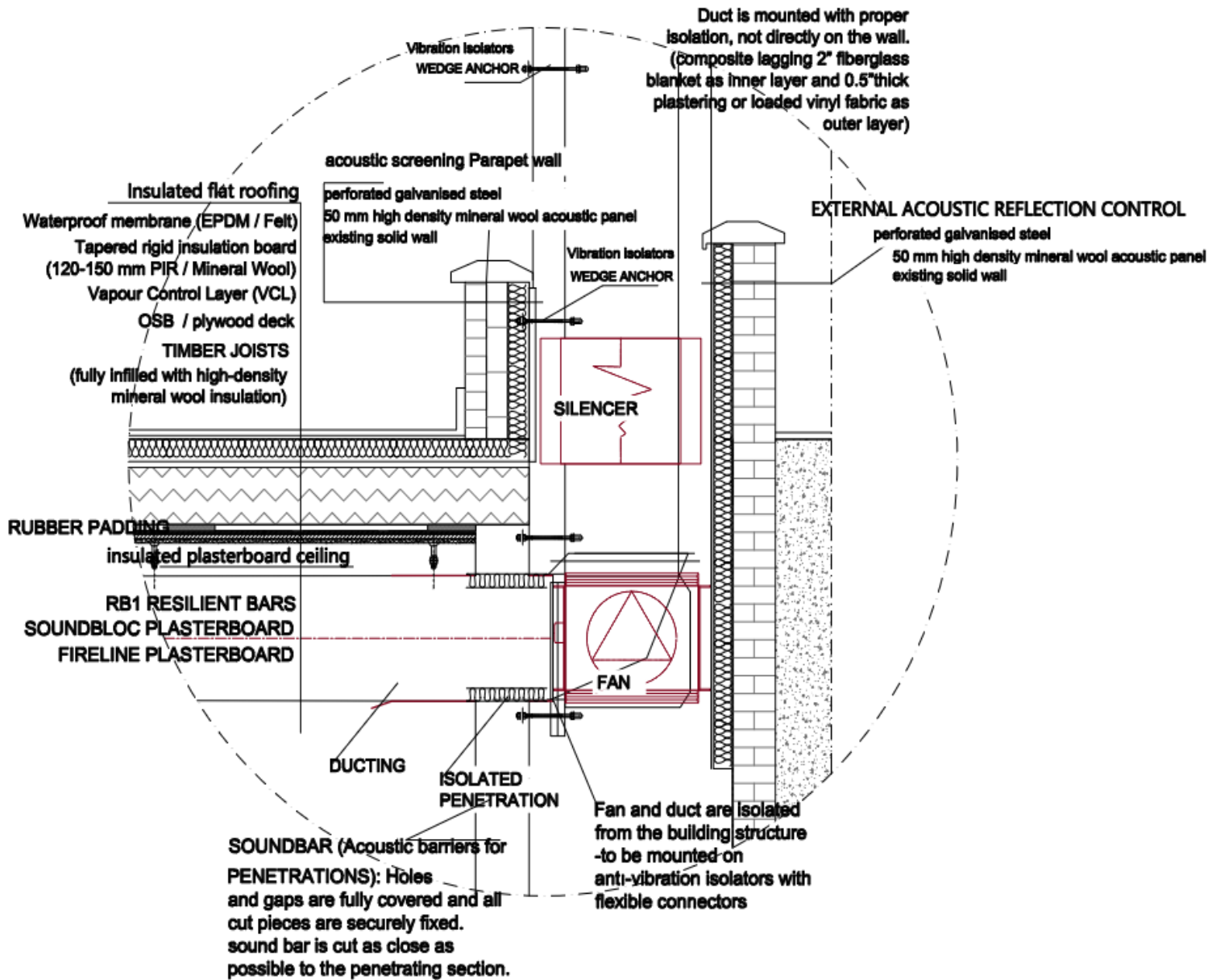
5. Flat Roof & Kitchen Ceiling Acoustic Construction Detail

The flat roof structure above the kitchen and mechanical service areas shall be upgraded using a multi-layer acoustic roof construction designed to reduce airborne and low-frequency noise transmission.

The existing rooflight shall be permanently removed and reconstructed to match the surrounding roof build-up, creating a continuous acoustically reinforced roof structure.

The roof build-up shall comprise:

- Waterproof membrane
- Rigid acoustic insulation board
- Vapour control layer (VCL)
- OSB / plywood structural deck
- Timber joists fully infilled with high-density mineral wool insulation
- Resilient bar system / acoustic suspension system
- Double acoustic plasterboard lining
- Acoustic sealant applied to all junctions and penetrations



6. Parapet Acoustic Screen and External Mechanical Plant Arrangement

The parapet wall introduced at roof level has been designed to interrupt the direct line of sight between the externally mounted fan unit and nearby residential windows.

Localised acoustic absorptive treatment shall be applied to reflective surfaces where required.

External Acoustic Reflection Control Detail:

- Existing solid brick / masonry wall surface
- 50 mm high-density mineral wool acoustic panel
- Perforated galvanised steel external facing
- Corrosion-resistant fixings

7. Acoustic Window Infill Detail

The windows within the storage area where the extract and mechanical ventilation system is installed shall be permanently blocked using a high-performance multi-layer acoustic infill detail. The infill construction shall comprise:

- Acoustic plasterboard lining
 - High-density mineral wool insulation infill
 - Brick / masonry infill wall construction or additional high-density acoustic plasterboard system
- All junctions shall be acoustically sealed using acoustic mastic.

8. General Installation Note

All acoustic materials, vibration isolation systems, duct supports, sealants, fixings, and associated components shall be installed in accordance with manufacturer specifications and relevant technical standards.

9. Closing Technical Note

This supporting technical document has been prepared in support of the planning application to illustrate the acoustic mitigation strategy incorporated within the revised scheme, developed to minimise potential noise impacts associated with the proposed mechanical ventilation and extract system.

All details may be further refined where required in accordance with applicable Building Regulations requirements, final construction detailing, mechanical ventilation system requirements, odour control specifications, and relevant electrical installation standards. All systems, materials, fixings, and installation works shall be carried out in accordance with the relevant current regulations, technical standards, and manufacturer recommendations.