



Client: Reigate BSR Reading Ltd
89-91 Basingstoke Road
Reading

Site: Proposed separating floor detail
89-91 Basingstoke Road
Reading

Date: 23rd July 2025

Project: Upgrades to separating floor for conversion of the 1st floor office space to meet the standards set by the planning condition shown below:

3. No development shall commence on site until a detailed scheme for protecting the dwellings from noise emissions from the ground floor commercial use and informed by an assessment of the likely noise emissions from the approved commercial use, has been submitted to and approved in writing by the Local Planning Authority. The scheme itself shall be designed, specified and constructed so that the sound insulation performance of the separating floor/ceiling between the uses achieves a minimum airborne sound insulation performance of greater than or equal to 55 dB (Dntw +Ctr) and ensures that the noise levels within the property do not exceed the values specified in BS8233:2014 with appropriate penalties and adjustments for the character of the noise. The scheme shall make suitable provision for insulation from structure borne noise.

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The purpose of this document is to offer some measures that could be implemented to the separating element between the ground floor commercial shop & 1st floor dwellings level in order to comply with the requirements shown above.

The current separating detail between the ground floor and 1st floor currently comprises of:

1. Concrete slab
2. Steel beams
3. Existing tile & grid ceiling

It is understood that the perimeter of the building is predominantly masonry with standard materials.

The issue of flanking transmission is also an essential aspect of such works and some possible details for this will also be included within this document.

Separating Floors:

It is recommended that the following system should be implemented throughout the development. The below works can be installed to the separating ceiling at ground floor level (after existing ceiling removed) in the majority of noise sensitive and other rooms.

- Steel beams encased using the encasement system shown on the AutoCAD sketch
- Collecta screed board laid throughout the 1st floor with the necessary isolation and flanking strips
- **Laid on top of 75mm Collecta DeckFON batten & flanking strip**
- **50mm rw3 laid in between battens**
- 5mm Mass Loaded Vinyl (MLV) laid on concrete slab
- MF suspended ceiling installed throughout the ground floor with lkoustic acoustic hangers– ensure void maintained
- 60kg/m³ mineral wool placed on top of MF suspended ceiling – ensuring air gap
- 1 x 19mm acoustic plank fixed to MF ceiling
- 5mm MLV bonded in between plasterboard
- 1 x 15mm acoustic plasterboard
- Plaster Finish

***The 2 x items on bold are not shown on the AutoCAD sketch but they should be installed as part of this separating system.**

The above ceiling offers high levels of mass and isolation and creates a service void for the dwelling services to run, this reduces the possibility of penetrations within the system and maintains integrity.

The acoustic floor deck should be laid on top of the existing floor & MLV which is bonded down to reduce penetrations through the floor joists and create isolation above the floor line, the addition of the MLV above will also increase the mass of the system. The acoustic floor should be installed alongside the isolating perimeter detail strips to minimize transfer through the building elements.

Acoustic sealant should be applied to each and every layer during the build.

Steel Encasement:

It is essential that the steels apparent are independently boxed in prior to the ceiling works, ensuring that none of the encasement is in contact with the steel, using the method below:

- Place rw3 mineral wool between steel web
- Encase the steel – ensuring no part of the system contacts the steel
- Place rw3 mineral wool steel around the encasement
- Fix 2 x acoustic plasterboard to encasement

Similar systems/methods can be applied to all vertical steels and steel located inside any party walls or perimeter walls etc. Where the steel is higher than the finished timber floor then it is essential the steel is isolated from below and also that the acoustic floor system is above the steel and does not make contact.

In cases where the steel and the structures are in contact (not recommended but possibly unavoidable) then an isolation layer can be placed at the junction – something similar to an isorubber compound that separates the steel from the structure. This can also be placed on top of the steels located in the floor before any acoustic floor deck is laid above.

Steels are a weak point acoustically and there are numerous steels that have already been installed. It is essential that all steels are suitable isolated to ensure complete separation between structures.

The perimeter treatment is recommended to be installed to both the ground floor & 1st floor of the building to reduce the possibility of flanking transmission, but the ground floor comprises of the shop which is already in use so this may be difficult. The flanking treatment can consist of:

Some possible perimeter detailing is shown in the specification below:

- Ensure any holes and gaps are filled
- Cavity
- Metal/timber stud with 60kg/m³ mineral wool slab insulation between studs
- 2 x 15mm acoustic/fireline plasterboards – with MLV bonded between plasterboard

An independent wall lining offers high levels of isolation and another service void for pipes and cables etc. all whilst maintaining high levels of sound insulation. If there is not enough space then a more slimline system could be used. The thermal requirements of the building are unknown but viewing the plans indicates a thermal board needs to be applied, it is important this is not dot & dabbed to the perimeter if possible, but on a system such as the above.

The LPA have insisted on a high level of improvement and overall sound attenuation so there are many elements that will contribute to the final level of performance

There are some general installation policies to follow and things to avoid:

- Avoid dot and dab completely on the build
- Ensure each and every hole is filled in each layer of the specification
- Completely isolate all steels
- Complete and maintain the integrity of the separating floors & walls
- When using resilient bars, use the correct length screws so you don't fix into the studs
- Avoid standard wall board
- Stagger all plasterboard joints
- Tape or seal all plasterboard joints
- Avoid spotlights if possible
- Avoid any sockets on timber party walls (if they are installed you can get either putty pads or build a box behind the sockets)
- Stagger these sockets so they are not directly back-to-back
 - Ensure all service voids are filled and isolated
- Ensure all mortar joints are completely filled
- Ensure there are no dry joints on separating elements
- Ensure all joints in every aspect of the build are sealed
- Ensure the correct diameter holes are drilled for service pipes
- Ensure these holes are then filled.

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Products to use:

The following list is guidance on the products to use to try and improve the sound attenuation at the site.

- Insulation - Rockwool RW3 mineral wool slab insulation is 60kg/m³ and is 1200x600mm slabs with varying thickness, ensure the insulation doesn't come into contact with the original ceiling.
- Fireline plasterboard (15mm fireline plasterboard) - British Gypsum
- British Gypsum resilient bars
- Acoustic and fire sealant, this should be used on all holes and gaps
- Acoustic putty pads or back boxes to any sockets in noise sensitive areas
- Ensure all trades understand the importance of correct workmanship and they take care when laying each and every layer
- Ensure the correct length screws are used when fixing plasterboard to resilient bars, it is essential that they only fix into the bars and not through the bars into the joists or studs.
- Ensure the insulation is covering every inch of the ceiling or wall void assuring complete separation
- Ensure the leaves of the party walls do not touch one another
- Ensure flexible closers are fixed into cavities with perimeter walls.

It is essential that the separating elements are installed in the correct manner and at the correct time.

The following should apply:

1. Install all new separating walls first so that will create separation between the rooms both horizontally and vertically – when building a wall lining to the existing masonry it may be prudent to install the acoustic ceiling first then the wall lining to the underside of the acoustic ceiling.
2. Install the separating ceiling throughout the rooms
3. Install internal partitions to the underside of the ceiling
4. Install any wall linings to perimeter of building once the separating ceiling has been installed so complete separation can be achieved.
5. Ensure all steels are correctly encapsulated without the encasement contacting the steels at all

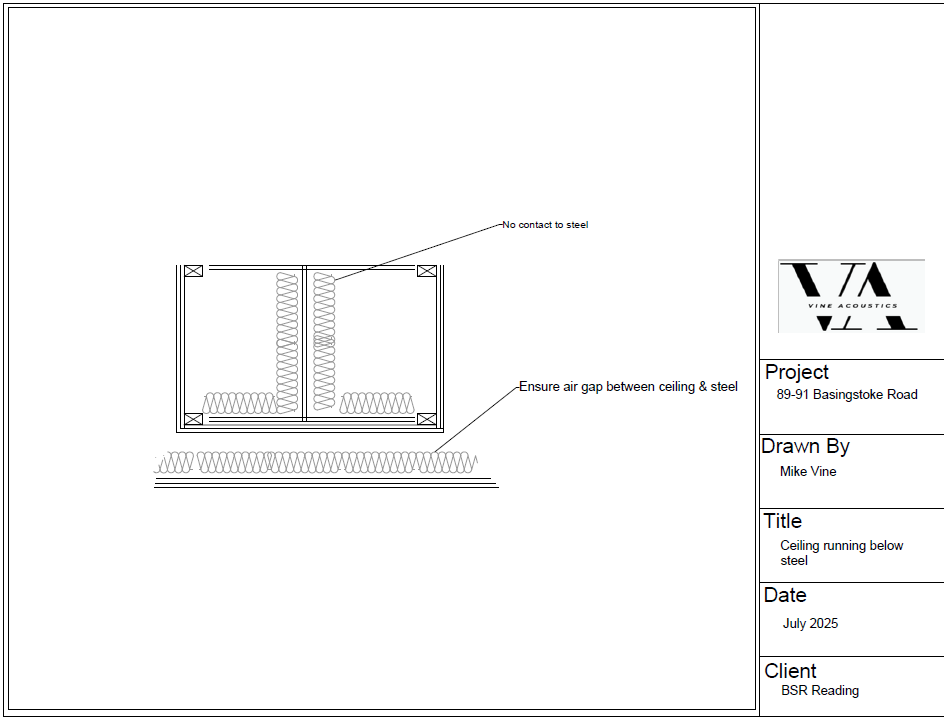
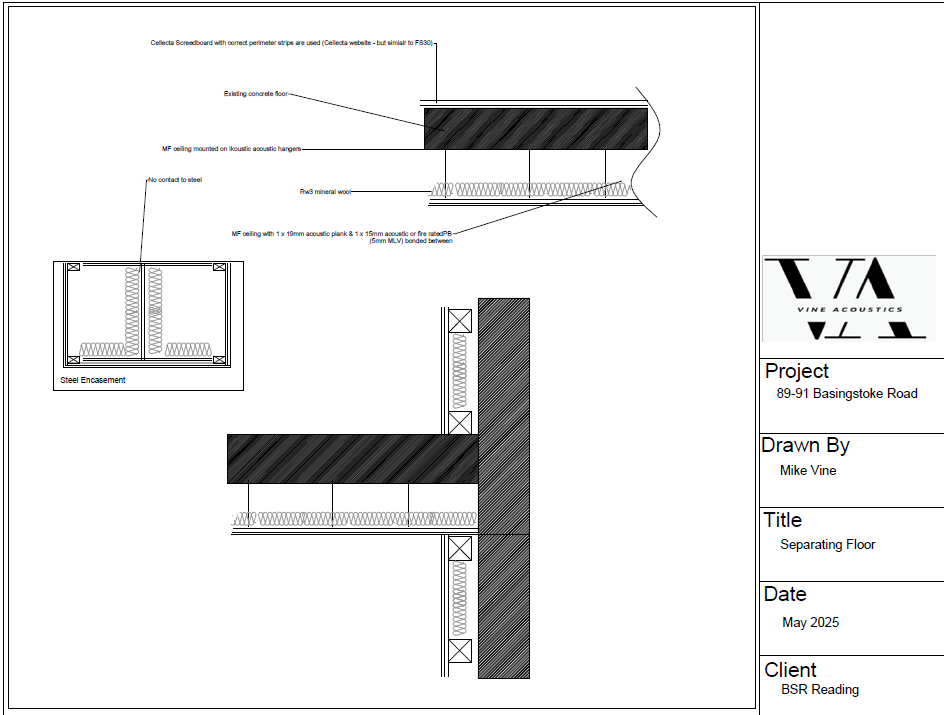
Conclusion:

The level and standard of workmanship when installing these elements is essential to achieving the highest possible level of sound attenuation and great care and attention should be made when installing these systems.

The recommended systems have been tested numerous times and achieve elevated levels of attenuation. However, it is essential that each and every possible sound transmission path is reviewed and treated. If there are any sockets on the dry lined walls, then it is recommended that 'putty pads' or similar is applied to the back of the socket or a dry lined box is created to ensure the noise does not travel through the void. Also, if possible, spotlights should be avoided in the ceilings of the ground floor as these ceilings form an integral part of the acoustic specification.

It is essential that wherever possible prominent levels of mass and isolation are applied to the systems, this may be difficult in some areas, but great care and attention must be adopted on site. The workmanship of each element is essential in getting the best results and all aspects must be inspected and the integrity maintained throughout the build process. Please note that the possibility of flanking transmission is extremely high if lightweight blocks are used and even if the correct ceiling systems are implemented, if the perimeter detail is not correct then this will lead to elevated levels of flanking transmission and possible failed tests. The same principle applies to the treating of floors as opposed to installing an acoustic ceiling as listed within this document.

This document & guidance design is based on experience of these systems and previous sites. Vine Acoustics do not accept any responsibility for any failed testing upon completion of works.



The above sketches show the possible implementation of the detail, and the detail below the encased steels at ground floor level. These should be encased first, then the independent ceiling installed below, then the perimeter treatment etc.

The Links to possible products is shown below:

<https://www.cellecta.co.uk/product/screedboard-30/>

<https://www.cellecta.co.uk/product/yelofon-fs15-30-50-profiled-flanking-strips/>

<https://www.cellecta.co.uk/product/deckfon-batten-45-70/>

<https://www.cellecta.co.uk/product/deckfon-batten-45-70/>

https://www.ikoustic.co.uk/products/isolation-clips/muteclip-mp/?gad_source=1&gad_campaignid=22559176262&gbraid=0AAAAADldXRSnU_GA_ecMxumTTKb1cpxgp&gclid=CjwKCAjw1ozEBhAdEiwAn9qbzRL5m54NN87IH9uQir-MrnjWy7OQLfOltJA0AIMzAMclfbTiSPU7SBoCcVoQAvD_BwE

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The above are links to the acoustic products mentioned in this document. Please note that (as previously advised) the level of 55dB $D_{nT,w} + C_{tr}$ is a high levels of improvements based on the current, measured level of attenuation and the majority of the building specification is already in situ, great care and attention must be made when installing these systems and each and every section must be installed correctly, both above and below the concrete structure. The perimeter details are recommended at both ground & 1st floors.