



**Client:** Mr Dean Simpson  
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PO19 5EB

**Site:** 208 London Road  
Waterlooville  
Hampshire  
PO7 7AN

**Date:** 1<sup>st</sup> June 2016

**Project:** Measuring the current noise climate at the existing dwelling (proposed driveway/car parking location) to determine if vehicle movements accessing the proposed residential development will have an adverse impact on the existing neighbouring dwellings.

**Written by:** Mr Michael D Vine ~ BSc Hons, MIOA

The purpose of this assessment is to determine the potential impact the vehicle movements for the proposed dwellings will have on the existing neighbouring dwellings. The proposed dwellings are to be located to the South & West of the existing dwellings, with the access drive way located to the South of the site. The local authority are concerned about the potential impact of the car parking & vehicle movements at the Eastern boundary of the site, in particular the Northeast corner where the vehicles will be in relatively close proximity to No's 206 (South) & 208A (North) London Road & No's 1&2 Farm Lane Close (East) which is located to the East.

The proposal is for there to be 4 x no of semi detached houses & 1 x detached dwelling, so 5no in total. These will be located between 206 & 208A London Road, with associated car parking to the rear (east of the site). There are existing residential dwellings in the immediate vicinity (London Road & Farm Lane Close) so this document will assess the impact these vehicle movements may have on these dwellings. There will be a robust boundary fence erected around the site.

The calculation used to determine the impact for the vehicle movements is:

$$LA_{eq}(T) = SEL + 10 \log N - 10 \log T$$

where

$LA_{eq}(T)$  = Equivalent continuous sound pressure level over time period T

SEL = 'Single Event Level', i.e. the 1 second  $LA_{eq}$  which has the same total A-weighted energy as the entire event

N = Number of events in time period T (10)

T = Time period in seconds (3600)

The microphone was located at the Northeast corner of the site to ascertain the noise level in the area where the vehicle movement will be made, in close proximity to the neighbouring dwelling.

The worst case scenario has been assumed and that is that there will be two vehicle movements in any hour for each dwelling (in reality there will probably be 4-8 movements every 8hours). The proposed impact of the vehicle movements can be determined by the equation listed above. The detailed calculations are shown below.

It is highly unlikely that there will be more than 4 vehicle movements in any 1hour but the assumed impact of 8 vehicle movements have also been included.

Due to an equipment malfunction the noise levels were only measured for 17hours and the noise levels were not measured during morning rush hour. They were however, measured during the evening rush hour and early morning so these levels can be used for the calculations. It was anticipated that the noise levels ran for a 24hour period but the external battery pack failed. It can be seen from the measured levels though that the noise associated with the site was fairly consistant throughout the time when the vehicle movements will be at their most frequent.

| Time Period | Laeq 1hour | LA90 1hour |
|-------------|------------|------------|
| 0430-0530   | 51dBA      | 35dBA      |
| 1730-1830   | 56dBA      | 51dBA      |
| 1830-1930   | 55dBA      | 49dBA      |

The calculation table below shows the calculated noise levels from the vehicle movements at the nearest noise sensitive façade. This equation shows the potential impact from 10 no vehicle movcements in any one hour period.

|                                        | Car Movements        |              |
|----------------------------------------|----------------------|--------------|
| <b>SEL dB(A) @ 2m</b>                  | 65                   |              |
| <b>No of events</b>                    | 10                   |              |
| <b>Distance, m</b>                     | 3                    |              |
| <b>Distance correction</b>             | -2 for a line source |              |
| <b>Reference period</b>                | 1 hour               |              |
| <b>Correction for reference period</b> | -26                  |              |
| <b>Barrier correction</b>              | -5                   | <b>Total</b> |
| <b>Total Noise at dwelling</b>         | 32                   | <b>32</b>    |

The above table includes a distance equation from the drive way to the nearest noise sensitive window, the window will be approximately 3metres from the drive way and the source has been deemed a line source (a 2m distance was assumed for vehicle monitoring location). In addition to this there will be a timber fence erected along the Northern & Eastern boundary of the site. A -5dB reduction has been applied for this barrier, but even without the barrier the impact is non existant.

It can be seen that based on the anticipated number of car movements and the noise decay over distance the vehicle movements, using the proposed drive way, should not have an adverse impact on the exisitng dwellings. The table indicates that the specific level will be -19dB below the lowest  $L_{Aeq\ 1hour}$  value (measured at 0430-0530) and -3dB below the  $L_{A90\ 1hour}$  value thus indicating no adverse impact. The calculated noise will be in excess of -17 below the  $L_{A90\ 1hour}$  values between the hours of 1830-1930 and this figure is a more representatve value than the 0430hrs one as there will be very little to no vehicle movement at 0430hrs.

It must also be noted that the noise associated with vehicular traffic using London Road was observed during the measurement period. There was a constant flow of traffic apparent during a 30minute period and the noise levels associated with them ranged between 65-70dBA, indicating that the residential dwellings are exposed to higher levels of noise from vehicles using the local road network than they would be from cars using the drive way to the proposed dwelling.

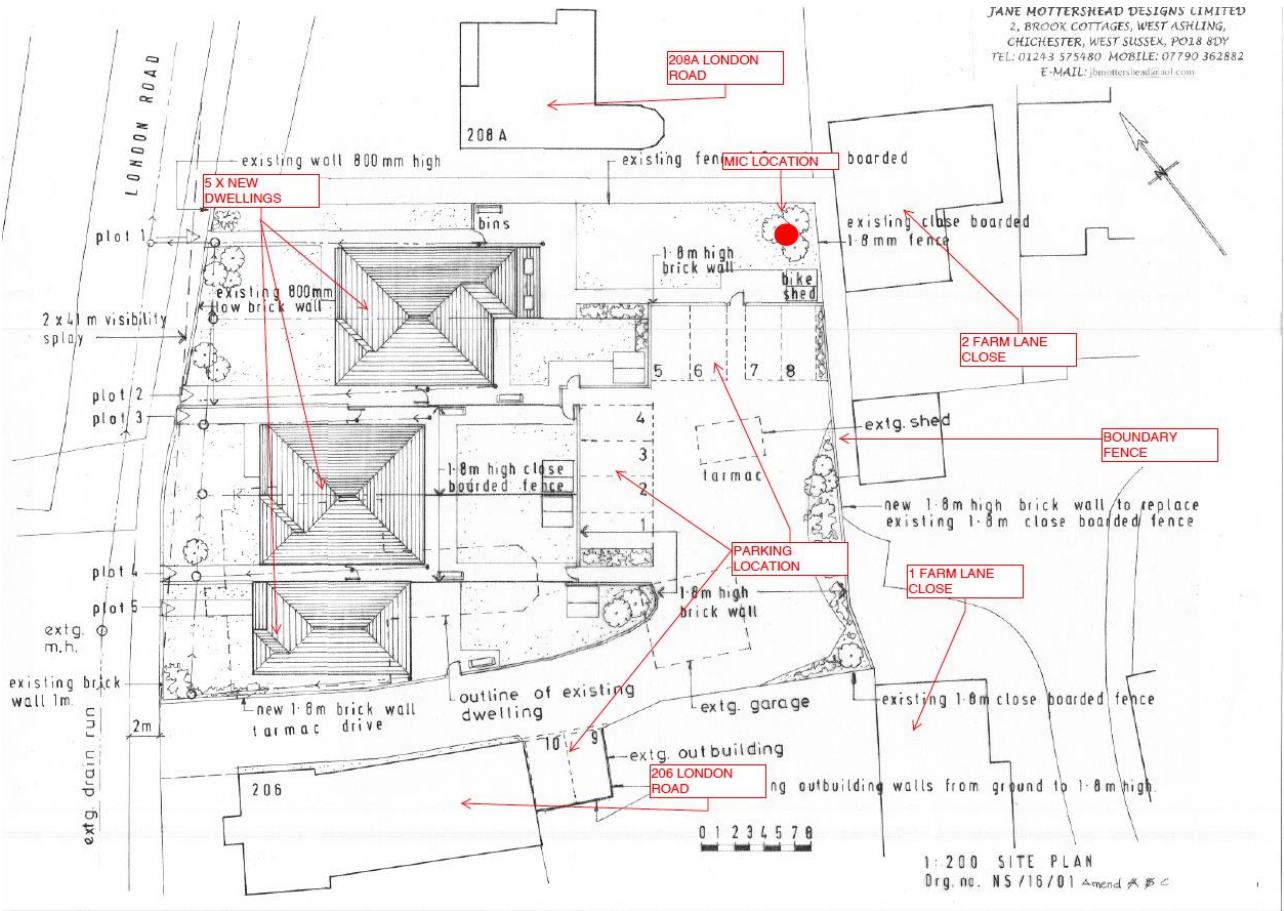
### **Conclusion:**

From the detailed calculations shown within this report it is clear to see that the proposed vehicular traffic using the access road/driveway to the new dwellings should not have an adverse impact on the existing dwellings located at 206 (South) & 208A (North) London Road or 1-2 Farm Lane Close (East), Waterloooville.

The proposed noise associated with the vehicular traffic will be lower than the exisitng noise climate over the reference period, in addition to this the vehicular traffic using London Road is a more frequent noise due to the increased number of vehicles and the noise associated with these vehicles is higher than the calculated noise will be.

Not all vehicle movements will be as close to the dwellings as listed in this report, the vehicle movements for 2 of the dwellings will be located further South thus further away from the dwellings and the impact will be even less.

Site Plan:



Google Earth:

