

5 August 2025

Ref: 20764.250805.LT3

Curo Construction

20764: THE CHARTER, GRAVESEND – SOUND INSULATION**1.0 INTRODUCTION**

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.”

The sound insulation tests detailed in this report were undertaken by Owen Hughes on 30th of July in general accordance with BS EN ISO 140-4: 1998 ‘Field measurements of airborne sound insulation between rooms’ and the procedures described in Annex B of the Approved Document.

Please note $D_{nT, W} + C_{tr}$ is only typically applicable between two internal (warm) spaces (e.g. flat to flat) and is not a typical industry standard parameter between a car park and flats. However, the test has been conducted following the standard as if it were two internal spaces to determine compliance.

2.0 METHODOLOGY

High volume ‘pink’ noise was generated from one loudspeaker in the carpark, positioned to obtain a diffuse sound field. A spatial average of the resulting one-third octave band noise levels between 100

Hz and 3150 Hz was obtained by using a moving microphone technique over a minimum period of 30 seconds. The same measurement procedure was used in the receiver room. The procedure was then repeated for a second loudspeaker position within the car park.

The results of the tests were rated in accordance with BS EN ISO 717-1: 1997 '*Rating of sound insulation in buildings and of building elements. Part 1 Airborne sound insulation*'.

The source was moved to the receiver room and 'pink' noise was generated and stopped instantaneously in order to measure the reverberation time in each of the one-third octave bands between 100 Hz and 3150 Hz. The internal programme of the meter was used to measure the decay time of the sound in the room. This was repeated six times in each room in order to obtain an average result.

The background noise levels in the receiver rooms were measured during the tests and the receiving room levels corrected in accordance with BS EN ISO 140 Part 4. The dominant source of background noise observed during the tests was some existing construction noise from the wider site and road traffic from the surrounding roads.

3.0 EQUIPMENT

The instrumentation used during testing is shown in Table 3.1 below.

INSTRUMENT	MANUFACTURER AND TYPE	SERIAL NUMBER
SLM5 Precision integrating sound level meter & analyser	NTi Audio, XL2-TA Calibration No: UCRT24/1289, 1290 &1291 Calibration Dates: 21/02/2024 Calibration Due: 20/02/2026	A2A-17287-E0
LS9 Active Loudspeaker	RCF ART 310A	VCCQ00252
GEN 5 Pink Noise Source	NTi Audio Minirator MR-PRO	G2L-RACDG-G0
CAL1 Calibrator 1	Larson Davis CAL200 Calibration No: UCRT24/2677 Calibration Date: 17/12/2024 Calibration Due: 16/12/2025	17148
LM12 Laser Meter	DTAPE DT50	2022103024265

Table 3.1 Instrumentation used during testing

4.0 RESULTS

The results of testing are summarised in the tables below. For airborne tests, the higher the value, the better the performance. The summarised results of the airborne tests are shown in Table 4.1.

Source	Receiver	CRITERION (dB $D_{nT,w} + C_{tr}$)	TEST RESULT (dB $D_{nT,w} + C_{tr}$)	Pass/ Fail
Car Park	Apartments	$D_{nT,w} + C_{tr} \geq 53\text{dB}$	$D_{nT,w} + C_{tr} \geq 55\text{dB}$	Pass

Table 4.1 Airborne test results

We due to the high performance of the construction, the performance measured performance is expected to be greater then the result shown.

5.0 CONCLUSION

Airborne sound insulation tests were undertaken and results presented in accordance with the measurement and rating procedures defined in BS EN ISO 140 Part 4:1998 and BS EN ISO 717 Part 1:1997, respectively.

The test results show the construction provides the requested level of sound insulation to separate the residential units from the multi-storey car park.

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

Yours sincerely,

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