APPROVED DOCUMENT E SOUND INSULATION TESTS
LINDLEY BAND 14A HOLLY BANK ROAD HUDDERSFIELD ACOUSTIC CONSULTANCY REPORT 438

OBJECTIVE

Lindley Band meet in the band room to practice and play musical instruments at 14B Holly Bank Road. The band room is at the rear of 14 Holly Bank Road. The two parts of the building share the same partition wall on the ground and first floor. The Band play on the ground floor of 14B Holly Bank Road. The first floor of the Lindley band building at 14B Holly Bank road is used as a library and storage space. No music is played on the first floor of the band building.

Music from the band room can transmit through the partition wall into the proposed ground and first floor residential apartments at 14 Holly Bank Road.

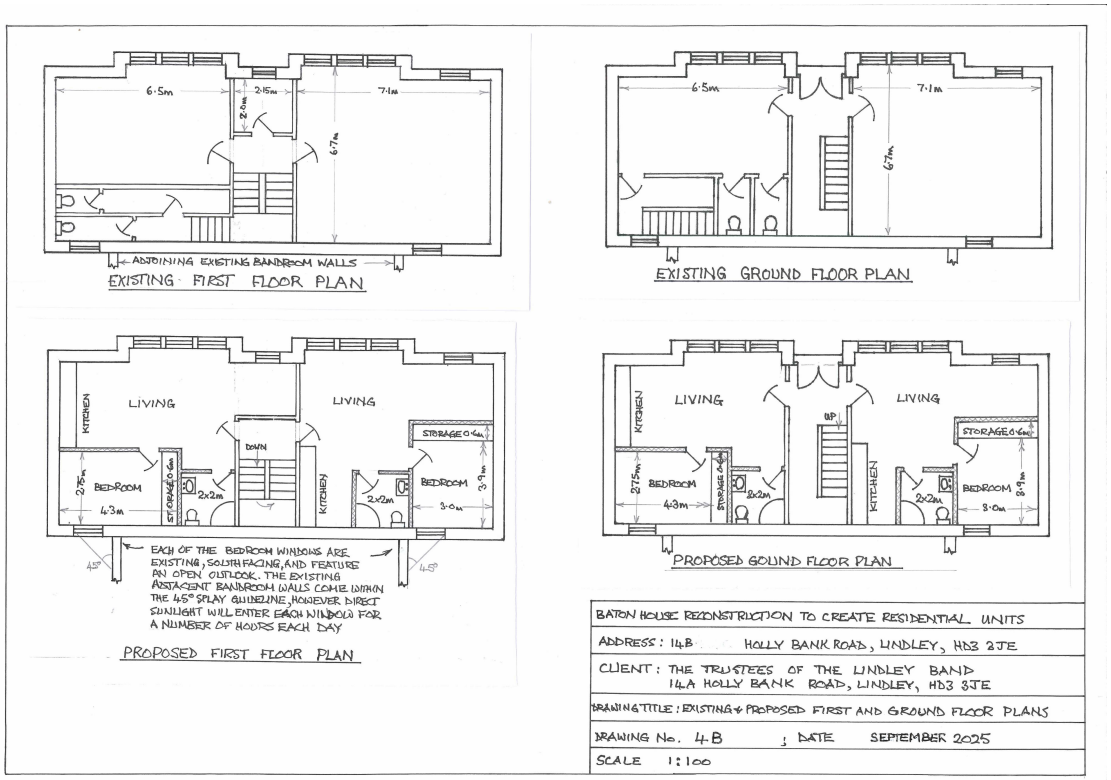
The purpose of this report is to assess the current level of sound insulation between the band room and the proposed apartments and to determine the additional insulation required to reduce the band noise transmission into the proposed new apartments.

Test Procedure

1.1 Purpose of Tests

To undertake sound insulation measurements to determine the DnT(Ctr) between the ground floor and first partition of 14 Holly Bank Road, located aat the front next to the road and 14B Holly Bank Road located at the rear.

Noise Survey Limited 3 Sude Hill New Mill Holmfirth HD9 7BL
www.noisesurveyltd.co.uk Tel: 0800 772 0431



Picture 1: Proposed apartments

1.2 Test Particulars

An airborne sound insulation measurement was undertaken between the ground floor the band room at 14B Holly Bank Road, Lindley and the ground and first floor rooms at 14 Holly Bank Road, Lindley. Both properties share a wall to the ground floor and the first floor. 14B Holly Bank Road is narrower than 14 Holly Bank Road. This means that the shared partition between the two buildings is not the full width of 14 Holly Bank Road.

The schedule of testing is shown in Table 1.

At the time of the measurements non habitable rooms such as bathrooms between the source and receiver rooms increased the sound insulation between the source and receiver rooms. Measurements were conducted in the area that is proposed as a habitable room.

The measurements were taken on behalf of the trustees of The Lindley Band by Donald Angir MIoA BA(Hons) Dip(IoA), Noise Consultant, of Noise Survey Limited on the 11th October 2025.

1.3 Instrumentation

The sound insulation test was conducted using the following instrumentation;

- Cesva SC310 Class 1 Sound Level Meter
- Casella Sound Level Meter Calibrator
- 1 amplified loud speaker.
- A noise generator (Pink Noise)

The meter was calibrated prior to the tests and the calibration checked on completion and no significant change occurred.

1.4 Test Method (Airborne Sound Insulation)

Airborne sound insulation tests were undertaken in accordance with the requirements of BS EN ISO 140-4: 1998 and the guidance in Annex B to Approved Document E.

All measurements were in 1/3rd octaves.

1.5 Reverberation Time

Reverberation times in the receiver room were recorded using a single loudspeaker position, 3 measurement positions and 2 readings at each position in accordance with ISO 354:2003, all arithmetically averaged to derive third octave band T60 for the receiver room.

1.6 Reverberation Measurement

Reverberation measurements were taken at each one of 3 sound level meter positions using broadband pink noise. A total of 6 measurements were taken and logarithmically averaged to produce a single set of 1/3rd octave $L_{eq,T}$ readings.

1.7 Noise in the Source and Receiving Room

Five positions were used in each room. Readings were taken at each of the 5 positions in the receiving and source room. The measured levels were then logarithmically averaged to obtain third octave band $L_{eq,T}$ levels for each room.

The noise level measurements from the receiver room were corrected using the receiver room reverberation time measurements to determine the standardised level difference $D_{,nT}$ and compared with the reference curves to provide a $D_{nT,w}$ as stipulated in Annex B of Approved Document E and weighted in accordance with ISO 717-1:1997. A C_{tr} correction was applied to the sound spectrum in compliance with the approved documents.

1.8 Schedule of Tests

Details of the test and the relevant requirements of Approved Document E are provided in the attached table T1.

2.0 AIRBORNE MEASUREMENT RESULTS

Source	Volume m^3	Receiving Room	Volume m^3	Structure	Test Date	Ref	$D_{nt,w} + C_{tr}$ (dB) Achieved	$D_{nt,w} + C_{tr}$ (dB) Required	Pass / Fail
Ground floor Band Room 14B Holly Bank Rd	238	Proposed Bedroom of Ground floor Flat left of 14 Holly Bank Rd	161	Wall	11th tOctober 2025	438 B	55	≥ 60	**Fail**
Ground floor Band Room 14B Holly Bank Rd	238	Proposed Bedroom of Ground floor Flat right of 14 Holly Bank Rd. Has stairs to basement	161	Wall	11th tOctober 2025	438 C	64	≥ 60	**Pass**
Ground floor Band Room 14B Holly Bank	238	Proposed Bedroom of First floor Flat left of 14	161	wall	11th tOctober 2025	438 E	60	≥ 60	**Pass**

Rd		Holly Bank Rd							
Ground floor Band Room 14B Holly Bank Rd	238	Proposed Bedroom of First floor Flat right of 14 Holly Bank Rd	92	Wall	11th October 2025	438 F	61	≥ 60	**Pass**

Table T1.

2.1 Third Octave Band Results

Third octave band results for each test are provided in the attached graphs

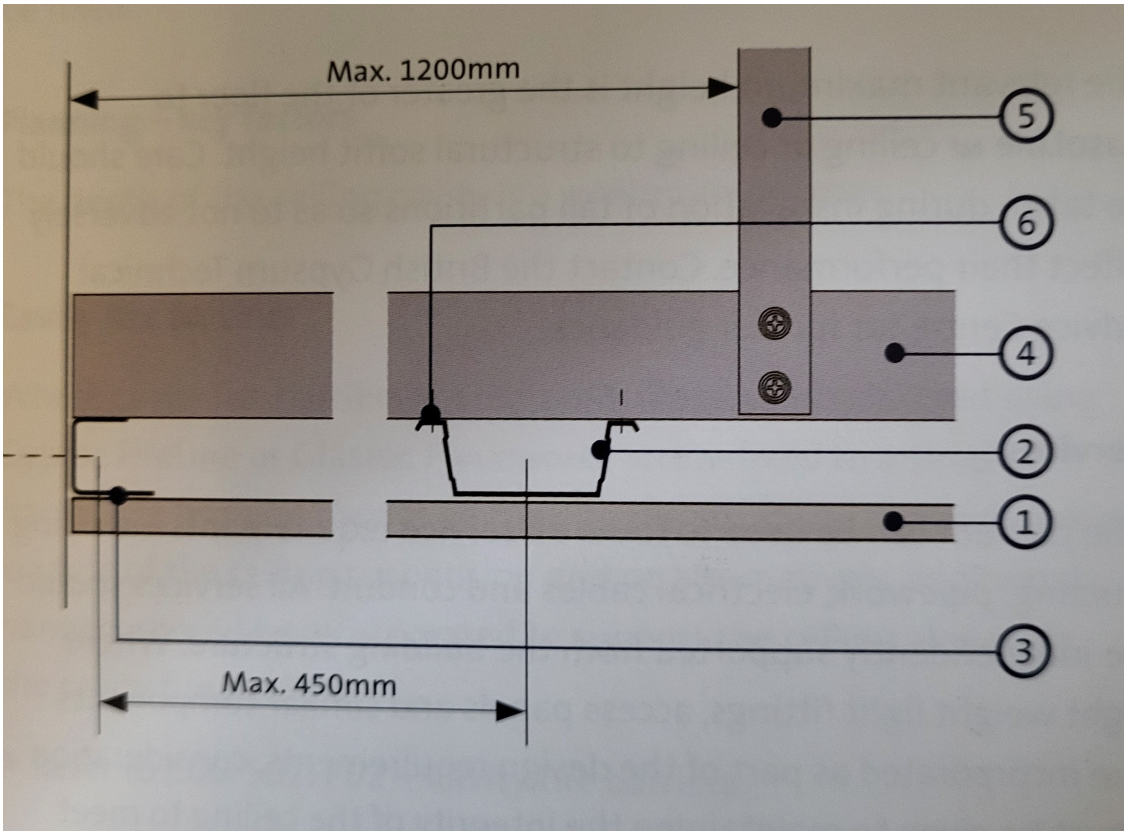
Acoustic Stud Wall and Suspended Ceiling Construction Detail

A British Gypsum Casoline MF suspended ceiling to the ground floor band room at 14B Holly Bank Road.

Picture 2: British Gypsum Casoline MF suspended ceiling

A three sided cavity wall should be added to the Lindley band room. This should be constructed along the partition wall and the two walls either side of the partition wall. The wall opposite and furthest from the partition wall need not be treated.

The cavity should be a minimum of 100mm and be left empty with no contact with the existing partition wall.



Picture 3: Screw fixed suspended system onto wooden joists. The design shows the distances between fixings that must be observed.

1. X2 Gyproc soundbloc plasterboard
2. Gypframe MFS ceiling section
3. Gypframe MF6 Perimeter Channel
4. Gypframe MF7 Primary support Channel
5. Gypframe MF8 Strap Hanger
6. British Gypsum Wafer Head Jack Point Screw

Finish the ceiling with plaster skim and paint.

A cavity stud wall, extending to the all walls in the band room except the wall opposite to the partition wall, with a double layer of Gyproc sound bloc 12.5mm plaster board. The cavity should be of a minimum of 100mm from the existing wall. All gaps in the plasterboard must be sealed. The stud wall should not be dot and dabbed but made of

Noise Survey Limited 3 Sude Hill New Mill Holmfirth HD9 7BL
www.noisesurveyltd.co.uk Tel: 0800 772 0431

Steel C studs with 100mm cavity, such as Gypframe C stud, to frame and support the plasterboard. The cavity should be left empty with no contact with the original partition wall. The frame is to be sealed with sealant around the perimeter of the frame prior to the fixing of the plaster board.

Stud wall 1: Gypframe C studs with minimum 100mm cavity. No contact with existing partition wall. The frame attaches to the floor and ceiling. The stud wall should be on three walls closest to the partition wall.

The cavity wall should be on 3 out of the four walls in the band room. The wall to be excluded is the wall furthest from the partition wall only.

Important: The perimeter of the stud wall should be sealed on both sides with a permanent seal such as Gyproc sealant. This will reduce the passage of sound along the perimeter edge around the frame.

Stud Wall 2: Seal the perimeter of the stud frame with Gyproc sealant. In this picture the frame is wood but yours will be metal. The picture shows that you are required to seal around the perimeter of the frame on both sides.

Stud Wall 3: Apply a double layer of Gyproc 12.5mm plaster board to one side of the steel stud frame.

Finish the wall by plastering and painting ensuring that there are no holes or gaps and the cavity is empty. Ensure the 100mm cavity is not breached by the stud or plaster board or anything.

The combination of the cavity wall and suspended ceiling will provide an additional 5 – 10dB of sound insulation. The exact number will depend on the frequency of the noise being generated.

Band Practice Noise Level

Noise measurements in the band room during a practice session reached; LAeq(15min) 93dB. This level is not fixed and the band may at times play at a higher or lower volume. The band music is clearly audible in the proposed apartments and first floor hall way of 14 Holly Bank Road. The band music stands out, more clearly, during periods of low background noise from Holly Bank Road.

The current sound insulation predicts an internal level of LAeq(15min) 29 – 38dB in the proposed flats when the band is playing.

The noise transmission cannot be eliminated completely but can be reduced by the additional cavity wall and suspended ceiling arrangement recommended in this report.

Band practice times should be limited to day time hours only between the hours 8AM – 10PM. Band music during the night time is likely to have a higher adverse impact when people are resting and when there is typically a lower back ground noise environment.

3.0 Conclusion

Applying the additional three side cavity walls and suspended ceiling to the band room at 14B Holly Bank Road will reduce the noise in the proposed flats to LAeq(15min) 28 – 33dB during the day time.

Autrhorised
Donald I Angir
Donald Angir MIOA Dip(IoA) BA(Hons)
Noise Consultant
Noise Survey Limited
Date: 23rd October 2025

Equipment:

- Casella Cel-110/1 Class 1 Acoustic calibrator calibrated 17th March 2025 by Campbell Associates cert no. U50388 meter serial 138252
- Cesva SC310 Type 1 sound level meter serial T237608 UKAS calibrated Cert U42983/U42984 in January 2023 by Campbell Associated Limited
- Noise Source (speaker)
- Pink Noise signal generator

Standardized level difference according to Resistance to the passage of sound approved document E
Field measurements of airborne sound insulation between rooms

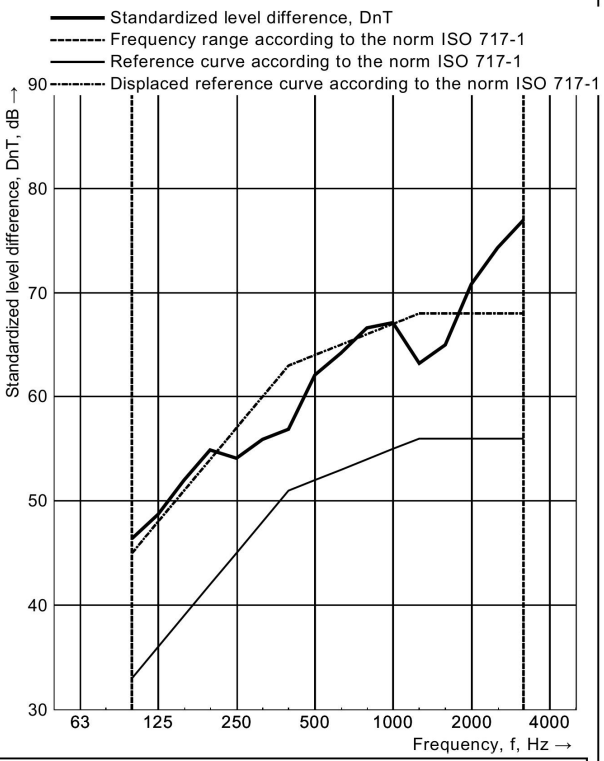
Client : Lindley Band

Test date : 22 October 2025

Description and identification of the building construction and test arrangement, direction of measurement :
Sound insulation measurement between source room known as the band room at 14B Holly Bank Road and the proposed first floor apartment E located to the left of the entrance and forming part of the building known as 14 Holly Bank Road. The partition consists of stone and plaster board. Part of the receiver room partition is wider than the band room boundary. There was a partial partition of the receiver room during the measurements.

Source room volume : 238.00 m³
Receiving room volume : 161.00 m³

Frequency f Hz	DnT (1/3 octave) dB
50	--
63	--
80	--
100	46.4
125	48.7
160	52.0
200	54.9
250	54.1
315	55.9
400	56.9
500	62.1 *
630	64.2 *
800	66.6 *
1000	67.1 *
1250	63.2 *
1600	65.0 *
2000	70.8 *
2500	74.3 *
3150	77.0 *
4000	--
5000	--



* Maximum background noise correction

Rating according to ISO 717-1

DnT,w(C;Ctr)= 64 (-1 ; -4) dB;

Evaluation based on in situ measurement results obtained by an engineering method (1/3 octave)

No. of test report : 438E

Name of test institute : Noise Survey Limited

Date : 22 October 2025

Signature :

Standardized level difference according to Resistance to the passage of sound approved document E
Field measurements of airborne sound insulation between rooms

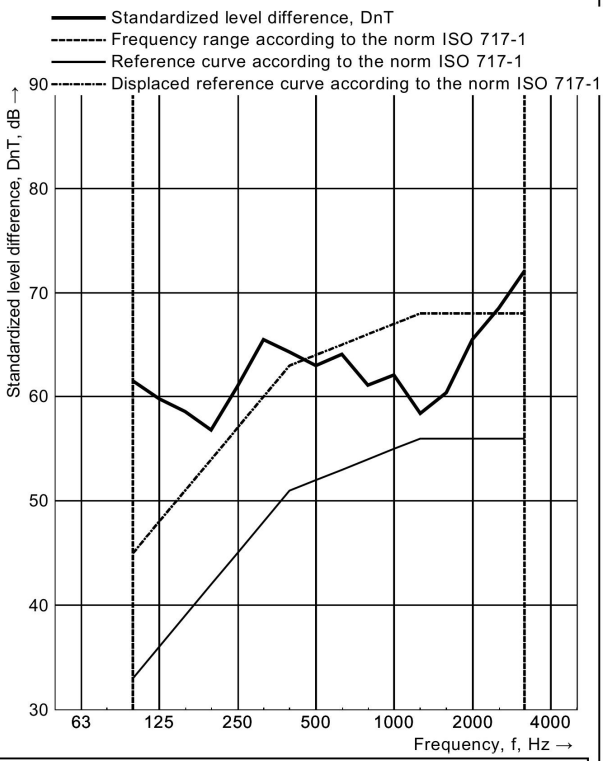
Client : Lindley Band

Test date : 23 October 2025

Description and identification of the building construction and test arrangement, direction of measurement :
Sound insulation measurement between source room known as the band room at 14B Holly Bank Road and the proposed first floor apartment F located to the right of the entrance and forming part of the building known as 14 Holly Bank Road. The partition consists of stone and plaster board. Part of the receiver room partition is wider than the band room boundary. There was a partial partition of the receiver room during the measurements. There is also a bathroom between the source noise and the receiving room.

Source room volume : 238.00 m³
Receiving room volume : 91.00 m³

Frequency f Hz	DnT (1/3 octave) dB
50	--
63	--
80	--
100	61.5
125	59.8 *
160	58.6 *
200	56.8 *
250	61.0 *
315	65.5 *
400	64.3 *
500	63.0 *
630	64.1 *
800	61.1 *
1000	62.1 *
1250	58.4 *
1600	60.4 *
2000	65.5 *
2500	68.5 *
3150	72.1 *
4000	--
5000	--



* Maximum background noise correction

Rating according to ISO 717-1

DnT,w(C;Ctr)= 64 (-2 ; -3) dB;

Evaluation based on in situ measurement results obtained by an engineering method (1/3 octave)

No. of test report : 438F

Name of test institute : Noise Survey Limited

Date : 23 October 2025

Signature :

Standardized level difference according to Resistance to the passage of sound approved document E
Field measurements of airborne sound insulation between rooms

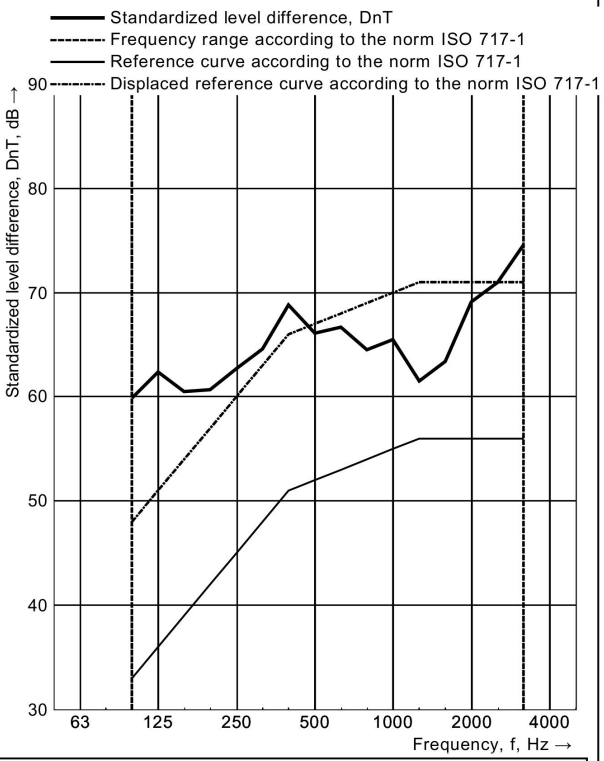
Client : Lindley Band

Test date : 22 October 2025

Description and identification of the building construction and test arrangement, direction of measurement :
Sound insulation measurement between source room known as the band room at 14B Holly Bank Road and the proposed Ground floor apartment C located to the right of the entrance and forming part of the building known as 14 Holly Bank Road. The partition consists of stone and plaster board. Part of the receiver room partition is wider than the band room boundary. There was a partial partition of the receiver room during the measurements.

Source room volume : 238.00 m³
Receiving room volume : 137.00 m³

Frequency f Hz	DnT (1/3 octave) dB
50	--
63	--
80	--
100	59.9 *
125	62.4 *
160	60.5 *
200	60.7 *
250	62.7 *
315	64.6 *
400	68.8 *
500	66.1 *
630	66.7 *
800	64.5 *
1000	65.5 *
1250	61.5 *
1600	63.4 *
2000	69.1 *
2500	71.0 *
3150	74.6 *
4000	--
5000	--



* Maximum background noise correction

Rating according to ISO 717-1

DnT,w(C;Ctr)= 67 (-2 ; -3) dB;

Evaluation based on in situ measurement results obtained by an engineering method (1/3 octave)

No. of test report : 347C

Name of test institute : Noise Survey Limited

Date : 22 October 2025

Signature :

Standardized level difference according to Resistance to the passage of sound approved document E
Field measurements of airborne sound insulation between rooms

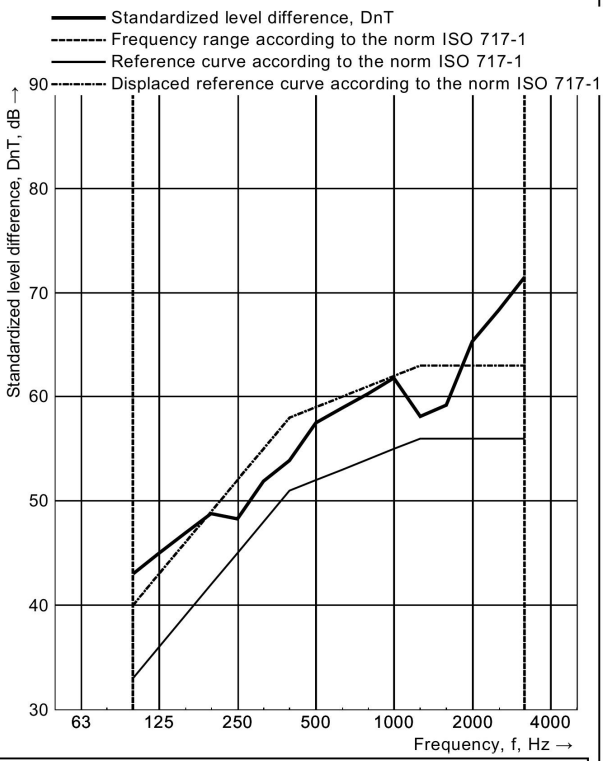
Client : Lindley Band

Test date : 23 October 2025

Description and identification of the building construction and test arrangement, direction of measurement :
Sound insulation measurement between source room known as the band room at 14B Holly Bank Road and the proposed Ground floor apartment B located to the left of the entrance and forming part of the building known as 14 Holly Bank Road. The partition consists of stone and plaster board. Part of the receiver room partition is wider than the band room boundary. There was a partial partition of the receiver room during the measurements.

Source room volume : 238.00 m³
Receiving room volume : 161.00 m³

Frequency f Hz	DnT (1/3 octave) dB
50	--
63	--
80	--
100	43.0
125	45.0
160	46.9
200	48.8
250	48.3
315	51.9
400	53.9
500	57.5 *
630	58.9 *
800	60.3 *
1000	61.8 *
1250	58.1 *
1600	59.2 *
2000	65.3 *
2500	68.3 *
3150	71.5 *
4000	--
5000	--



* Maximum background noise correction

Rating according to ISO 717-1

DnT,w(C;Ctr)= 59 (-1 ; -4) dB;

Evaluation based on in situ measurement results obtained by an engineering method (1/3 octave)

No. of test report : 438B

Name of test institute : Noise Survey Limited

Date : 23 October 2025

Signature :