

26 February 2025

Ref: 20764.250130.LT2RevC

Curo Construction

20764: THE CHARTER, GRAVESEND – SOUND INSULATION

We write in response to the planning condition requiring the submission of a sound insulation assessment for the above project. We understand the condition states:

“Prior to the first occupation of the apartments, a sound insulation assessment shall be carried out, submitted to and approved in writing by the Local Planning Authority.

The Assessment shall include details of the assessment methodology and of the substantially enhanced sound insulation performance of the construction that separates the residential and multi-storey car park which shall resist the transmission of airborne sound such that the weighted standardised difference ($D_{nT, w} + C_{tr}$) is not less than 53 decibels (i.e. an enhancement of the minimum levels stated in the Building Regulations of 10dB).

Any works identified as being required in order to achieve a weighted standardised difference of not less than 53 decibels as required above shall be implemented and evidence provided (if necessary, by way of a further sound insulation assessment report) for approval by the Local Authority prior to first occupation.”

KP Acoustics has undertaken an acoustic design review “20764.ADR.01” of the proposed constructions dated 05 May 2020.

The assessment has been carried out following desktop predictions, which provides a standardised approach to evaluating airborne sound insulation in buildings. Predictions have been made using established modelling techniques and reference data for the proposed constructions.

Apartment Sound Insulation Assessment

With reference to our above mentioned report, the table below summarises the enhanced sound insulation targeted between residential apartments:

<i>Element</i>	<i>Airborne Sound Insulation Performance</i>	<i>Impact Sound Insulation Performance</i>
<i>Separating walls</i>	$D_{nT,w} + C_{tr} \geq 48\text{dB}$	-
<i>Separating Floors</i>	$D_{nT,w} + C_{tr} \geq 50\text{dB}$	$L'_{nTw} \leq 56\text{dB}$

Table 3.1 Internal Sound Insulation – Apartments

The assessment of the proposed party wall construction from our report is reproduced below. It is understood equivalent Knauf and Sinat products have been used in the final constructions which are acoustically equivalent:

“Party Walls between Apartments

Current proposals entail the following elements:

- *2x15mm SoundBloc boards*
- *Double frame comprising 60mm I-studs at 600mm centres*
- *190mm void with 100mm mineral wool insulation (APR1200, or similar)*
- *2x15mm SoundBloc boards*

The above system has been modelled with proprietary simulation software (Insul™) and the results have revealed a performance of 51dB, $D_{nT,w} + C_{tr}$, therefore comfortably providing the design target for airborne sound insulation shown in Table 3.1 without any further changes. We would highly recommend that all party walls be built slab-to-slab, i.e. they should be ‘embedded’ within the proposed screed system, and reach the underside of the soffit above.”

Party Floors

The proposed party floor system between apartments is currently comprising the following build-up:

- 20mm Finish Zone:
 - Vinyl/Carpet
 - Regupol 4515 Eco 3mm
 - Latex screed to slab
- Structural concrete slab (thickness varies typical 225mm)
- Plasterboard Ceiling:
 - 1x 12.5mm GTEC dB BOARD on concealed ceiling grid.

The above build-up would provide airborne and impact sound insulation values which would fully satisfy the design targets of Table 3.1

We understand the recommendations were incorporated into the construction.

Multi Storey Car Park to Residential Car Park

The separating structure between the multi-storey car park and the residential areas will consist of the following construction:

- 103mm Brick;
- 40mm cavity containing Ancon Wall Tie;
- 110mm Rockwool Rainscreen Duo Slab with breather membrane;
- 12mm Sheathing Board;
- 100mm SFS Frame with 100mm Rockwool Insulation;
- 1x15mm SoundBloc and 1x15mm Fireline with vapour barrier.

The above system has been modelled with proprietary simulation software (Insul™) and the results have revealed a performance of $D_{nT, W} + C_{tr} \geq 53\text{dB}$.

The wall as noted above, should provide the necessary sound insulation to separate the residential units from the multi-storey car park.

We trust that the above assessments address the specific requirements of the planning condition and provide the necessary clarity and assurances.

Should further clarification or additional details be required, please do not hesitate to contact us.

Yours sincerely,

KP Acoustics Ltd