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NOISE IMPACT ASSESSMENT FOR:

**MR JOE MAYDAY
21 ST CATHERINES ROAD
HAYLING ISLAND
HAMPSHIRE
PO11 0HF**

SITE ADDRESSES:

**REAR OF 21 ST CATHERINES ROAD
HAYLING ISLAND
HAMPSHIRE
PO11 0HF**

A handwritten signature in grey ink, which appears to be "Michael Vine", is shown above a horizontal line.

Acoustic Engineer:

Michael Vine

Date: 16th September 2013

AIRTIGHT & NOISECHECK BUILDING ACOUSTIC TESTING

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Date: 16th September 2013

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Customer Name:

Testing Date: 16th September 2013

Mr Joe Mayday
21 St Catherines Road
Hayling Island
Hampshire
PO11 0HF

Site Addresses:

Rear of 21 St Catherines Road
Hayling Island
Hampshire
PO11 0HF

Acoustic Engineer:

Mr. Michael Vine

Equipment used:

Nor118 Integrating Sound Level Meter – Serial No 31633, Calibration due June 2014.

Analyser complies with the following standards:

IEC 60651 type 1
IEC 60804 type 1
IEC 61260 class1
IEC 61672 class1
ANSI S1.4 – 1997 type 1
ANSI S1.43 – 1997 type 1
ANSI S1.11 – 1986 type 1D

Microphone (Gras 40AF) – Serial No 51465, Calibration due June 2015

Acoustic Calibrator (Nor 1251) - serial no 29212 - Calibration due June 2014

Measurement Procedure:

Varying measurement procedures were used to determine the difference in noise emissions between varying surfaces used for vehicles parking and turning. All procedures were carried out at the same site address.



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Executive Summary:

Airtight & Noisecheck Ltd were instructed on behalf of Mr Joe Mayday to undertake an acoustic survey to determine the impact, if any of the gravel driveway accessing the dwelling at the rear of 21 St Catherine's Road.

After undertaking numerous noise levels of varying surfaces it is clear that Gravel is a louder surface when in use by vehicles and once the driveway has been re-laid using block paving then the noise should be dramatically reduced. The client has stated that he is prepared to relay the driveway with block paving, once this is done the potential noise emissions should be reduced by approximately 14dB.

Based on the permission already having been granted for the front driveway to be gravel and the similar distance between this driveway and the neighbouring dwelling it seems excessive that the gravel driveway to the rear would pose a nuisance to the neighbours. The driveway will not be in constant use and will only be used when vehicles arrive or leave the dwelling.

In addition to the above a similar development was constructed a little further down St Catherine's Road and a Gravel driveway was laid in this instance, also the neighbouring dwellings were closer to the driveway than is the case at the above site. This suggests a precedent has been set for the area and also indicates that Gravel driveways should not pose a nuisance for the neighbouring dwellings.

A sound reduction of 14dB is vast and once the alterations have been made the noise levels apparent on the driveway will be far less than those already apparent, although it is evident that many other dwellings located in the immediate vicinity of the site use Gravel for their driveways.



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1 Objective:

1.1 The purpose of the noise assessment was to determine the reduction in noise emissions produced by a block paved driveway and a gravel driveway, and to indicate that the use of the driveway at the above site address should not increase the likelihood of complaints for neighbouring residences.

2 Calibration:

2.1 The measurement microphone was calibrated both before and after the measurements and no drift was recorded.

3 Site Layout & Microphone Position:

3.1 21 St Catherine's Road is located immediately to the South of St Catherine's Road, it has neighbouring properties to the West & the East with further properties located to the North of St Catherine's Road also. The closest dwelling to the driveway is located approximately 4metres to the West of the driveway, the driveway (existing & new) run parallel to this dwelling.

3.2 A Planning application was approved for the construction of a detached dwelling in the garden of 21 St Catherine's, thus the new dwellings being located a further 27metres to the South of 21 St Catherine's Road. At present the new dwelling is accessed by vehicles using a gravel driveway from the front of St Catherine's Road to the dwelling. It is understood that the client has violated some planning conditions by laying a gravel driveway to the rear dwelling. However they do have approval for a gravel driveway at the front of the site serving the existing dwelling located immediately adjacent to St Catherine's Road.

Varying noise levels were recorded at the site address, these included:

- Vehicles using Gravel driveway at the front of the site
- Vehicles using the rear gravel driveway accessing the rear dwelling
- Vehicles using the tarmac section of driveway for a comparison
- Vehicles simulating parking on the road in order to get a fair representation of the assumed noise levels once the driveway is re-laid.

4 Hours of Operation:

4.1 It is anticipated that the rear dwelling will be accessed as a typical dwelling and thus vehicles will access the dwelling at typical times throughout the day and evening.

5 Description of Testing:

5.1 As previously stated the noise levels were measured for the above practices at varying times between 1345-1445 on Monday 16th September 2013. It was a typical day for the area with very little other activity occurring during the measurement period. It must be stated that no levels were measured whilst other vehicles were using the immediate area.



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6 Results:

6.1 All of the results listed below were taken either at the boundary of the dwellings or at a similar distance from the nearest noise sensitive dwelling in relation to the proposed driveway.

Location	LAeq Value	LA90 Value
Gravel Driveway (existing at front of property)	69dB(A)	59dB(A)
New Gravel Driveway	69dB(A)	62dB(A)
Solid Driveway	55dB(A)	51dB(A)
Road - Parking	55dB(A)	44dB(A)
Background Noise Levels	51dB(A)	42dB(A)

All values listed above are measured in 'A: weighting - dB(A).

All values have been rounded up or down accordingly.

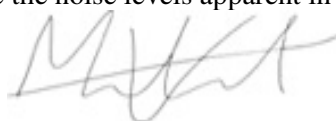
7 Conclusion:

7.1 It can be seen from the table above the typical noise emissions produced on the rear gravel driveway are identical to the noise levels for the gravel driveway at the front of the dwelling. Permission was approved for the driveway at the front. This indicates that the rear driveway should not increase the likelihood of complaints due to the noise levels being identical to those already apparent at the front of the dwelling.

7.2 The client has already insisted that he is removing the gravel and replacing it with either block paving or tarmac. If this is the case then it is clear to see that the noise levels will be reduced by approximately 14dB, this is a high level of reduction and will be far less than the current level of noise apparent when vehicles use the gravel driveway at the front of the dwelling.

7.3 The cars using the driveway will only be driving at approximately 10mph, and tarmac/block paving drives do not produce noise emissions until they reach speeds of approximately 48kmh therefore the only noise that will be apparent is the engine noise from the car. This type of noise is a common noise emission associated with residential dwellings with driveways and by no means should it pose a nuisance to neighbouring dwellings.

7.4 There has always been a dwelling apparent at 21 St Catherine's Road thus the neighbouring properties have always been used to vehicles using the driveway area. The proposed noise emissions from a solid driveway are only +4dB above the background LAeq value taken during the day time, this level of increase should not pose a nuisance for the residents and it will only be apparent when the vehicles are using the driveway which will be seldom. In addition when the vehicles to the other dwellings use their drives these values will be apparent there also thus indicating that the vehicles using the new dwelling will not be unique nor will they increase the noise levels apparent in the area.



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8 Site Photo:



The above photo clearly shows both the gravel driveway that is to be replaced and the gravel driveway at the front that has been approved.

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This photo has been included to show a property further down St Catherine's Road, the driveway is also gravel and it provides access to the dwellings located to the rear of the two in shot.

The two dwellings that are clearly visible are closer to the gravel than the neighbouring property to 21 St Catherine's Road thus indicating that the vehicular use on gravel driveways does not pose a nuisance for neighbouring properties.

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9 Acoustic Definitions:

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.

L_{Amax} - 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) — (1) Degree of loudness. (2) A unit for expressing the relative intensity of sounds on a scale from zero for the average least perceptible sound to about 130 for the average pain 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.

British Standards & associated documents:

Code of Practice: BS8233: 1999 - Sound Insulation and noise reduction for buildings.

World Health Organization (WHO) - Guidelines for Community Noise.

The Little Red Book of Acoustics: R.Watson & O. Downey, 2008

Sound Propagation: For a line Source

$$L_2 = L_1 - 10 \log (r_2/r_1)$$

Where:

L₂ = Predicted noise level at nearest noise sensitive façade.

L₁ = Noise level at source

R₂ = distance to nearest noise sensitive façade (5metres)

R₁ = distance to original noise level (1metre)

Equation used for car park noise:

$$L_2 = L_1 - 15 \log (r_2/r_1)$$

Where:

L₂ = Predicted noise level at nearest noise sensitive façade.

L₁ = Noise level at source

R₂ = distance to nearest noise sensitive façade (5metres)

R₁ = distance to original noise level (1metre)



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