Sound Advice
ACOUSTICS LTD

Acoustic Consultants and Engineers

TECHNICAL NOTE

13th February 2015

CLIENT

Mr David Cunnea
Newdeeps Farm
Winchester Road
Lower Upham
Winchester

SITE

Proposed Dog Kennels
Newdeeps Farm
Winchester Road
Lower Upham
Winchester

This technical note, consisting of further calculations and assessments has been carried out following detailed discussions with both the planning Department and Environmental Health department at Eastleigh Borough Council in order to satisfy the queries raised within our initial meeting in respect to the above project and their concerns relating to noise.

The following technical note is to be read in conjunction with our original noise report dated 19th May 2014 SA – 3164 / RV.01.

Since the issuing of this report several elements of the design have changed and are reflected within the following technical note.

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UKAS Accreditation for Building Regulations Approved Document E

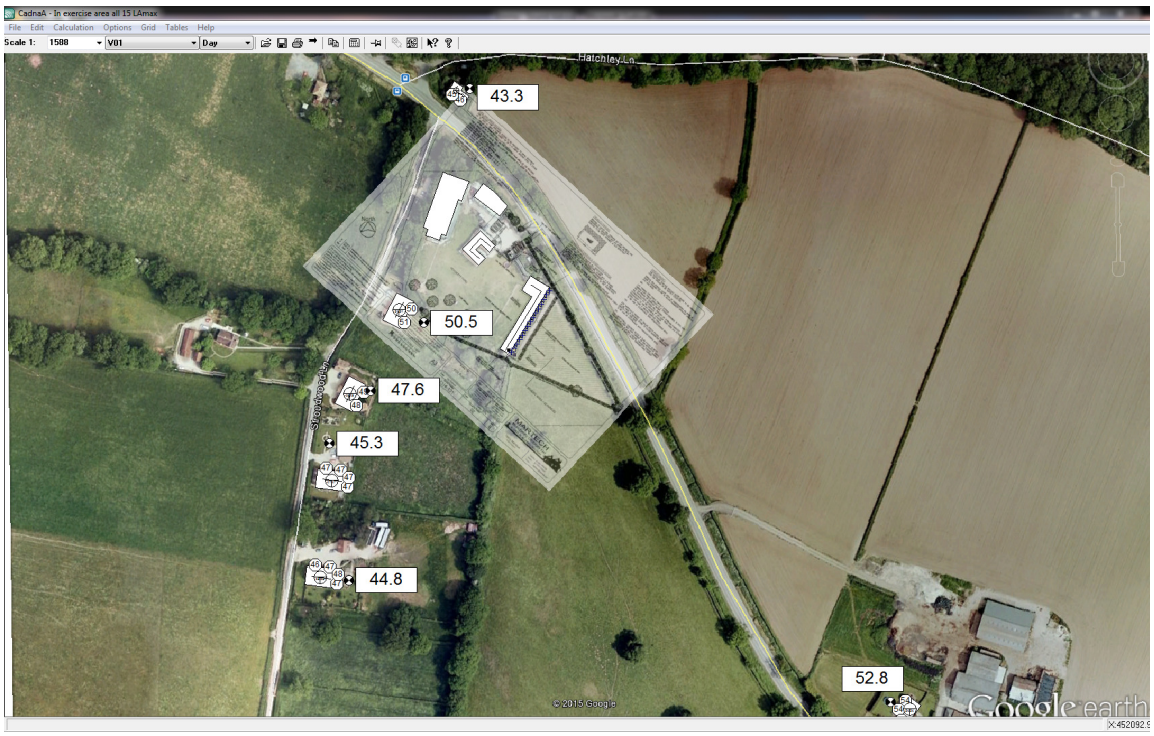
1. It is proposed that the kennel and other areas of the proposed development be sufficiently ventilated using a standard domestic bathroom ventilation system. A Manrose fan unit available from Screwfix has been selected with manufacturers data of Lw 45 dB confirmed. This data has been updated onto our existing 3D model and the following CADNA A calculations made. The following screen shot demonstrates the positions of the fan units and the calculated resultant noise levels at the expanded neighbouring properties. The model demonstrates noise levels from all fans operating continuously will not be measureable or audible at any surrounding properties or within any other neighbouring amenity areas.

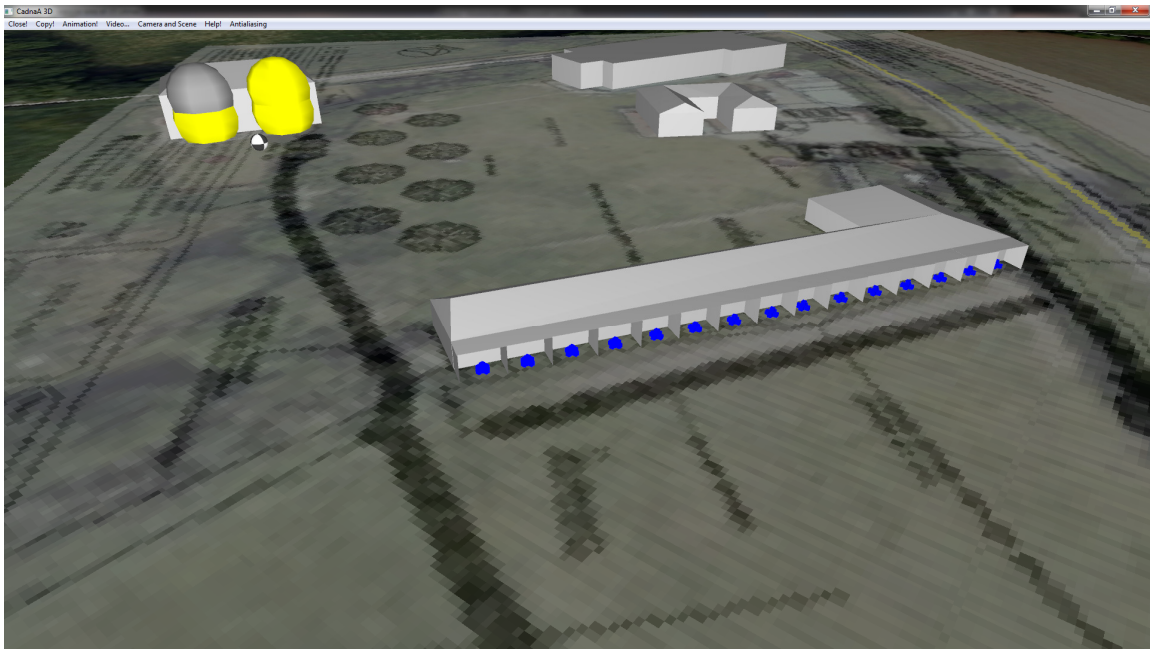


Based on the above calculated noise levels, no further noise assessments are possible and therefore not required.

2. ALL 15 Dogs Barking within the proposed external covered individual exercise area simultaneously with no time correction applied and thus calculating a resultant instantaneous noise level at the surrounding residential areas.

15 Dogs at Lmax 102 dB(A) @ 1m





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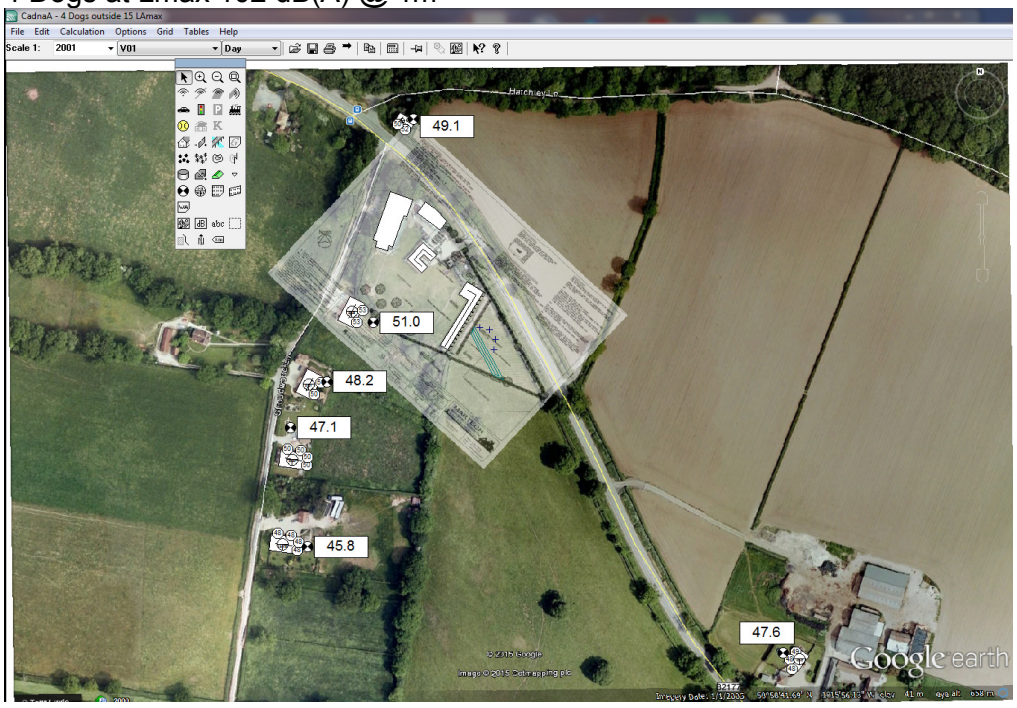
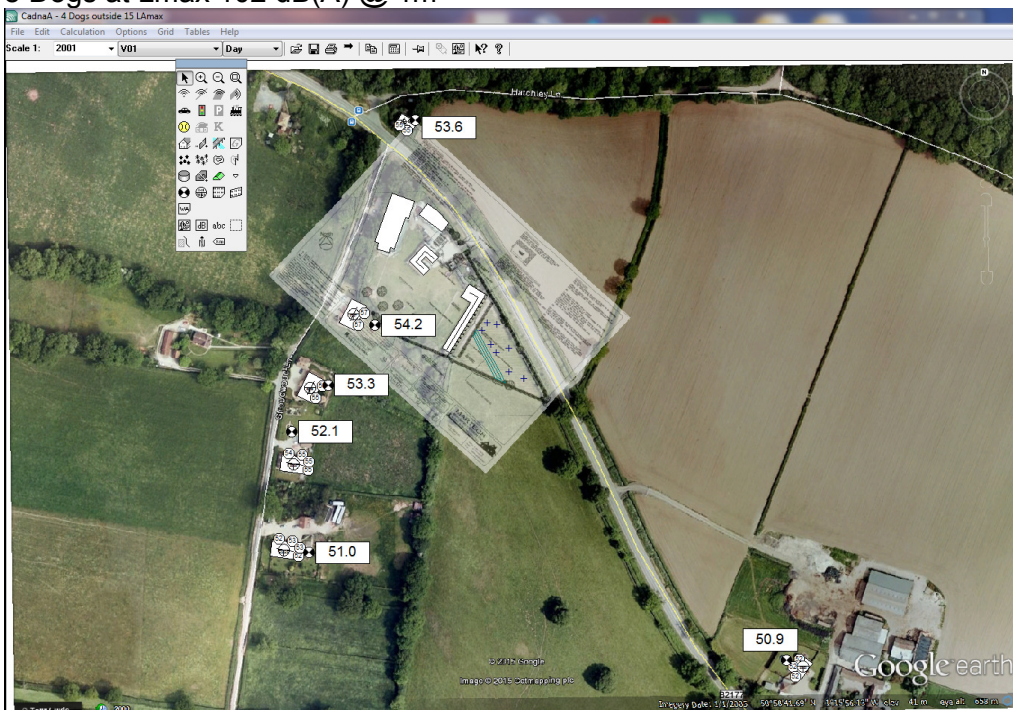
3. Dogs outside in the recreational area at the same time LAmax dB Noise Level with the proposed 2.0m high bund across the site as discussed within our recent meeting.

4 Dogs at Lmax 102 dB(A) @ 1m



8 Dogs at Lmax 102 dB(A) @ 1m



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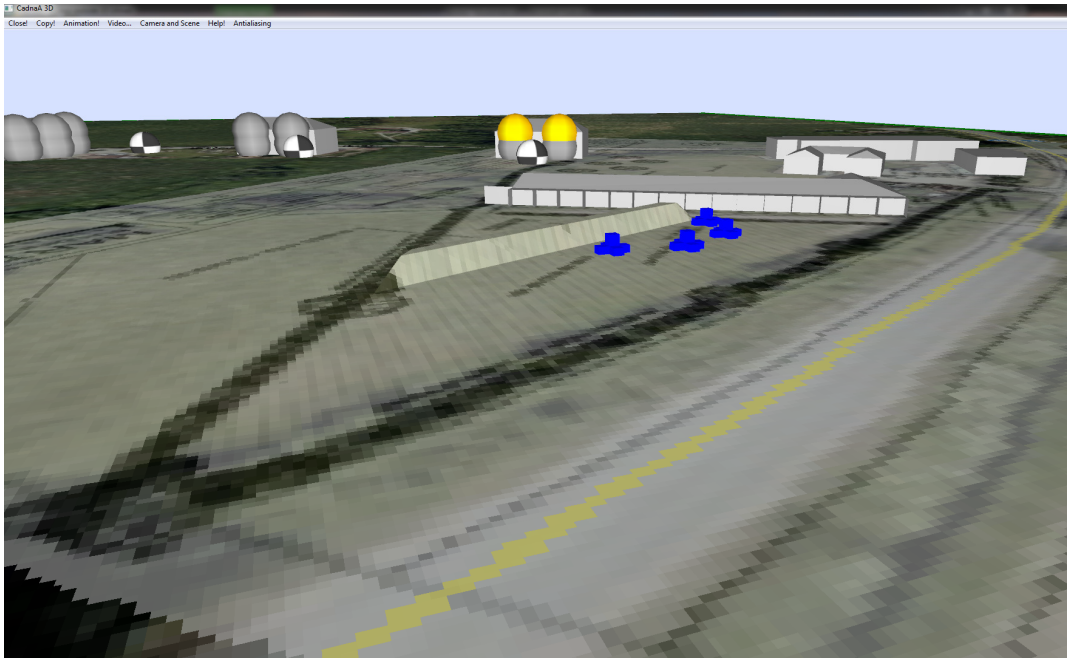


The above 3D models show that 8 dogs outside will generate noise levels at the residential properties of below 55 dB(A) taken from the LAmax dB noise levels. Taking into account an assessment to the clay target shooting CIEH. The short impulsive noise source of a gun shot could be similar to that of dog barking and therefore Eastleigh Borough Council have suggested noise levels be reviewed with this document in mind. At shooting noise levels below the mid 50's dB(A) there is little evidence of significant levels of annoyance at any site. Calculations carried out demonstrate that with eight dogs barking outside simultaneously, which is unlikely, would result in noise levels within the mid 50's.

4. ALL 15 Dogs Barking from inside the kennels.

The proposed kennel design has changed and therefore the following calculations are carried out in order to reflect these new changes. The kennels are to be constructed using a standard brick and block cavity construction giving the following minimum attenuation values.

OUTER WALL CONSTRUCTION – MINIMUM VALUE

125	250	500	1.0k	2.0k	4.0k	Rw dB	Frequency (Hz)
40.0	44.0	45.0	51.0	56.0	58.0	50.0	dB reduction

INNER WALL CONSTRUCTION – MINIMUM VALUE

125	250	500	1.0k	2.0k	4.0k	Rw dB	Frequency (Hz)
39.0	37.0	41.0	49.0	56.0	61.0	47.0	dB reduction

The roof is to be constructed using a standard slate or tile construction with internal plasterboard ceilings giving the following minimum values

ROOF CONSTRUCTION – MINIMUM VALUE

25	250	500	1.0k	2.0k	4.0k	Rw dB	Frequency (Hz)
28.0	34.0	40.0	45.0	49.0	53.0	44.0	dB reduction

SINGLE DOOR UPVC – MINIMUM VALUE

125	250	500	1.0k	2.0k	4.0k	Rw dB	Frequency (Hz)
22.0	24.0	28.0	34.0	33.0	38.0	32.0	dB reduction

WINDOW CONSTRUCTION 4mm glass / 16mm air gap / 4mm glass

125	250	500	1.0k	2.0k	4.0k	Rw dB	Frequency (Hz)
21.1	19.7	31.1	38.2	41.3	38.7	33.0	dB reduction

CALCULATED COMBINED RW OF INNER WALL FROM KENNELS TO CORRIDOR

125	250	500	1.0k	2.0k	4.0k	Rw dB	Frequency (Hz)
28.0	30.0	34.0	40.0	39.0	44.0	38.0	dB reduction

CALCULATED COMBINED RW OF OUTER WALL FROM CORRIDOR TO OUTSIDE

125	250	500	1.0k	2.0k	4.0k	Rw dB	Frequency (Hz)
31.0	30.0	40.0	47.0	50.0	49.0	43.0	dB reduction

The following CADNA A calculations are based on all 15 dogs barking at the same time within a reflective field. A correction factor of 1.2 dB has been applied to the predicted barking dog noise levels in order to account for reflective nature of the environment.

Both the noise breakout from the façade facing wall and roof section have been calculated and representative area sources placed on the building in order to accurately reproduce the noise level breakout.

INTERNAL DOG NOISE Lmax dB						
Calculated Level for Walls	**125**	**250**	**500**	**1.0k**	**2.0k**	**dB(A)**
1 x Dog Barking @ 1m	70.1	82.6	105	107.2	99.5	109.0
Reflective field Correction	1.2	1.2	1.2	1.2	1.2	
Calculated Internal Noise Level	71.3	83.8	106.2	108.4	100.7	110.2
Calculated Façade Attenuation	-31	-30	-40	-47	-50	
Inside to Outside Correction	-6	-6	-6	-6	-6	
Calculated Façade Level	34.3	47.8	60.2	55.4	44.7	59.6

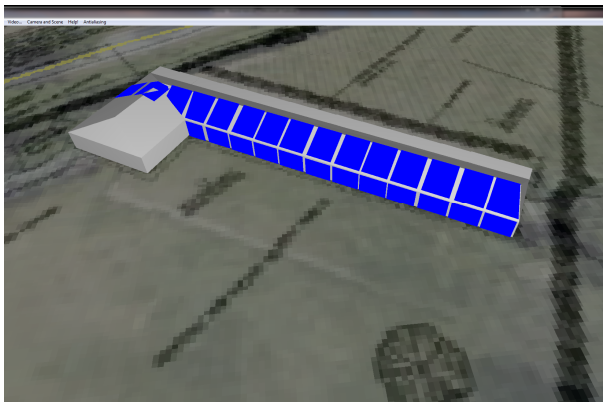
INTERNAL DOG NOISE Lmax dB						
Calculated Level for Roof	**125**	**250**	**500**	**1.0k**	**2.0k**	**dB(A)**
1 x Dog Barking @ 1m	70.1	82.6	105	107.2	99.5	109.0
Reflective field Correction	1.2	1.2	1.2	1.2	1.2	
Calculated Internal Noise Level	71.3	83.8	106.2	108.4	100.7	110.2
Calculated Façade Attenuation	-28	-30	-34	-40	-39	
Inside to Outside Correction	-6	-6	-6	-6	-6	
Calculated Façade Level	37.3	47.8	66.2	62.4	55.7	66.3

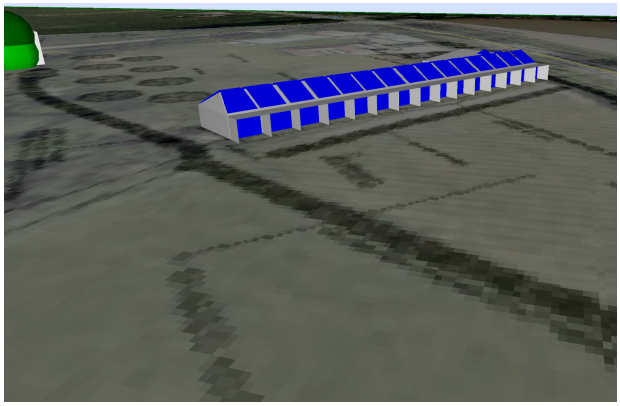
The above calculated area source noise levels are then inputted onto the 3D modelling software in order to replicate the radiating noise from each kennel with a dog barking inside. The calculation takes into account the external wall only and not the inner skin wall which will offer even more attenuation for the wall element and therefore worst case scenario has been calculated.

3D MODEL OF INTERNAL DOGS BARKING



3D VIEW SHOWING ROOF AND WALL AREA SOURCES





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CONCLUSION

Additional calculations and assessments have been carried out to reflect the new layout and the proposed 2.0m bund introduced onto the site. Calculations carried out demonstrate that the noise levels at all surrounding properties will be of an acceptable level and that the design of the dog kennels and the development itself has been specially designed with acoustics in mind. The recreation area outside is to now incorporate a 2.0m acoustic bund and this will further increase the acoustic integrity of the development.

The structure itself has been designed to have acoustically designed walls and roof to ensure that any dogs barking inside will not cause a detrimental acoustic effect to local residents. The twin wall / corridor will have a significant acoustic impact on the development and only the outer wall has been accounted for within our calculations.

External dogs within the exercise yard have been increased to eight in number in order to review the potential impact and the calculated 3D model demonstrates noise levels below 55 dB(A) at the neighbouring residential properties.

Section 14 of the National Planning Policy Framework 2012 suggests that planning permission should be granted unless any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in the framework taken as a whole, or specific policies in the framework indicate the application should be restricted.

Based on the calculations and assessments made within this technical note and our previous external noise assessment, it is the professional opinion of Sound Advice Acoustics Ltd that the proposed dog kennels can operate within the requirements of the National Planning Policy Framework 2012, NPPF & NPSE and that, with regards to sound, planning permission can be granted.