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By email to: daniel.woolfson@wmgstudio.co.uk

Dear Daniel,

12512: THE BULL & LAST 168 HIGHGATE ROAD, LONDON

Further to our visit at the above site, we are pleased to present you with a summary of our discussions and a list of recommendations for the acoustic treatment of the party elements.

1.0 Internal Building Fabric

A design that would meet the targets of Approved Document E 2003 has been determined as the main client requirement. The following sections describe our proposals to modify the existing construction in order to meet the minimum standard set out in the current Building Regulations.

The main parameter used throughout this document to express airborne sound insulation of separating constructions is $D_{nT,w} + C_{tr}$. All specifications in this report will therefore be given with respect to this descriptor.

1.1 Design Criteria

In order to satisfy the requirements of ADE 2003 of the 2000 Building Regulations, the minimum sound insulation performance criteria, as shown in Table 1.1, should be met by all floor constructions (i.e. separating elements between different residential dwellings). For this development, the higher requirement for new build applies.

Element	Design Criteria	
	Airborne	Impact
Floor	$D_{nT,w} + C_{tr} \geq 45$ dB for new build $D_{nT,w} + C_{tr} \geq 43$ dB for conversions	$L'_{nT,w} \leq 62$ dB for new build $L'_{nT,w} \leq 64$ dB conversions
Wall	$D_{nT,w} + C_{tr} \geq 45$ dB for new build $D_{nT,w} + C_{tr} \geq 43$ dB for conversions	–

Table 1.1 ADE design criteria for party elements

1.2 Party Floor Systems

It is understood that the proposed floor system is comprised of a 300mm floor slab. In order for the floor system to achieve the sound insulation requirements of Approved Document E (2003 Edition) of the current Building Regulations, it is recommended that the following acoustic treatments are applied:

- Final walking surface (adhesive installation)
- Regupol 4515 (4.5mm) adhesively installed on the concrete slab
- Approx. 200mm concrete slab
- 2 x 15mm SoundBloc as the main ceiling system on MF type grid, fixed to the underside of the concrete slab under GAH1 resilient hangers. The void depth is to be determined by the floor-to-ceiling height restrictions of the project.

The following should also be noted:

- Ensure floor slab density is minimum 2400kg/m³
- All voids between walls and floor to be filled
- Floating floor treatment to be installed in accordance with manufacturer's instructions
- Flanking strips should be installed around the perimeter of the flooring board to isolate floor the floor from walls and skirtings
- Ensure a ceiling void of minimum 75mm, and ceiling treatment is installed in accordance with manufacturer's instructions
- Make sure that only solid blocks (i.e. not hollow) are used to construct external (flanking) walls
- Should recessed lights be used, we would recommend the installation of not more than 1 unit per 2m², as a practical measure not to compromise the overall performance of the floor.

1.3 Party Wall (to be retained)

It is understood that the current proposals for the upgrade of the party wall on site would consist of the implementation of a resilient bar system.

It would be recommended that in order to improve the performance of the party wall further, while still maintaining the spatial advantage provided by a resilient bar system over an independent stud layer, that the wall is upgraded by use of isolating clips.

In order to best implement this, 2 layers of 15mm Fermacell should be installed on CMS IsoMax isolating clips (or similar). These should be installed at 600mm centres, with both the top and bottom rows of clips 75mm from the ceiling and floor, respectively.

2.0 General Advice

Special attention should be given to workmanship regarding the proper sealing of junctions and penetration details. Where any gaps between external (flanking) walls and floors exist, they should be caulked with sealant or similar type material. It should be also noted that flanking strips (Yelofon ES5/100) should be installed around the perimeter of the floor to isolate the floor from walls and skirtings. The strip should be turned up so that the skirting boards rest on them and any excess cut away.

Ideally, a gap between the head of the wall and the underside of the soffit should not be greater than 10mm. A polyethylene backing rod could be inserted in the gap with tightly packed mineral wool while silicone caulk is used to seal the joint.

In the case of the party walls, isolation strips would need to be used, which would isolate the wall leaves from the sub-floor, therefore minimising any flanking paths. Please note that a material such as Monarfloor or Regupol Isolation Strip can be used to isolate any new walls built on any steel structure. Vertical strips of Regupol 3912 (6mm) should be used at the abutment of the main party wall with the flanking walls, finished with intumescent, silicone-based mastic.

In the case of new I-beams, care should be taken to block any transmission paths from the I-beam flanges to adjacent structures. For this reason, Corofil C144 or a similar material could be used to seal any paths through the gaps between the beams and the rest of the structure. Encasing the I-beams with dense plasterboard would also be recommended in order to control flanking paths. Regupol resilient collars should be employed to minimise bridging between steel elements, with strips of Regupol 6010XHT cut to fit between the I-beams' flanges.

3.0 Other Comments

3.1 Control of External Noise Break-in

It is essential that all exterior opening glazing (doors and windows) should form an airtight seal with its frame when shut. Neoprene seals are to be specified, rather than brush seals. The frames are to be constructed to ensure there are no holes. It is equally important to ensure that the frame seals tightly into the surrounding opening. The opening should be accurately made to receive the window and the perimeter gap packed with an acoustically absorbent material, before the application of a continuous mastic seal on both sides.

4.0 General

The sound insulation performance predictions and advice provided in this document are based on the assumption that there will be no major mistakes in workmanship regarding the acoustic detailing and finishing of the party elements proposed in this development.

Kenny Macleod AMIOA

KP Acoustics