



AIRTIGHT & NOISECHECK LIMITED

The Old Laundry, Bridge Street, Southwick, Hampshire, PO17 6DZ

[REDACTED]

ACOUSTIC TESTING REPORT FOR

CARLY BARNES
2 WEST FRONT ROAD
PAGHAM
BOGNOR REGIS
WEST SUSSEX
PO21 4SY

SITE ADDRESS

2 WEST FRONT ROAD
PAGHAM
BOGNOR REGIS
WEST SUSSEX
PO21 4SY

REPORT DATE: 12TH NOVEMBER 2021

Acoustic Engineer:



Date: 10th – 11th November 2021

Michael Vine



AIRTIGHT & NOISECHECK BUILDING ACOUSTIC TESTING

Contents

Customer Name.....	3
Site Address.....	3
Equipment Used.....	3
Measurement Procedure.....	3
Conditions.....	4
Executive Summary.....	5
Assessment Criteria.....	6
Objective.....	7
Calibration.....	7
Site Layout & Microphone Locations.....	7
Weather Conditions.....	7
Results Table.....	8
Results Conclusion.....	8
Building specifications.....	8
Results Summary.....	9
Appendix.....	10
Google Earth.....	11
Raw Data.....	12



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Customer Name:

Test Date: 10th – 11th November 2021

Carly Barnes
2 West Front Road
Pagham
Bognor Regis
West Sussex
PO21 4SY

Site Address:

2 West Front Road
Pagham
Bognor Regis
West Sussex
PO21 4SY

Acoustic Engineer:

Mr. Michael Vine

Equipment used:

Norsonic Environmental Analyser 121 – serial No 31375, Cal due March 2022

Analyser complies with the following standards:

IEC 60651 type 1
IEC 60804 type 1
IEC 61260 class 1
IEC 225
ANSI S1.4-1985 type 1
ANSI1.43 -1997 type 1
ANSI S1.11-1986 order 3type1D
DIN 45 657
Norsonic Production Standard set for the Nor121.

Measurement Microphones – Gras 40AF, serial No 62522 & 62328 – calibration due March 2022

Acoustic Calibrator - (Type 1251) – Serial No 31652, Calibration due August 2022

Measurement Procedure:

The internal ambient noise levels were recorded for a 24hour period in two locations between Wednesday 10th & Thursday 11th November 2021 to measure the noise levels in the lounge & bedroom of the property.

These levels were measured to ensure the requirements of the LPA and BS8233 had been achieved. The trickle vents and some windows were open during the assessment period.

The following condition was placed on the application:



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- 3 Prior to the occupation of the development, a scheme shall be submitted to and approved by the Local Planning Authority to demonstrate that the internal noise levels within the residential units

DN870-(029) 2018
007 COUNCIL REVISION

Arun District Council P/10/20/PL

1 of 5

will conform to the "Indoor ambient noise levels for dwellings" guideline values specified within Table 4 under section 7.7.2 of BS 8233:2014.

Details shall be compiled by a competent acoustician on sound insulation and noise reduction for buildings and shall be submitted to and approved in writing by the Local Planning Authority. The scheme should take into account the correct number of air changes required for noise affected rooms. The works specified in the approved scheme shall then be carried out in accordance with the approved details prior to occupation of the premises and a test carried out on completion to ensure the required levels are met. All parts of the approved scheme shall be retained thereafter.

Reason: This is required to be a pre-commencement condition to ensure sufficient drainage can serve the site and to protect the amenity of local residents in accordance with Policy QE DM1 of the Adopted Arun Local Plan 2011 - 2031.

Due to the fact that the house had been built for 15years, this was an internal validation survey to ensure the levels in the table referenced above have been achieved. No recent alterations have been made to the dwelling; it has remained in its current condition since it was built some 15years ago.



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Executive Summary:

1.1 Airtight & Noisecheck Ltd were instructed by Carly Barnes to undertake an internal Noise Validation Assessment at 2 West Front Road, Pagham. The property was built 15years ago and nothing has changed since then. The local authority has requested a noise validation report be undertaken.

Please Note – This Noise Impact Assessment was undertaken once traffic levels were back to normal in the area & the national lockdown restrictions had been lifted.

The noise levels were measured for a 24hour period inside the bedroom at the front of the dwelling and externally in the centre of the amenity space.

1. Road Traffic Noise from the local road network
2. Noise associated with the commercial units in the local area

The internal levels were measured to ensure the mitigation measures installed achieved the internal acoustic criteria as set out in Table 4 of BS8233: 2014.

The noise levels indicate that the desired acoustic criteria have been achieved internally at the site. The measured levels are below the upper limits as shown in the table below. The dwelling was naturally ventilated during the assessment.

BS8233: Table 4 – Indoor Ambient noise levels in dwellings

Activity	Location	0700-2300	2300-0700
Resting	Living Rooms	35dB LAeq,16hour	-
Dining	Dining Room/Area	40dB LAeq,16hour	-
Sleeping (daytime resting)	Bedroom	35dB LAeq,16hour	30dB LAeq,8hour

The internal levels were measured in a lounge & bedroom to determine worst case scenario with regards to local noise sources. The measured levels measured all noise associated with the dwelling over a 24hour period.



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Assessment Criteria:

The NPPF came into effect in March 2012 & updated in July 2021. It replaced other documents such as PPG24. The NPPF provides several objectives and aims that are directed towards avoiding significant adverse impacts and reducing others on quality of life and health. This document states that:

The planning system should contribute to and enhance the natural and local environment by: preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability.

The NPSE states the following aims with respect to noise policy:

Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of the Government policy on sustainable development:

*avoid significant adverse impacts on health and quality of life;
mitigate and minimise adverse impacts on health and quality of life; and
where possible, contribute to the improvement of health and quality of life.*

BS8233: 2014 'Guidance of Sound Insulation and Noise Reduction for Buildings' defines a range of ambient noise levels for design purposes, in order that appropriate conditions are achieved in certain internal environments. These internal requirements are listed in the table below.

BS8233: Table 4 – Indoor Ambient noise levels for dwellings

Activity	Location	0700-2300	2300-0700
Resting	Living Rooms	35dB LAeq,16hour	-
Dining	Dining Room/Area	40dB LAeq,16hour	-
Sleeping (daytime resting)	Bedroom	35dB LAeq,16hour	30dB LAeq,8hour



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1 Objective:

1.2 To determine if the required internal acoustic criteria has been achieved after the building being erected and suitable building elements installed. The building was completed 15years ago and built with robust and comprehensive measures.

1.3 The internal noise levels were measured for the 24hour assessment period.

2 Calibration:

2.1 The measurement microphones were calibrated before and after testing in each measurement location and there were no drifts recorded during the assessments.

3 Site Layout & Microphone Position:

3.1 The proposed site is located to the North of West Front Road & to the West of Beach Road within a predominantly residential area. There are residential dwellings located immediately to the West & South of the dwelling with a car park located to the North. The Pagham Club is located to the East and this was in operation during the assessment.

3.2 No drawings are available for the dwelling. The dwelling is single storey with the lounge & one bedroom located at the front of the building, with the second bedroom located to the rear (South elevation). The microphones were located:

1- Noise sensitive bedroom at the front of the building. It was at least 1.2m from ground level

2- Noise sensitive lounge – Northern facing room and closest to Pagham Club – 1.2m from ground level

4 Weather Conditions:

4.1 The weather was dry & clear during the measurement procedures, the temperatures ranged between 12-15degrees. There was no wind or rain during the measurement procedure.



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5 Results:

5.1 The purpose of this measurement procedure was to calculate the noise levels apparent within the noise sensitive room & amenity space & to ensure the requirements of BS8233 & WHO can be met.

LAeq 16hour & 8hour Values:

Mic Location	LAeq 16hour Value	Criteria Achieved	LAeq 8hour Value	Criteria Achieved
ML 1 – Lounge	30dBA	Yes	24dBA	Yes
ML 2 – Bedroom	23dBA	Yes	17dBA	Yes

6 Results Conclusion:

6.1 The measured levels easily achieve the required acoustic criteria as stated in the conditions of the planning application. Therefore, the future residents of the dwelling can ensure a suitable standard of living by way of acoustic comfort.

6.2 The internal levels were taken in the lounge & bedroom which is located at the front of the property and therefore is the worst-case scenario for the dwelling. The other is located to the rear of the property and therefore will be exposed to lower noise levels due to orientation and screening.

7 Building Specifications:

7.1 The walls are believed to be a cavity construction with both leaves masonry with flexible wall ties and wet plaster finish internally. Particular attention is to be paid to filling of all joints, bricks are to be laid frog uppermost, and cavities are closed at reveals with proprietary thermal closers. The wall is to be taken to the underside of the roof finish at the eaves, with any gap packed with mineral fibre. (Achieving a difference between outside and inside of 54-60 dB)

7.2 The external door is a proprietary door and door set with the door having an airtight seal to the frame, with the threshold sealed. The joint between the door and the frame to be sealed with a continuous flexible sealant. The door provides access to the corridor only, which has further doors and partitions between it and any habitable rooms. (Achieving a difference between outside and inside of 35 -40 dB)

7.3 The windows are a proprietary manufacture with well fitted sashes sealed to frames when closed. To be double glazed with 6mm laminated glass. (Achieving a difference between outside and inside of 30 - 33dB)

7.4 The dwelling is ventilated via trickle vents and openable windows

7.5 The roof is tiles on battens with mineral fibre insulation with 12.5 plasterboard and 5mm plaster skim finish.



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8 Results Summary:

8.1 The measured levels at the site indicate that the required sound reduction measures applied to the building elements have ensured that the acoustic criteria for the internal spaces have been achieved and therefore the relative conditions have been met. No further works are required to reduce the acoustic noise levels at the site, and it is anticipated that the future occupants can be ensured of a good standard of living by way of acoustic criterion.

8.2 The dwelling was built circa 15years ago and has not been modified or changed during this time. The dwelling is located in a predominantly residential area and located next to Pagham Club. It must be noted that Pagham Club was in operation during the time of the assessment and had a quiz in operation during the night time period.

8.3 The measured levels in both the lounge and bedroom and very low and meet the requirements of Table 4 as listed in BS8233: 2014, therefore the future residents of the dwelling will not be adversely affected by the local noise sources in operation and the future residents should ensure a suitable acoustic environment.



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APPENDIX

Continuous equivalent noise level, LAeq — The steady noise level (usually in dBA) which, over the period of time under consideration, contains the same amount of sound energy as the time varying noise.

LAm_{ax} - The maximum value that the A-weighted sound pressure level reaches during a measurement period.

dB (A) — The A-weighted sound pressure level.

Decibel (dB) — A unit used for many acoustic qualities to indicate the level of sound with respect to a reference level.

A-weighting — A frequency weighting that relates to the response of the human ear.

Background noise level — Prevailing noise level in a specified environment measured in the absence of the noise being studied.

Habitable Room — A room used for sleeping or recreation/relaxation.

D_{ne,w} Weighted element normalised level difference — A single-number quantity which characterises the airborne sound insulation of a small building elements.

EPU — Environmental Protection Unit

R_w Weighted sound reduction index — A single-number quantity which characterises the airborne sound insulation of a material or building element measured in the laboratory.

LA₁₀ — The A-weighted noise level exceeded for 10% of the measurement duration.

LA₉₀ - The A-weighted noise level exceeded for 90% of the measurement duration.

British Standards & associated documents:

Code of Practice: BS8233: 2014 - Sound Insulation and noise reduction for buildings.

ProPG: Planning & Noise - Professional Practice Guidance on Planning & Noise - May 2017

ACOUSTICS VENTILATION AND OVERHEATING - Residential Design Guide – Jan 2020

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9 Google Earth:





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1-hour values – Lounge & Bedroom

Time Period	LAeq - Lounge	LAeq - BR
(2021-11-11 07:00:08.890)	26.8	19.9
(2021-11-11 08:00:08.890)	28.7	22.3
(2021-11-11 09:00:08.890)	29.9	23.6
(2021-11-10 10:00:08.890)	38.3	28.1
(2021-11-10 11:00:08.890)	29.5	26
(2021-11-10 12:00:08.890)	31.6	28.1
(2021-11-10 13:00:08.890)	28.4	24
(2021-11-10 14:00:08.890)	27.1	24
(2021-11-10 15:00:08.890)	27.3	21.6
(2021-11-10 16:00:08.890)	28.2	24.2
(2021-11-10 17:00:08.890)	24.3	19.5
(2021-11-10 18:00:08.890)	27.2	21.4
(2021-11-10 19:00:08.890)	25.4	22.4
(2021-11-10 20:00:08.890)	23.8	17.5
(2021-11-10 21:00:08.890)	24.7	16.9
(2021-11-10 22:00:08.890)	25.7	22.5
(2021-11-10 23:00:08.890)	23.2	16.4
(2021-11-11 00:00:08.890)	25.4	16.4
(2021-11-11 01:00:08.890)	22.7	16.3
(2021-11-11 02:00:08.890)	22.5	16.3
(2021-11-11 03:00:08.890)	22.6	16.3
(2021-11-11 04:00:08.890)	23.4	16.4
(2021-11-11 05:00:08.890)	23.3	16.4
(2021-11-11 06:00:08.890)	25.3	18.7

A Graph showing the LAeq 1hour values in the lounge & bedroom

