

Noise Statement - 27 Billington Gardens - Proposed Dog Grooming

I have been asked by the applicant to comment on the request for a noise assessment for the above proposal. I am Paul Staley and am a retired engineer with an honours degree in civil engineering from Leeds University. I retired from the post of group manager (development control) for Oxfordshire County Council and have worked for several authorities and consultants and during that time I was a registered Chartered Engineer.

It is fully acknowledged that the planning authority has a duty and indeed obligation under government planning guidance to consider the effect of disturbance to residents of an adjacent proposed development or change of use. This noise impact relates to disturbance in the garden and living areas.

As with most assessments the detail and extent of the assessment should be appropriate and proportionate to the scale and nature of the development. For example a dog kennels are entirely different to the dog grooming proposed in this application. In this particular case the grooming is done by appointment only; only three dogs per day would be able to be dealt with; there would normally be only one dog on the premises at a time; the dog would be with an experienced handler and would not be left alone; dogs would not be kept overnight; the hours of use would be weekday 8.30 am to 5.30 pm and occasionally Saturday morning.

For a dog kennels where perhaps 10 dogs or more are kept at all times, day and night, one may well require a full detailed analytical assessment whilst for a small dog grooming business dealing with one dog for a couple of hours at a time a more appropriate level of assessment is considered suitable.

The assessment below is in line with this approach.

The proposed dog grooming room is located in a former store room which is currently used as a utility room. It is located 2 m from the rear of the house and has been linked to the house by a lean to conservatory. The conservatory extends from the house over 2m along the west side of the proposed dog grooming room with 1m of the room extending past the conservatory. The construction of the room is single skin of brick and plastered/rendered on one side. The conservatory is of double glazed construction.

The authority have to date no approved guidelines for assessing noise impacts on residential properties but have accepted the levels that have been recommended by the World Health Organisation (WHO) as Guidelines for the prevention of Community Noise Annoyance. The WHO recommended maximum noise levels for gardens that should not be exceeded are 55dB(A) LAeq,16hr in order to avoid 'Serious Community Annoyance' or 50dB(A) LAeq,16hr to avoid 'Moderate Community Annoyance' during the day. For indoor levels WHO stipulate 35dB(A) LAeq,16hr during the day to prevent Moderate Annoyance and 30 dB(A)..

When dealing with a new or proposed noise LAeq is often used which is the Equivalent Continuous Level. The formal definition is "when a noise varies over time, the Leq is the equivalent continuous sound which would contain the same sound energy as the time varying sound. For the purposes of this report the recommended maximum LAeq recommended by WHO is taken as the maximum sound level that is acceptable.

As far as the dog grooming is concerned there are two possible sources of noise firstly the drier and secondly possible barking of a dog. As pointed out in the supporting statement the larger canister dryer (Cyclone TD-901T manufactured by Aeolus)) which the applicant proposes to use has power of 1.8 kw. The manufacturer's specified noise level measured 0.5m from the top of the drier is 83db(A). It takes about 5 minutes to dry a dog and the applicant could only groom 3 dogs per day.

As far as the barking of a dog is concerned there is a low risk of this occurring because during the grooming process the dog is handled by an experienced dog groomer and the dog would never be left alone for any significant length of time. However for the purposes of this assessment, whilst there is no guideline issued by the authority, a LAeq of 65.6 at 10m has used as the basis of the calculation for the noise level of the barking of a dog. This is composed of the sound pressure levels of a range of frequencies. It is understood this has been accepted by many authorities including Ribble Valley Borough Council. Unlike kennels where dog barking can continue for some time, in the dog grooming use under consideration, where the dog is attended, it would probably only occur for a matter of seconds if at all.

Sound levels diminish with distance and also by other means including transmission through material other than air. In the following the decibel sound pressure levels are all in terms of dB(A)

The attenuation of noise level with distance is given by

$$\begin{aligned} dL &= Lp2 - Lp1 \\ &= 10 \log (R2 / R1)^2 \\ &= 20 \log (R2 / R1) \end{aligned}$$

where

dL = difference in sound pressure level (dB)

Lp1 = sound pressure level at location 1 (dB)

Lp2 = sound pressure level at location 2 (dB)

R1 = distance from source to location 1 (m)

R2 = distance from source to location 2 (m)

Therefore correcting for the distance of the base level of a dog bark from 10m to 1m the Lp at the wall is 65.6 +20 = 85.6dB

There will be attenuation of the sound by the brick walls of the dog grooming room and of the double glazing of the lean-to conservatory which abuts the proposed dog grooming room. It is generally accepted that mass is a good defence against noise penetration and so brick walls provide a very good way of insulating against sound. The quality of sound insulation does not vary much from brick type to brick type, and so it is possible to generalise about sound reduction values.

The table below gives the sound attenuation of common building elements.

Building Element	Sound Transmission Loss Attenuation (dB)
230 mm brickwork, plastered both sides	55
230 mm brickwork, plastered one side	48
115 mm brickwork, plastered both sides	47

100 mm timber studs, plasterboard both sides, quilt in cavity	46
6 mm double glazing, 100 mm air gap	44
75 mm clinker concrete block, plastered both sides	44
115 mm brickwork, plastered one side	43
75 mm timber studs, plasterboard both sides	36
6 mm single glazing	29
one layer plasterboard	25

The generalised attenuation of double glazing is given below. The width of the gap between the glazing has no effect on noise reduction

4mm low E/4mm cavity, gas/4mm clear. - 31 decibels

There are two cases to consider as the west wall is only enclosed by the conservatory for two thirds of its length

The **first case** occurs if the dryer and hence the dog is close to the part of the wall enclosed by the conservatory.

In this case, from the above, the overall noise attenuation would be 43 (115mm brick wall plastered one side wall)+ 31 (double glazed wall of conservatory) and ignoring any attenuation from distance between the two walls and reflection effects.

Therefore the noise emitted from the property would be

Noise level from the Drier. 83 -74 = 9 dB

Dog barking 85.6 – 74 =11.6 dB

The sound levels are expressed in decibels which are logarithmic. To add two or more levels therefore the equation is:

$$L = 10 \log_{10} \left(\sum_{i=1}^n (10^{L_i/10}) \right)$$

$$L = 10 \log_{10} (10^{9/10} + 10^{11.6/10})$$

Adding these two logarithmically = 13.5 dB

A correction can also be made to this value of -6dB to represent the difference between indoors sound levels and outdoors where there is free field conditions.

The **second case** occurs if the dryer and the dog are both close to the 1.0m length of wall not enclosed by the conservatory.

The noise emitted would be

Noise level from the drier : 83 -43 =40 dB

Noise level of the bark from the dog:85.6 -43 = 42.6 dB

Adding these two noise levels = 44.5 dB

The distance attenuation is $20 \log(3/1) = -9.5\text{dB}$

And attenuation due to free field conditions = -6dB

The noise level in the adjacent garden is therefore predicted to be 29.5 dB for this scenario.

The above two cases assume a worst case with the dryer working and the unlikely event of a dog barking at the same time. This level in both cases is significantly below the thresholds suggested by WHO and therefore the proposed use would not produce an unacceptable level of noise in the adjacent garden nor within the dwelling.

The proposed room has a double glazed window on the south wall which could be opened for ventilation. The neighbouring garden is on the west side of the applicants garden and it is considered that even if this window were opened for ventilation it would not result in an unacceptable noise level in the adjacent garden. However the applicant proposes to install a domestic ventilation unit in the east wall of the room (opposite side of the house to neighbour) and this would ensure absolute minimum noise disturbance occurs..

The above demonstrates that the proposal would not cause an unacceptable noise nuisance.