ADUR & WORTHING
PLANNING SERVICES
PLAN AWDM/ 1359/15
DATE VALID RECD 12 NOV 2015

Acoustic Associates

Stephen Bromley Esq.
Stephen Bromley Associates
5 West Street
Shoreham-by-Sea
BN43 5WF

1st April 2015

Site: 378 – 380 Brighton Road, Shoreham by Sea, BN43
Requirement: Specification of a separating floor construction to achieve DnTw + Ctr 50dB

Dear Stephen,

Please find below a specification of a sound resisting ceiling which can achieve airborne sound insulation results of DnTw + Ctr = 50dB.

Before the construction makeup is provided, it is important to note that there are many other factors which can affect the sound insulation result and thus negate the positive effects of the floor/ceiling itself. These factors are usually formed of flanking transmission paths, where sound travels via an alternative route between two areas.
In the case of a separating floor/ceiling, flanking paths are usually the perimeter walls, fire-places and windows. For example, a light-weight block perimeter wall would allow transmission of sound and vibration, resulting in a very limited performance regardless of the floor/ceiling make-up.

A short visit to site confirms that the perimeter walls of the ground floor are plastered brick and thus are considered not to be a problem in terms of flanking sound transmission.

The construction of the existing floor has been described as:

- 20mm T&G floorboards
- 225mmx50mm Joists (no mineral fibre between joists)
- Lath & Plaster Ceiling

The same visit to site did not reveal anything on the contrary to the above.

To upgrade this separating construction to be able to achieve DnTw + Ctr 50dB for airborne sound insulation, it is recommended that the treatment is carried out to the ceiling – there is ample ceiling height for a suspended MF Grid ceiling.

It is recommended that the use of a Suspended Metal Furring (MF) Grid system is installed to the underside of the existing ceiling, leaving the existing ceiling in-tact (made good if damaged). The Grid should create 200mm void and incorporate 150mm thickness of dense mineral fibre such as Rockwool Rw45 or British Gypsum Isover APR1200. Resilient Hangers should be used for attaching the MF Grid to the existing joists/ceiling. The new ceiling should incorporate 2x 15mm Soundbloc. Each plasterboard layer should be taped and sealed, staggering the joints of the two layers. Each layer should also be left short of the perimeter by 3 – 5mm and sealed with a non-hardening mastic.

Acoustic Associates Sussex Ltd., 8 Highdown House, Shoreham Airport, Shoreham-by-Sea, West Sussex BN43 5PB
Tel: (01273) 455074 Fax: (01273) 455075 e-mail: info@aasussex.co.uk **www.aasussex.co.uk**
Registered office: Acoustic Associates Sussex Ltd , 3 Ferry Road, Shoreham-by-Sea, West Sussex, BN43 5RA Company registered in England & Wales no. 5646519

100mm Mineral Fibre should also be placed between the joists. 6mm Hardboard should also be placed over the existing joists.
Recessed lighting should **not** be installed to the ceiling as this would significantly reduce the effectiveness of the separating construction. If recessed lighting is wished for, then an alternative design would need to be investigated.

The figure below shows separating construction described above. It also shows the use of wall linings to the perimeter walls if required:

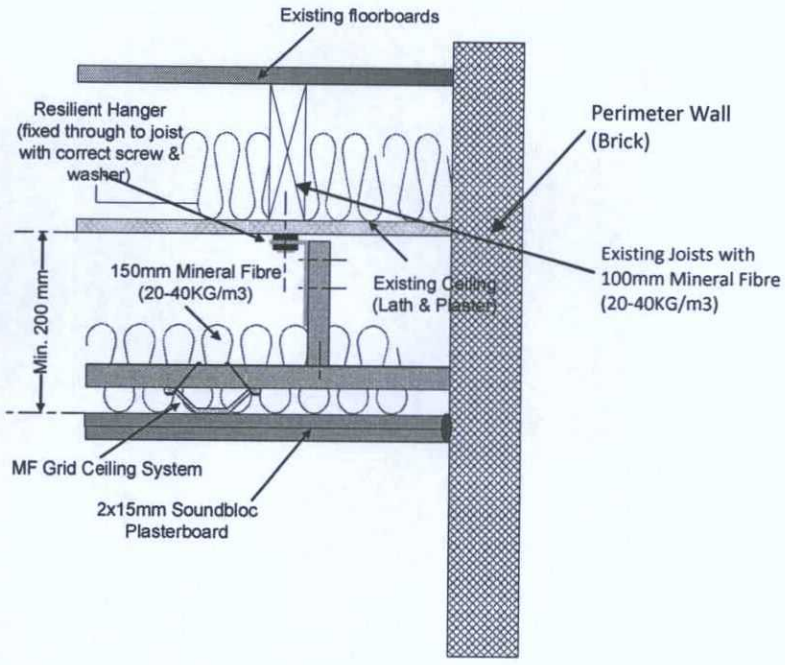

Figure 1: Separating Floor Make-Up

The use of 2x 15mm Soundbloc would achieve a 60 minute fire resistance (though this should be confirmed by a fire officer).

It is noted that currently on the ground floor, the windows are shop windows which run full height of the storey. Where the suspended ceiling meets the window, a pelmet should be formed to keep the acoustic separation in place.

This is shown in the figure below:

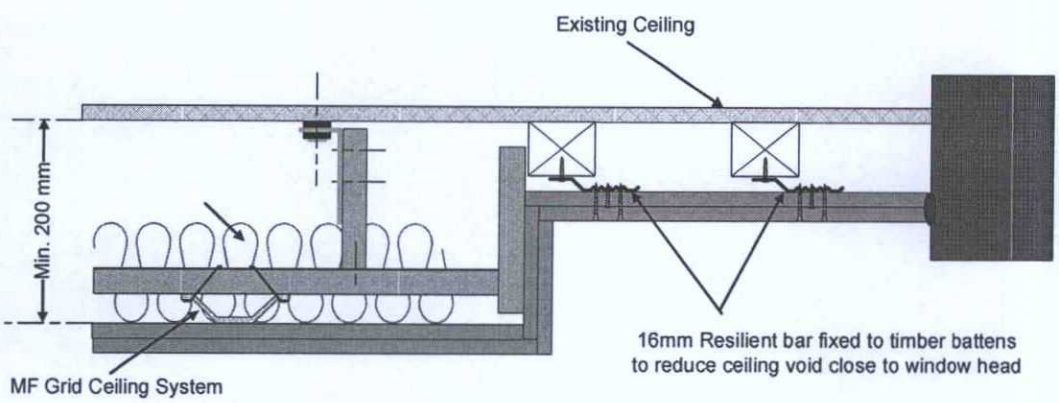

Figure 2: Pelmet Detail

If required, the pelmet can also be angled, by shaping the timber battens accordingly, to which the resilient bar should then be fit.

N.B. It is imperative that the correct length screws are used with resilient bar as any breach in this will severely undermine the performance of the floor.

A note on Wall linings

As mentioned earlier, a visit to site confirmed that perimeter walls were made from brick, finished with wet plaster and painted. It is considered that these brick walls do not present a problem in terms of flanking sound transmission and therefore that wall linings are not required. However, if it is found during construction phase that there are light-weight aircrete blocks, or brickwork with questionable quality in terms of their pointing, a wall lining is advised.

The wall lining should be formed from either an independent stud frame of at least 50mm depth and finished with 2 layers of 12.5mm Soundbloc plasterboard (joints staggered, taped and sealed). At least 25mm mineral fibre (with density of 20 – 48Kg/m^3) should be placed within the cavity / between the studs

Alternatively it should be formed from such a system as the Gyproc Gyplyner Universal system, with a 50mm depth and finished with 2 layers of 12.5mm Soundbloc plasterboard. The cavity should also incorporate at least 25mm mineral fibre (with density of 20 – 48Kg/m^3).

Wall linings should be installed AFTER separating the floor/ceiling construction has been installed.

Please note that all details in these specifications are with regard to acoustics only and should be checked by a structural engineer and fire officer with relation to your property.

Please also see attached to this report the calculated results of the construction, based upon the acoustic insulation software "Insul". This gives a guide as to the effectiveness of the specified floor/ceiling construction and the results to be expected if constructed correctly.

I trust the information detailed above is clear and acceptable.

Kind Regards,

[redacted]

Simon Barrett